

COMMONWEALTH OF MASSACHUSETTS



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CONTRACT DOCUMENTS  
AND SPECIAL PROVISIONS

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PROPOSAL NO.	609179-125779
P.V. =	\$2,663,000.00
PLANS	YES

FOR

**Federal Aid Project No. HIP(BR)-003S(723)X  
Bridge Replacement, S-23-012, North Spencer Road (Route 31)  
over the Seven Mile River**

**in the Town of**

**SPENCER**

In accordance with the STANDARD SPECIFICATIONS  
for HIGHWAYS and BRIDGES dated 2024

This Proposal to be opened and read:

**TUESDAY, MAY 14, 2024 at 2:00 P.M.**

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**NOTICE TO CONTRACTORS**

Electronic proposals for the following project will be received through the internet using Bid Express until the date and time stated below and will be posted on [www.bidx.com](http://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 Bid Express.

**TUESDAY, MAY 14, 2024 at 2:00 P.M. \*\***

**SPENCER**

**Federal Aid Project No. HIP(BR)-003S(723)X**

**Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River**  
**\*\*Date Subject to Change**

PROJECT VALUE = \$2,663,000.00

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](mailto:prequal.r109@dot.state.ma.us).

Proposal documents for official bidders are posted on [www.bidx.com](http://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](http://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.

**NOTICE TO CONTRACTORS** (Continued)

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](mailto:MassDOTBidDocuments@dot.state.ma.us).

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, the Division of Occupational Safety, and the United States Department of Labor.

Plans will be on display and information will be available at the MassDOT Boston Office and at the District Office in WORCESTER.

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.



**NOTICE TO CONTRACTORS** (Continued)

**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 \$637.50 per ton, Portland cement \$425.53 per ton, diesel fuel \$3.155 per gallon, and gasoline \$2.695 per gallon, and Steel Base Price Index 420.3. 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](http://WWW.COMMBUYS.COM).

BY: Monica G. Tibbits-Nutt, Secretary and CEO, MassDOT  
Jonathan L. Gulliver, Administrator, MassDOT Highway Division  
SATURDAY, APRIL 13, 2024

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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.



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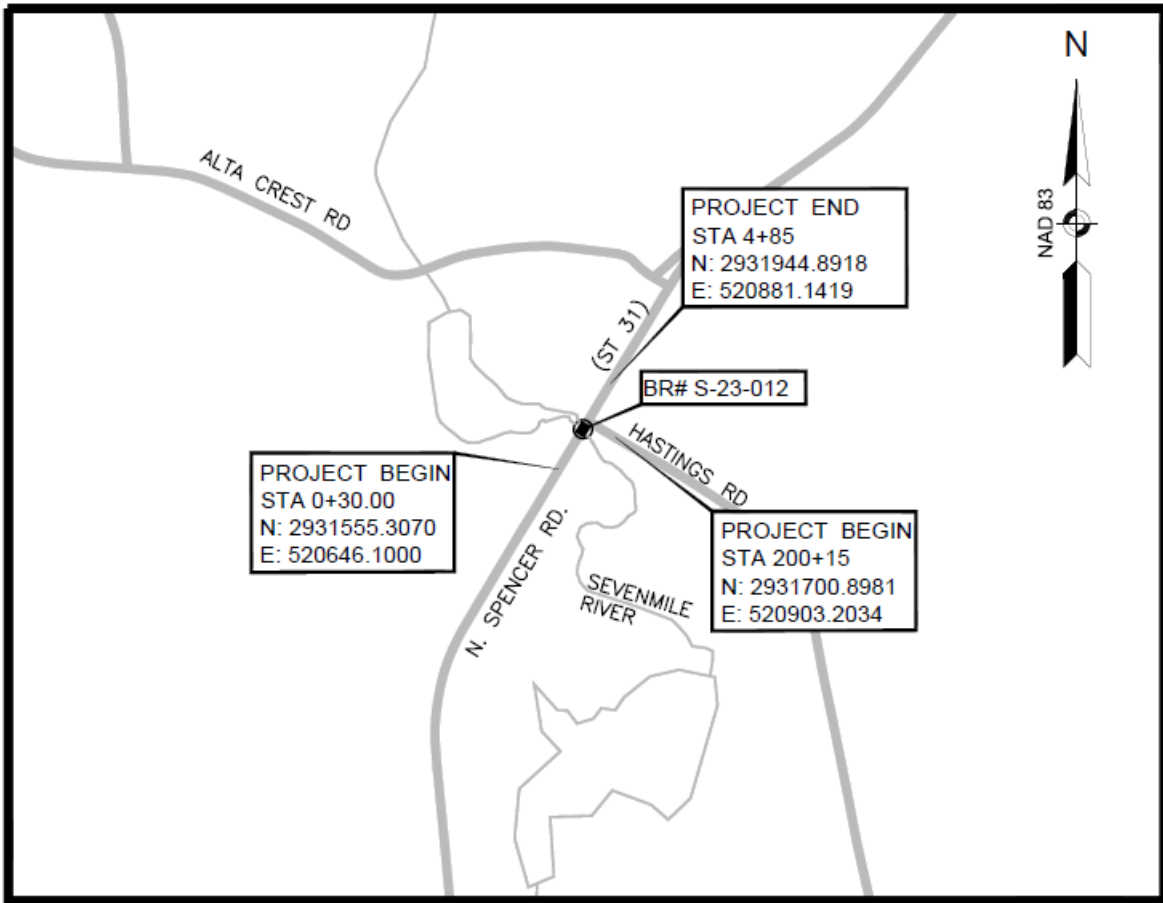
DOCUMENT 00331

**LOCUS MAP**

**SPENCER**

**Federal Aid Project No. HIP(BR)-003S(723)X**

**Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River**



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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
<b>1. Workmanship</b>								x 2=
<b>2. Safety</b>								x 2=
<b>3. Schedule</b>								x 1.5=
<b>4. Home Office Support</b>								x 1=
<b>5. Subcontractors Performance</b>								x 1=
<b>6. Field Supervision/ Superintendent</b>								x 1=
<b>7. Contract Compliance</b>								x 0.5=
<b>8. Equipment</b>								x 0.5=
<b>9. Payment of Accounts</b>								x 0.5=
<b>(use back for additional comments)</b>							<b>Overall Rating:</b>	

*(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: \_\_\_\_\_

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WORK NOT COMPLETED WITHIN SPECIFIED TIME: \_\_\_\_\_

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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
<b>1. Workmanship</b>								x 2=
<b>2. Safety</b>								x 2=
<b>3. Schedule</b>								x 1.5=
<b>4. Home Office Support</b>								x 1.5=
<b>5. Field Supervision/ Superintendent</b>								x 1=
<b>6. Contract Compliance</b>								x 1=
<b>7. Equipment</b>								x 0.5=
<b>8. Payment of Accounts</b>								x 0.5=
<b>(use back for additional comments)</b>							<b>Overall Rating:</b>	

*(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: \_\_\_\_\_

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WORK NOT COMPLETED WITHIN SPECIFIED TIME: \_\_\_\_\_

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DOCUMENT 00710  
GENERAL CONTRACT PROVISIONS  
Revised: 02/14/24

NOTICE OF AVAILABILITY

The STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES dated 2024, the 1996 METRIC CONSTRUCTION AND TRAFFIC STANDARD DETAILS, the 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; the 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING and the 2017 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 \*\*\*

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DOCUMENT 00719

*(Revised September 14, 2023 – for all Federally Aided Projects)*

**SPECIAL PROVISIONS FOR PARTICIPATION BY  
DISADVANTAGED BUSINESS ENTERPRISES  
(IMPLEMENTING TITLE 49 OF THE CODE OF FEDERAL REGULATIONS, PART 26)**

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## POLICY

The Massachusetts Department of Transportation (MassDOT) receives Federal financial assistance from the Federal Highway Administration (FHWA), United States Department of Transportation (U.S. DOT), and as a condition of receiving this assistance, has signed an assurance that it will comply with 49 CFR Part 26 (Participation By Disadvantaged Business Enterprises In Department Of Transportation Financial Assistance Programs). The U.S. DOT Disadvantaged Business Enterprise Program is authorized by the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (“SAFETEA-LU”), as amended, at Title 23, United States Code, § 1101.

Accordingly, MassDOT has established a Disadvantaged Business Enterprise (DBE) Program in accordance with 49 CFR Part 26. It is the policy of MassDOT to ensure that DBEs have an equal opportunity to receive and participate in U.S. DOT assisted Contracts, without regard to race, color, national origin, or sex. To this end, MassDOT shall not directly, or through contractual or other arrangements, use criteria or methods of administration that have the effect of defeating or substantially impairing accomplishment of the program objectives stated below:

- ◆ To ensure nondiscrimination in the award and administration of U.S. DOT assisted Contracts;
- ◆ To create a level playing field on which DBEs can compete fairly for U.S. DOT assisted Contracts;
- ◆ To ensure that the DBE Program is narrowly tailored in accordance with applicable law;
- ◆ To ensure that only firms that fully meet 49 CFR Part 26 eligibility standards are permitted to participate as DBEs;
- ◆ To help remove barriers to the participation of DBEs in U.S. DOT assisted Contracts; and
- ◆ To assist the development of firms that can compete successfully in the market place outside the DBE Program.

The Director of Civil Rights of MassDOT has been designated as the DBE Liaison Officer. The DBE Liaison Officer is responsible for implementing all aspects of the DBE Program. Other MassDOT employees are responsible for assisting the Office of Civil Rights in carrying out this obligation. Implementation of the DBE Program is accorded the same priority as compliance with all other legal obligations incurred by MassDOT in its financial assistance agreements with each operating administration of the U.S. DOT. Information on the Federal requirements and MassDOT’s policies and information can be found at:

<i>Type of Info</i>	<i>Website</i>	<i>Description</i>
MassDOT Highway Division Policies and Info	<a href="https://www.mass.gov/disadvantaged-business-enterprise-goals-2019-2022">https://www.mass.gov/disadvantaged-business-enterprise-goals-2019-2022</a>	MassDOT– Highway Div’n Page
For copies of the Code of Federal Regulations	<a href="http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR">http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR</a>	FDsys – US Gov’t Printing Office
For information about the U.S.DOT DBE Program	<a href="https://www.transportation.gov/civil-rights/disadvantaged-business-enterprise">https://www.transportation.gov/civil-rights/disadvantaged-business-enterprise</a>	U.S. DOT/ FHWA page



## 1. DEFINITIONS

As used in these provisions, the terms set out below are defined as follows:

“Broker”, for purposes of these provisions, shall mean a DBE Entity that has entered into a legally binding relationship to provide goods or services delivered or performed by a third party. A broker may be a DBE Entity that arranges or expedites transactions but performs no work or installation services.

“Contractor”, “General” or “Prime” Contractor, “Bidder,” and “DB Entity” shall mean a person, firm, or other entity that has contracted directly with MassDOT to provide contracted work or services.

“Contract” shall mean the Contract for work between the Contractor and MassDOT.

“DBB” or “Design-Bid-Build” shall mean the traditional design, bid and project delivery method consisting of separate contracts between awarding authority and a designer resulting in a fully designed project; and a separate bidding process and Contract with a construction Contractor or Bidder.

“DB” or “Design-Build” shall mean an accelerated design, bid and project delivery method consisting of a single contract between the awarding authority and a DB Entity, consisting of design and construction companies that will bring a project to full design and construction.

“Disadvantaged Business Enterprise” or “DBE” shall mean a for-profit, small business concern:

- (a) that is at least fifty-one (51%) percent owned by one or more individuals who are both socially and economically disadvantaged, or, in the case of any corporation, in which at least fifty-one (51%) percent of the stock is owned by one or more such individuals; and
- (b) where the management and daily business operations are controlled by one or more of the socially and economically disadvantaged individuals who own it.

“FHWA” shall mean the Federal Highway Administration,” an agency within U.S. DOT that supports State and local governments in the design, and maintenance of the Nation’s highway system (Federal Aid Highway Program).

“Good faith efforts” shall mean efforts to achieve a DBE participation goal or other requirement of these Special Provisions that, by their scope, intensity, and appropriateness to the objective, can reasonably be expected to fulfill the program requirement. Such efforts must be deemed acceptable by MassDOT.

“Joint Venture” shall mean an association of a DBE firm and one or more other firms to carry out a single, for-profit business enterprise, for which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the Contract and whose share in the capital contribution, control, management, risks, and profits of the joint venture are commensurate with its ownership interest.

“Approved Joint Venture” shall mean a joint venture, as defined above, which has been approved by MassDOT’s Prequalification Office and Office of Civil Rights for DBE participation on a particular Contract.

"Manufacturer" shall mean a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles or equipment required under the contract and of the general character described by the specifications.

"Regular Dealer" shall mean a DBE firm that owns, operates, or maintains a store, warehouse, or other establishment in which materials, supplies, articles or equipment of the general character described by the specifications and required under the Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

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

"Responsive" and "Responsible" refers to the bidder's submittal meeting all of the requirements of the advertised request for proposal. The term responsible refers to the ability of the Contractor to perform the work. This ability can be determined prior to bid invitations.

"Small Business or Small Business Concern" shall mean a small business concern or company as defined in Section 3 of the Small Business Act and SBA regulations implementing it (13 CFR Part 121); and is a business that does not exceed the cap on annual average gross receipts established by the U.S. Secretary of Transportation pursuant to 49 CFR Part 26.65; see also 49 CFR Part 26.39.

"SDO" shall mean the Massachusetts Supplier Diversity Office, formerly known as the State Office of Minority and Women Business Assistance (SOMWBA). In 2010, SOMWBA was abolished and the SDO was established. *See* St. 2010, c. 56. The SDO has assumed all the functions of SOWMBA. SDO is an agency within the Commonwealth of Massachusetts Executive office of Administration and Finance (ANF) Operational Services Division (OSD). The SDO mandate is to help promote the development of business enterprises and non-profit organizations owned and operated by minorities and women.

"Socially and economically disadvantaged individuals" shall mean individuals who are citizens of the United States (or lawfully admitted permanent residents) and who are:

- (a) Individuals found by SDO to be socially and economically disadvantaged individuals on a case by case basis.
- (b) Individuals in the following groups, members of which are rebuttably presumed to be socially and economically disadvantaged:

- (1) "Black Americans" which includes persons having origin in any of the Black racial groups of Africa;
- (2) "Hispanic Americans" which include persons of Mexican, Puerto Rican, Cuban, Dominican, Central or South American, or other Spanish or Portuguese culture or origin, regardless of race;
- (3) "Native Americans" which include persons who are American Indians, Eskimos, Aleuts, or Native Hawaiians;
- (4) "Asian Pacific Americans" which includes persons whose origins are from Japan, China, Taiwan, Korea, Burma (Myanmar), Vietnam, Laos, Cambodia (Kampuchea), Thailand, Malaysia, Indonesia, the Philippines, Brunei, Samoa, Guam, the U.S. Trust Territories of the Pacific Islands (Republic of Palau), the Commonwealth of the Northern Marianas Islands, Macao, Fiji, Tonga, Kiribati, Tuvalu, Nauru, Federated States of Micronesia, or Hong Kong;
- (5) "Subcontinent Asian Americans" which includes persons whose origins are from India, Pakistan, Bangladesh, Bhutan, the Maldives Islands, Nepal or Sri Lanka;
- (6) Women; or
- (7) Any additional groups whose members are designated as socially and economically disadvantaged by the Small Business Administration (SBA), at such time as the SBA designation becomes effective.

Other terms and definitions applicable to the U.S. DOT DBE Program may be found at 49 CFR Part 26 and related appendices and guidance pages.

## 2. DBE PARTICIPATION

### a. Goal

On this Contract, MassDOT has established the following goal(s) for participation by firms owned and controlled by socially and economically disadvantaged persons. At least half of the goal must be met in the form of DBE Subcontractor construction activity as opposed to material supplies or other services. The applicable goal remains in effect throughout the life of the contract regardless of whether pre-identified DBE Subcontractors remain on the Project or under Contract.

Design-Bid-Build Projects: DBE Participation Goal 16 %  
*(One half of this goal shall be met in the form of Subcontractor construction activity)*

Design-Build Projects: DBE Design Participation Goal \_\_\_\_% and DBE Construction Participation Goal \_\_\_\_%  
*(One half of the Construction Goal shall be met in the form of Subcontractor construction activity)*

### b. Bidders List

Pursuant to the provisions of 49 CFR Part 26.11(c), Recipients such as MassDOT, must collect from all Bidders who seek work on Federally assisted Contracts the firm full company name(s), addresses and telephone numbers of all firms that have submitted bids or quotes to the Bidders in connection with this Project. All bidders should refer to the Special Provision Document "A00801" of the Project proposal for this requirement.

In addition, MassDOT must provide to U.S. DOT, information concerning contractors firm status as a DBE or non-DBE, the age of the firm, and the annual gross receipts of the firm within a series of brackets (e.g., less than \$500,000; \$500,000–\$1 million; \$1–2 million; \$2–5 million, etc.). The status, firm age, and annual gross receipt information will be sought by MassDOT regularly prior to setting its DBE participation goal for submission to U.S. DOT. MassDOT will survey each individual firm for this information directly.

Failure to comply with a written request for this information within fifteen (15) business days may result in the suspension of bidding privileges or other such sanctions, as provided for in Section 9 of this provision, until the information is received.

### **3. CONTRACTOR ASSURANCES**

No Contractor or any Subcontractor shall discriminate on the basis of race color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in all respects and as applicable prior to, or subsequent to, award of U.S. DOT assisted Contracts. The Contractor agrees to affirmatively seek out and consider DBE firms as Contractors, Subcontractors, and/or suppliers of materials and services for this Contract. No Contract will be approved until MassDOT has reviewed Bidders'/Contractors' affirmative actions concerning DBEs. Failure to carry out these requirements is a material breach of this Contract which may result in the termination of the Contract or such other remedy as MassDOT or FHWA deem appropriate.

### **4. REQUIRED SUBCONTRACT PROVISIONS**

The Prime Contractor shall include the provisions of Section 3 above in every subcontract, making those provisions binding on each Subcontractor; in addition, the Prime Contractor shall include a copy of this Special Provision, in its entirety, in every subcontract with a DBE firm which is, or may be, submitted for credit toward the Contract participation goal.

### **5. ELIGIBILITY OF DBES**

Only firms that have been certified by SDO and confirmed by MassDOT as eligible in accordance with 49 CFR Part 26 to participate as DBEs on federally aided MassDOT Contracts may be used on this Contract for credit toward the DBE participation goal.

#### **a. Massachusetts DBE Directory**

MassDOT makes available to all bidders the most current Massachusetts Disadvantaged Business Enterprise Directory. This directory is made available for Contractors' convenience and is informational only. The Directory lists those firms that have been certified as eligible in accordance with the criteria of 49 CFR Part 26 to participate as DBEs on federally aided MassDOT contracts. The Directory also lists the kinds of work each firm is certified to perform but does not constitute an endorsement of the quality of performance of any business and does not represent MassDOT Subcontractor approval.

Contractors are encouraged to make use of the DBE Directory maintained by SDO on the Internet.

This listing is updated daily and may be accessed at the SDO's website at:

<https://www.diversitycertification.mass.gov/BusinessDirectory/BusinessDirectorySearch.aspx>

#### **b. DBE Certification**

A firm must apply to SDO, currently acting as certification agent for MassDOT, for DBE certification to participate on federally aided MassDOT Contracts. A DBE application may be made in conjunction with a firm's application to SDO for certification to participate in state-funded minority and women business enterprise programs or may be for DBE certification only. An applicant for DBE certification must identify the area(s) of work it seeks to perform on U.S. DOT funded projects.

### **c. Joint Venture Approval**

To obtain recognition as an approved DBE Joint Venture, the parties to the joint venture must provide to MassDOT's Office of Civil Rights and Prequalification Office, at least fourteen (14) business days before the bid opening date, an Affidavit of DBE/Non-DBE Joint Venture in the form attached hereto, and including, but not limited to the following:

1. a copy of the Joint Venture Agreement;
2. a description of the distinct, clearly defined portion of the contract work that the DBE will perform with its own forces; and,
3. all such additional information as may be requested by MassDOT for the purpose of determining whether the joint venture is eligible.

### **6. COUNTING DBE PARTICIPATION TOWARDS DBE PARTICIPATION GOALS**

In order for DBE participation to count toward the Contract participation goal, the DBE(s) must have served a commercially useful function in the performance of the Contract and must have been paid in full for acceptable performance.

#### **a. Commercially Useful Function**

- (1) In general, a DBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. With respect to materials and supplies used on the Contract, the DBE must be responsible for negotiating price, determining quality and quantity, ordering the material, installing (where applicable) and paying for the material itself.
- (2) To determine whether a DBE is performing a commercially useful function, MassDOT will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the Contract is commensurate with the work it is actually performing and the DBE credit claimed for its performance of the work, and other relevant factors.
- (3) A DBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction, contract, or project through which funds are passed in order to obtain the appearance of DBE participation. In determining whether a DBE is such an extra participant, MassDOT will examine similar transactions, particularly those in which DBEs do not participate.

#### **b. Counting Participation Toward The Contract Participation Goal**

DBE participation which serves a commercially useful function shall be counted toward the DBE participation goal in accordance with the Provisions of 49 CFR Part 26.55(a) to (h), as follows:

- (1) When a DBE participates in a construction Contract, MassDOT will count the value of the work performed by the DBE's own forces. MassDOT will count the cost of supplies and materials obtained by the DBE for the work of its contract, including supplies purchased or equipment leased by the DBE. Supplies, labor, or equipment the DBE Subcontractor uses, purchases, or leases from the Prime Contractor or any affiliate of the Prime Contractor will not be counted.

- (2) MassDOT will count the entire amount of fees or commissions charged by a DBE firm for providing bona fide services, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a U.S. DOT assisted Contract, toward DBE participation goals, provided it is determined that the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.
- (3) When a DBE performs as a participant in a joint venture, MassDOT will count toward DBE participation goals a portion of the total dollar value of the contract that is equal to the distinct, clearly defined portion of the work of the Contract that the DBE performs with its own forces.
- (4) MassDOT will use the following factors in determining whether a DBE trucking company is performing a commercially useful function:
  - (i) the DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract; there cannot be a contrived arrangement for the purpose of meeting DBE participation goals.
  - (ii) the DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the Contract.
  - (iii) the Contractor will receive DBE credit for the total value of the transportation services the DBE provides on the Contract using trucks owned, insured, and operated by the DBE itself and using drivers the DBE employs alone.
  - (iv) the DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The Contractor who has a contract with a DBE who leases trucks from another DBE will receive credit for the total value of the transportation services of the lease.
  - (v) the DBE may also lease trucks from a non-DBE firm, including an owner-operator. The Contractor who has a Contract with a DBE who leases trucks from a non-DBE is entitled to credit for the total value of the transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by DBE-owned trucks on the Contract. Additional participation by non-DBE lessees receives credit only for the fee or commission it receives as a result of the lease arrangement, fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE.
  - (vi) the lease must indicate that the DBE has exclusive use of, and control over, the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

- (5) MassDOT will count the Prime Contractor's expenditures with DBEs for materials or supplies toward DBE participation goals as follows:
- (i) if the materials or supplies are obtained from a DBE manufacturer, as defined in Section 1 above, MassDOT will count one hundred (100%) percent of the cost of the materials or supplies toward DBE participation goals, provided the DBE meets the other requirements of the regulations.
  - (ii) if the materials or supplies are purchased from a DBE regular dealer, as defined in Section 1 above, MassDOT will count sixty (60%) percent of the cost of the materials or supplies toward the Contract participation goal, provided the DBE meets the other requirements of the regulations.
  - (iii) for materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, MassDOT will count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site toward the Contract participation goal, provided that MassDOT determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services; the cost of the materials and supplies themselves will not be counted; and provided the DBE meets the other requirements of the regulations.

#### **c. Joint Check Policy**

MassDOT recognizes that the use of joint checks may be a business practice required by material suppliers and vendors in the construction industry. A joint check is a two-party check issued by a/the Prime Contractor to a DBE third party such as a regular dealer of material or supplies. The Prime Contractor issues the check as payor to the DBE and the third party jointly as payees to guarantee payment to the third party for materials or supplies obtained or to be used by the DBE. FHWA has established criteria to ensure that DBEs are in fact performing a commercially useful function ("CUF") while using a joint check arrangement. Contractors and DBEs must meet and conform to these conditions and criteria governing the use of joint checks.

In the event that a Contractor or DBE Subcontractor desires to use a joint check, MassDOT will require prior notice and will closely monitor the arrangement for compliance with FHWA regulations and guidance. MassDOT may allow a joint check arrangement and give credit to a Contractor for use of the DBE where one or more of the following conditions exist:

- The use of a joint check is in fact required by this type of vendor or supplier as a standard industry practice that applies to all Contractors (DBEs and non-DBEs); or is required by a specific vendor or supplier;
- Payment for supplies or materials would be delayed for an unreasonably extended period without the joint check arrangement;
- The DBE (or any of its Subcontractors) has a pattern or history of not paying a vendor or supplier within a reasonable time or has not established enough of a credit history with the supplier or vendor; and/or
- The presence of severe adverse economic conditions, where credit resources may be limited and such practices may be necessary or required to effect timely payments.

Other factors MassDOT may consider:

- Whether there is a requirement by the Prime Contractor that a DBE should use a specific vendor or supplier to meet their Subcontractor specifications;
- Whether there is a requirement that a DBE use the Prime Contractor's negotiated price;
- The independence of the DBE;
- Whether approval has been sought prior to use of a joint check arrangement; and
- Whether any approved joint check arrangement has exceeded a reasonable period of use;
- The operation of the joint check arrangement; and
- Whether the DBE has made an effort to establish alternate arrangements for following periods ( i.e., the DBE must show it can, or has, or why it has not, established or increased a credit line with the vendor or supplier).

Even with the use of a Joint Check, both the Contractor and DBE remain responsible for compliance with all other elements under 49 CFR § 26.55 (c) (1), and must still be able to prove that a commercially useful function is being performed for the Contractor.

#### **d. Joint Check Procedure(s)**

- The DBE advises its General or Prime Contractor that it will have to use a Joint Check and provide proof of such requirement.
- The General or the Prime Contractor submits a request for approval to MassDOT, using MassDOT's approved Joint Check Request form (Document B00855) and by notification on the DBE Letter of Intent (Document B00854), and any other relevant documents. Requests that are not initiated during the bid process should be made in writing and comply with the procedure.
- The MassDOT Office of Civil Rights will review the request and render a decision as part of the approval process for DBE Schedules and Letters of Intent.
- Review and Approval will be project specific and relevant documents will be made part of the project Contract file.
- Payments should be made in the name of both the DBE and vendor or supplier. Payments should be issued and signed by the Contractor as only the guarantor for prompt payment of purchases to the vendor or supplier. The payment to the vendor or supplier should be handled by the DBE (i.e. if possible, funds or the joint check should be processed by the DBE and sent by the DBE to the vendor or supplier).
- MassDOT may request copies of cancelled checks (front and back) and transmittal information to verify any payments made to the DBE and vendor or supplier.
- MassDOT may request other information and documents, and may ask questions of the Contractor, Subcontractor and vendor or supplier prior to, during, and after the project performance to ascertain whether the Subcontractor is performing a commercially useful function and all parties are complying with DBE Program policies and procedures as part of the Subcontractor approval process.



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## 7. AWARD DOCUMENTATION AND PROCEDURES

- a. The two lowest bidders/the two bidders with the lowest price per quality score point, shall submit, by the close of business on the third (3<sup>rd</sup>) business day after the bid opening, a completed Schedule of Participation by DBEs (Document B00853) which shall list:
- (1) The full company name, address and telephone number of each DBE with whom the bidder intends to make a commitment.
  - (2) The contract item(s), by number(s) and quantity(ies), if applicable, or specific description of other business activity to be performed by each DBE as set forth in the Letters of Intent. The Bidder shall list only firms which have the capacity to perform, manage and supervise the work proposed in accordance with the requirements of 49 CFR Part 26 and Section **6.b** of these Special Provisions.
  - (3) The total dollar amount to be paid to each DBE. (Bidders are cautioned that at least one half of the participation goal must be met with construction activity work.)
  - (4) The total dollar amount to be paid to each DBE that is eligible for credit toward the DBE participation goal under the counting rules set out in Section **6.b**.
  - (5) The total creditable DBE participation as a percentage of the total bid price.
- b. All firms listed on the Schedule must be currently certified.
- c. The two lowest bidders/the two bidders with the lowest price per quality score point, shall each submit, with their Schedules of Participation, fully completed, signed Letters of Intent (Document B00854) from each of the DBEs listed on the Schedule. The Letters of Intent shall be in the form attached and shall identify specifically the contract activity the DBE proposes to perform, expressed as contract item number, if applicable, description of the activity, NAICS code, quantity, unit price and total price. In the event of discrepancy between the Schedule and the Letter of Intent, the Letter of Intent shall govern.
- d. Evidence of good faith efforts will be evaluated by MassDOT in the selection of the lowest responsible bidder.

All information requested by MassDOT for the purpose of evaluating the Contractor's efforts to achieve the participation goal must be provided within three (3) calendar days and must be accurate and complete in every detail. The apparent low bidder's attainment of the DBE participation goal or a satisfactory demonstration of good faith efforts is a prerequisite for award of the Contract.

- e. Failure to meet, or to demonstrate good faith efforts to meet, the requirements of these Special Provisions shall render a bid non-responsive. Therefore, in order to be eligible for award, the bidder (1) must list all DBE's it plans to employ on the Schedule of Participation; and provide the required Letters of Intent for, DBE participation which meets or exceeds the Contract goal in accordance with the terms of these Special Provisions or (2) must demonstrate, to the satisfaction of MassDOT, that good faith efforts were made to achieve the participation goal. MassDOT will adhere to the guidance provided in Appendix A to 49 CFR Part 26 on the determination of a Contractor's good faith efforts to meet the DBE participation goal(s) set forth in Section 2 herein.

- f. If MassDOT finds that the percentage of DBE participation submitted by the bidder on its Schedule does not meet the Contract participation goal, or that Schedule and Letters of Intent were not timely filed, and that the bidder has not demonstrated good faith efforts to comply with these requirements, it shall propose that the bidder be declared ineligible for award. In that case, the bidder may request administrative reconsideration. Such requests must be sent in writing within three (3) calendar days of receiving notice of proposed ineligibility to: The Office of the General Counsel, Massachusetts Department of Transportation, 10 Park Plaza, Boston, MA, 02116.
- g. If, after administrative reconsideration, MassDOT finds that the bidder has not shown that sufficient good faith efforts were made to comply with the requirements of these Special Provisions, it shall reject the bidder's proposal and may retain the proposal guaranty.
- h. Actions which constitute evidence of good faith efforts to meet a DBE participation goal include, but are not limited to, the following examples, which are set forth in 49 CFR Part 26, Appendix A:
- (1) Soliciting through all reasonable and available means (e.g., attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform the work of the Contract. The bidder must solicit this interest within sufficient time to allow the DBEs to respond to the solicitation. The bidder must determine with certainty if the DBEs are interested by taking appropriate steps to follow up initial solicitations.
  - (2) Selecting portions of the work to be performed by DBEs in order to increase the likelihood that the DBE participation goal will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the Prime Contractor might otherwise prefer to perform these work items with its own forces.
  - (3) Providing interested DBEs with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.
  - (4) Negotiating in good faith with interested DBEs. It is the bidder's responsibility to make a portion of the work available to DBE Subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE Subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone number of DBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBEs to perform the work.

A bidder using good business judgment would consider a number of factors in negotiating with Subcontractors, including DBE Subcontractors, and would take a firm's price and capabilities as well as Contract participation goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBEs is not in itself sufficient reason for a bidder's failure to meet the Contract DBE participation goal, as long as such costs are reasonable. Also, the ability or desire of a Prime Contractor to perform the work of a Contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime Contractors are not, however, required to accept higher quotes from DBEs if the price difference is excessive or unreasonable.

- (5) Not rejecting DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. Contractors should be careful of adding additional requirements of performance that would in effect limit participation by DBEs or any small business. The Contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. nonunion employee status) are not legitimate causes for the rejection or non-solicitation of bids in the Contractor's efforts to meet the Contract participation goal.
- (6) Making efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.
- (7) Making efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.
- (8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and federal minority/women business assistance offices; and other organizations as allowed on a case by case basis to provide assistance in the recruitment and placement of DBEs.

## 8. COMPLIANCE

- a. All activity performed by a DBE for credit toward the Contract participation goal must be performed, managed and supervised by the DBE in accordance with all commercially useful function requirements of 49 CFR Part 26. The Prime Contractor shall not enter into, or condone, any other arrangement.
- b. The Prime Contractor shall not perform with its own organization, or assign to any other business, an activity designated for the DBE(s) named on the Schedule(s) submitted by the Prime Contractor under Section 7 or under paragraph 8.f of this section, without the approval of MassDOT in accordance with the requirements of paragraphs 8.f and 8.j of this section.
- c. MassDOT may suspend payment for any activity that was not performed by the DBE to whom the activity was committed on the approved Schedule of Participation, or that was not performed in accordance with the requirements of Section 6.
- d. MassDOT retains the right to approve or disapprove of any or all Subcontractors. Requests by the Prime Contractor for approval of participation by a DBE Subcontractor for credit toward the Contract participation goal must include, in addition to any other requirements for Subcontractor approval, the following:
  - (1) A copy of the proposed subcontract. The subcontract must be for at least the dollar amount, and for the work described, in the Bidder's Schedule of Participation.
  - (2) A resume stating the qualifications and experience of the DBE Superintendent and/or foreperson who will supervise the on-site work. A new resume will be required for any change in supervisory personnel during the progress of the work.
  - (3) A Schedule of Operations indicating when the DBE is expected to perform the work.
  - (4) A list of (1) equipment owned by the DBE to be used on the Project, and (2) equipment to be leased by the DBE for use on the Project.

- (5) A list of: (1) all projects (public and private) which the DBE is currently performing; (2) all projects (public and private) to which the DBE is committed; and (3) all projects (public and private) to which the DBE intends to make a commitment. For each Contract, list the contracting organization, the name and telephone number of a contact person for the contracting organization, the dollar value of the work, a description of the work, and the DBE's work schedule for each project.
- e. If, pursuant to the Subcontractor approval process, MassDOT finds that a DBE Subcontractor does not have sufficient experience or resources to perform, manage and supervise work of the kind proposed in accordance with the requirements of 49 CFR Part 26, approval of the DBE Subcontractor may be denied. In the event of such denial, the Prime Contractor shall proceed in accordance with the requirements paragraphs **8.f** and **8.j** of this section.
- f. If, for reasons beyond its control, the Prime Contractor cannot comply with its DBE participation commitment in accordance with the Schedule of Participation submitted under Section 7, the Prime Contractor shall submit to MassDOT the reasons for its inability to comply with its obligations and shall submit, and request approval for, a revised Schedule of Participation. If approved by MassDOT, the revised Schedule shall govern the Prime Contractor's performance in meeting its obligations under these Special Provisions.
- g. A Prime Contractor's compliance with the participation goal in Section 2 shall be determined by reference to the established percentage of the total contract price, provided, however, that no decrease in the dollar amount of a bidder's commitment to any DBE shall be allowed without the approval of MassDOT.
- h. If the contract amount is increased, the Prime Contractor may be required to submit a revised Schedule of Participation in accordance with paragraphs **8.f** and **8.j** of this section.
- i. In the event of the decertification of a DBE scheduled to participate on the Contract for credit toward the participation goal, but not under subcontract, the Contractor shall proceed in accordance with paragraphs **8.f** and **8.j** of this section.
- j. The Prime Contractor shall notify MassDOT immediately of any facts that come to its attention indicating that it may or will be unable to comply with any aspect of its DBE obligation under this Contract.
- k. Any notice required by these Special Provisions shall be given in writing to: (1) the Resident Engineer; (2) the District designated Compliance Officer; and (3) the DBE Liaison Officer, MassDOT Office of Civil Rights, 10 Park Plaza, – 3rd Floor - West, Boston, MA, 02116 and cc'd to the Deputy Chief of External Programs.
- l. The Prime Contractor and its Subcontractors shall comply with MassDOT's Electronic Reporting System Requirements (MassDOT Document 00821) and submit all information required by MassDOT related to the DBE Special Provisions through the Equitable Business Opportunity Solution ("EBO"). MassDOT reserves the right to request reports in the format it deems necessary anytime during the performance of the Contract.
- m. Termination of DBE by Prime Contractor
- (1) A Prime Contractor shall not terminate a DBE Subcontractor or an approved substitute DBE firm without the prior written consent of MassDOT. This includes, but is not limited to, instances in which a Prime Contractor seeks to perform work originally designated for a DBE Subcontractor with its own forces or those of an affiliate, a non-DBE firm, or with another DBE firm.

- (2) MassDOT may provide such written consent only if MassDOT agrees, for reasons stated in its concurrence document, that the Prime Contractor has good cause to terminate the DBE firm.
- (3) For purposes of this paragraph, good cause includes the following circumstances:
  - (i) The DBE Subcontractor fails or refuses to execute a written contract;
  - (ii) The DBE Subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards. Good cause, however, does not exist if the failure or refusal of the DBE Subcontractor to perform its work on the subcontract results from the bad faith or discriminatory action of the Prime Contractor;
  - (iii) The DBE Subcontractor fails or refuses to meet the Prime Contractor's reasonable, nondiscriminatory bond requirements.
  - (iv) The DBE Subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
  - (v) The DBE Subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant 2 CFR Parts 180, 215 and 1,200 or applicable State law;
  - (vi) (vii) MassDOT has determined that the listed DBE Subcontractor is not a responsible contractor;
  - (vii) The listed DBE Subcontractor voluntarily withdraws from the Project and provides written notice of its withdrawal;
  - (viii) The listed DBE is ineligible to receive DBE credit for the type of work required;
  - (ix) A DBE owner dies or becomes disabled with the result that the listed DBE Contractor is unable to complete its work on the Contract;
  - (x) Other documented good cause that MassDOT determines compels the termination of the DBE Subcontractor. Good cause, however, does not exist if the Prime Contractor seeks to terminate a DBE it relied upon to obtain the Contract so that the Prime Contractor can self-perform the DBE work or substitute another DBE or non-DBE Contractor after Contract Award.
- (4) Before transmitting to MassDOT a request to terminate and/or substitute a DBE Subcontractor, the Prime Contractor must give notice in writing to the DBE Subcontractor, with a copy to MassDOT, of its intent to request to terminate and/or substitute, and the reason for the request.
- (5) The Prime Contractor must give the DBE five (5) business days to respond to the Prime Contractor's notice. The DBE must advise MassDOT and the Contractor of the reasons, if any, why it objects to the proposed termination of its subcontract and why MassDOT should not approve the Prime Contractor's action. If required in a particular case as a matter of public necessity (e.g., safety), MassDOT may provide a response period shorter than five (5) business days.
- (6) In addition to post-award terminations, the provisions of this section apply to pre-award deletions of or substitutions for DBE firms.

**n. Prompt Payment.**

Contractors are required to promptly pay Subcontractors under this Prime Contract within ten (10) business days from the receipt of each payment the Prime Contractor receives from MassDOT. Failure to comply with this requirement may result in the withholding of payment to the Prime Contractor until such time as all payments due under this provision have been received by the Subcontractor(s) and/or referral to the Prequalification Committee for action which may affect the Contractor's prequalification status.

**9. SANCTIONS**

If the Prime Contractor does not comply with the terms of these Special Provisions and cannot demonstrate to the satisfaction of MassDOT that good faith efforts were made to achieve such compliance, MassDOT may, in addition to any other remedy provided for in the Contract, and notwithstanding any other provision in the Contract:

- a. Retain, in connection with final acceptance and final payment processing, an amount determined by multiplying the total contract amount by the percentage in Section 2, less the amount paid to approved DBE(s) for work performed under the Contract in accordance with the provisions of Section 8.
- b. Suspend, terminate or cancel this Contract, in whole or in part, and call upon the Prime Contractor's surety to perform all terms and conditions in the Contract.
- c. In accordance with 720 CMR 5.05(1)(f), modify or revoke the Prime Contractor's Prequalification status or recommend that the Prime Contractor not receive award of a pending Contract. The Prime Contractor may appeal the determination of the Prequalification Committee in accordance with the provisions of 720 CMR 5.06.
- d. Initiate debarment proceedings pursuant to M.G.L. c. 29 §29F and, as applicable, 2 CFR Parts 180, 215 and 1,200.
- e. Refer the matter to the Massachusetts Attorney General for review and prosecution, if appropriate, of any false claim or pursuant to M.G.L. c. 12, §§ 5A to 5O (the Massachusetts False Claim Act).
- f. Refer the matter to the U.S. DOT's Office of the Inspector General or other agencies for prosecution under Title 18, U.S.C. § 1001, 49 CFR Parts 29 and 31, and other applicable laws and regulations.

**10. FURTHER INFORMATION; ENFORCEMENT, COOPERATION AND CONFIDENTIALITY.**

- a. Any proposed DBE, bidder, or Contractor shall provide such information as is necessary in the judgment of MassDOT to ascertain its compliance with the terms of this Special Provision. Further, pursuant to 49 CFR, Part 26.107:

- (1) If you are a firm that does not meet the eligibility criteria of 49 CFR, Parts 26.61 to 26.73 (“subpart D”), that attempts to participate in a DOT- assisted program as a DBE on the basis of false, fraudulent, or deceitful statements or representations or under circumstances indicating a serious lack of business integrity or honesty, MassDOT or FHWA may initiate suspension or debarment proceedings against you under 49 CFR Part 29.
  - (2) If you are a firm that, in order to meet DBE Contract participation goals or other DBE Program requirements, uses or attempts to use, on the basis of false, fraudulent or deceitful statements or representations or under circumstances indicating a serious lack of business integrity or honesty, another firm that does not meet the eligibility criteria of subpart D, FHWA may initiate suspension or debarment proceedings against you under 49 CFR Part 29.
  - (3) In a suspension or debarment proceeding brought either under subparagraph a.(1) or b.(2) of this section, the concerned operating administration may consider the fact that a purported DBE has been certified by a recipient. Such certification does not preclude FHWA from determining that the purported DBE, or another firm that has used or attempted to use it to meet DBE participation goals, should be suspended or debarred.
  - (4) FHWA may take enforcement action under 49 CFR Part 31, Program Fraud and Civil Remedies, against any participant in the DBE Program whose conduct is subject to such action under 49 CFR Part 31.
  - (5) FHWA may refer to the Department of Justice, for prosecution under 18 U.S.C. 1001 or other applicable provisions of law, any person who makes a false or fraudulent statement in connection with participation of a DBE in any DOT-assisted program or otherwise violates applicable Federal statutes.
- b. Pursuant to 49 CFR Part 26.109, the rules governing information, confidentiality, cooperation, and intimidation or retaliation are as follows:
- (1) Availability of records.

    - (i) In responding to requests for information concerning any aspect of the DBE Program, FHWA complies with provisions of the Federal Freedom of Information and Privacy Acts (5 U.S.C. 552 and 552a). FHWA may make available to the public any information concerning the DBE Program release of which is not prohibited by Federal law.
    - (ii) MassDOT shall safeguard from disclosure to unauthorized persons information that may reasonably be considered as confidential business information, consistent with Federal and Massachusetts General Law (M.G.L. c. 66, § 10, M.G.L. c. 4, §7 (26), 950 CMR 32.00).
  - (2) Confidentiality of information on complainants. Notwithstanding the provisions of subparagraph b.(1) of this section, the identity of complainants shall be kept confidential, at their election. If such confidentiality will hinder the investigation, proceeding or hearing, or result in a denial of appropriate administrative due process to other parties, the complainant must be advised for the purpose of waiving the privilege. Complainants are advised that, in some circumstances, failure to waive the privilege may result in the closure of the investigation or dismissal of the proceeding or hearing.

- (3) Cooperation. All participants in FHWA's DBE Program (including, but not limited to, recipients, DBE firms and applicants for DBE certification, complainants and appellants, and Contractors using DBE firms to meet Contract participation goals) are required to cooperate fully and promptly with U.S. DOT and recipient compliance reviews, certification reviews, investigations, and other requests for information. Failure to do so shall be a ground for appropriate action against the party involved (e.g., with respect to recipients, a finding of noncompliance; with respect to DBE firms, denial of certification or removal of eligibility and/or suspension and debarment; with respect to a complainant or appellant, dismissal of the complaint or appeal; with respect to a Contractor which uses DBE firms to meet participation goals, findings of non-responsibility for future Contracts and/or suspension and debarment).
- (4) Intimidation and retaliation. No recipient, Contractor, or any other participant in the program, may intimidate, threaten, coerce, or discriminate against any individual or firm for the purpose of interfering with any right or privilege secured by this part or because the individual or firm has made a complaint, testified, assisted, or participated in any manner in an investigation, proceeding, or hearing under this part. If any recipient or contractor violates this prohibition, that entity is in noncompliance with this 49 CFR Part 26.

## 11. LIST OF ADDITIONAL DOCUMENTS.

- a. The following documents shall be completed and signed by the bidder and designated DBEs in accordance with Section 7 - Award Documentation and Procedures. These documents must be returned by the bidder to MassDOT's Bid Document Distribution Center:
- Schedule of DBE Participation (Document B00853)
  - Letter of Intent (Document B00854)
  - DBE Joint Check Arrangement Approval Form (Document B00855), if Contractor and DBE plan, or if DBE is required to use a Joint Check
- b. The following document shall be signed and returned by Contractor and Subcontractors/DBEs to the MassDOT District Office overseeing the Project, as applicable:
- Contractor/Subcontractor Certification Form (Document No. 00859) (a checklist of other documents to be included with every subcontract (DBEs and non-DBEs alike)).
- c. The following document shall be provided to MassDOT's Office of Civil Rights and Prequalification Office at least fourteen (14) business days before the bid opening date, if applicable:
- Affidavit of DBE/Non-DBE Joint Venture (Document B00856)
- d. The following document shall be provided to MassDOT's District Office of Civil Rights within 30 calendar days after the work of the DBE is completed, or no later than 30 calendar days after the work of the DBE is on a completed and processed CQE. This document shall be completed and submitted by the Prime Contractor:
- Certificate of Completion by a Minority/Women or Disadvantaged Business Enterprise (M/W/DBE) (Form No. CSD-100)



**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

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

**ATTACHMENTS**

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

**I. GENERAL**

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

**II. NONDISCRIMINATION** (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

#### 6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

#### 10. Assurances Required:

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

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

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

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

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

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

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

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

#### 1. Minimum wages (29 CFR 5.5)

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

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

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

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

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

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

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

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

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

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

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

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to [DBAconformance@dol.gov](mailto: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](mailto:DBAconformance@dol.gov), refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

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

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

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

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

## 2. Withholding (29 CFR 5.5)

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

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

### 3. Records and certified payrolls (29 CFR 5.5)

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

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

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

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

b. *Certified payroll requirements (1) Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

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

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

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

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

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

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

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

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

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

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

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

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

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

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

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

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

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

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

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

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

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

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

**6. Subcontracts.** The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

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

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

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

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

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

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

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

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

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

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

## V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

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

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or



mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)\* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

\* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

### 3. Withholding for unpaid wages and liquidated damages

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

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

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

**4. Subcontracts.** The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

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

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

### VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

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

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

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;

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

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

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

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

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

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

#### VII. SAFETY: ACCIDENT PREVENTION

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

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

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and

health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

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

#### VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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

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

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

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

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

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

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

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

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

## X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

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

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

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

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

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

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

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

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

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

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

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

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

\* \* \* \* \*

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

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

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

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

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

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

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

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

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

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**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.

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**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.

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**XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

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

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

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

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or

cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

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

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

**XII. USE OF UNITED STATES-FLAG VESSELS:**

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

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

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

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

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

**ATTACHMENT A - EMPLOYMENT AND MATERIALS  
PREFERENCE FOR APPALACHIAN DEVELOPMENT  
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS  
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

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

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

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

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

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

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

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

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

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

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.

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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

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## DOCUMENT 00813

## SPECIAL PROVISIONS

## PRICE ADJUSTMENTS FOR STRUCTURAL STEEL AND REINFORCING STEEL

March 14, 2024

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	\$0.68
2	ASTM A27 (AASHTO M103) Steel Castings, H-Pile Points & Pipe Pile Shoes (See Note below.)	\$0.93
3	ASTM A668 / A668M (AASHTO M102) Steel Forgings	\$0.93
4	ASTM A108 (AASHTO M169) Steel Forgings for Shear Studs	\$0.97
5	ASTM A709/A709M Grade 36 / AASHTO M270M/M270 Grade 36 or 250 Structural Steel Plate	\$1.03
6	ASTM A709/A709M Grade 36 / AASHTO M270M/M270 Grade 36 or 250 Structural Steel Shapes	\$0.96
7	ASTM A709/A709M Grade 50 / AASHTO M270M/M270 Grade 50 or 345 Structural Steel Plate	\$1.03
8	ASTM A709/A709M Grade 50 / AASHTO M270M/M270 Grade 50 or 345 Structural Steel Shapes	\$0.96
9	ASTM A709/A709M Grade 50WT / AASHTO M270M/M270 Grade 50WT or 345WT Structural Steel Plate	\$1.07
10	ASTM A709/A709M Grade 50WT / AASHTO M270M/M270 Grade 50WT or 345WT Structural Steel Shapes	\$0.97
11	ASTM A709/A709M Grade 50W / AASHTO M270M/M270 Grade 50W 345W Structural Steel Plate	\$1.07
12	ASTM A709/A709M Grade 50W / AASHTO M270M/M270 Grade 50W or 345W Structural Steel Shapes	\$0.97
13	ASTM A709/A709M Grade HPS 50W / AASHTO M270M/M270 Grade HPS 50W or 345W Structural Steel Plate	\$1.12
14	ASTM A709/A709M Grade HPS 70W / AASHTO M270M/M270 Grade HPS 70W or 485W Structural Steel Plate	\$1.19
15	ASTM A514/A514M-05 Grade HPS 100W / AASHTO M270M/M270 Grade HPS 100W or 690W Structural Steel Plate	\$1.82
16	ASTM A992/A992M Grade 50S / AASHTO M270M/M270 Grade 50S or 345S Structural Steel Plate	\$1.07
17	ASTM A992/A992M Grade 50S / AASHTO M270M/M270 Grade 50S or 345S Structural Steel Shapes	\$0.97
18	ASTM A276 Type 316 Stainless Steel	\$5.43
19	ASTM A240 Type 316 Stainless Steel	\$5.43
20	ASTM A148 Grade 80/50 Steel Castings (See Note below.)	\$1.87
21	ASTM A53 Grade B Structural Steel Pipe	\$1.20
22	ASTM A500 Grades A, B, 36 & 50 Structural Steel Pipe	\$1.20
23	ASTM A252, Grades 240 (36 KSI) & 414 (60 KSI) Pipe Pile	\$0.95
24	ASTM 252, Grade 2 Permanent Steel Casing	\$0.95
25	ASTM A36 (AASHTO M183) for H-piles, steel supports and sign supports	\$1.02
26	ASTM A328 / A328M, Grade 50 (AASHTO M202) Steel Sheetpiling	\$1.79
27	ASTM A572 / A572M, Grade 50 Sheetpiling	\$1.79
28	ASTM A36/36M, Grade 50	\$1.03
29	ASTM A570, Grade 50	\$1.02
30	ASTM A572 (AASHTO M223), Grade 50 H-Piles	\$1.03
31	ASTM A1085 Grade A (50 KSI) Steel Hollow Structural Sections (HSS), heat-treated per ASTM A1085 Supplement S1	\$1.20
32	AREA 140 LB Rail and Track Accessories	\$0.61

**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.

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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.

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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 151 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 preceding paragraph by executing Document 00859 Contractor/Subcontractor Certification Form.

*Rev'd 03/07/14*

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## 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](http://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.

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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:** 125779      **Project No:** 609179      **Federal Aid No:** HIP(BR)-003S(723)X

**Location:** Spencer

**Project Description:** Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile 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. You may also find guidance at: <http://www.dol.gov/ofccp/TAGuides/consttag.pdf> or <http://www.wdol.gov/dba.aspx#0>.
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: \_\_\_\_\_

\_\_\_\_\_  
(Print Name and Title)

Telephone Number: \_\_\_\_\_

Federal I.D. Number: \_\_\_\_\_

\_\_\_\_\_  
(Authorized Signature)

Estimated Start Date: \_\_\_\_\_

Estimated Completion Date: \_\_\_\_\_

Estimated Dollar Amount: \_\_\_\_\_

\_\_\_\_\_  
(Date)

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.

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DOCUMENT 00861

# STATE PREVAILING WAGE RATES

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MAURA HEALEY  
Governor

KIM DRISCOLL  
Lt. Governor

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

**Prevailing Wage Rates**

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:** MassDOT Highway  
**Contract Number:** 125779 **City/Town:** SPENCER  
**Description of Work:** SPENCER – FAP No. HIP(BR)-003S(723)X Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River  
**Job Location:** North Spencer Rd over the Seven Mile River

**Information about Prevailing Wage Schedules for Awarding Authorities and Contractors**

- **The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor.** For multi-year CM AT RISK projects, the awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. The annual update requirement is not applicable to 27F “rental of equipment” contracts. **The updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.**
- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the “Wage Request Number” on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or a sub-contractor.
- Apprentices working on the project are required to be registered with the Massachusetts Division of Apprentice Standards (DAS). Apprentices must keep their apprentice identification card on their persons during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. **Any apprentice not registered with DAS regardless of whether they are registered with another federal, state, local, or private agency must be paid the journeyworker's rate.**
- Every contractor or subcontractor working on the construction project must submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee’s name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. For a sample payroll reporting form go to <http://www.mass.gov/dols/pw>.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Contractors must obtain the wage schedules from awarding authorities. Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and criminal penalties.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may file a complaint with the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

**Issue Date:** 04/12/2024

**Wage Request Number:** 20240412-002

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2024	\$38.95	\$15.07	\$18.67	\$0.00	\$72.69
	06/01/2024	\$39.95	\$15.07	\$18.67	\$0.00	\$73.69
	12/01/2024	\$39.95	\$15.07	\$20.17	\$0.00	\$75.19
	01/01/2025	\$39.95	\$15.57	\$20.17	\$0.00	\$75.69
	06/01/2025	\$40.95	\$15.57	\$20.17	\$0.00	\$76.69
	12/01/2025	\$40.95	\$15.57	\$21.78	\$0.00	\$78.30
	01/01/2026	\$40.95	\$16.17	\$21.78	\$0.00	\$78.90
	06/01/2026	\$41.95	\$16.17	\$21.78	\$0.00	\$79.90
	12/01/2026	\$41.95	\$16.17	\$23.52	\$0.00	\$81.64
	01/01/2027	\$41.95	\$16.77	\$23.52	\$0.00	\$82.24
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2024	\$39.02	\$15.07	\$18.67	\$0.00	\$72.76
	06/01/2024	\$40.02	\$15.07	\$18.67	\$0.00	\$73.76
	12/01/2024	\$40.02	\$15.07	\$20.17	\$0.00	\$75.26
	01/01/2025	\$40.02	\$15.57	\$20.17	\$0.00	\$75.76
	06/01/2025	\$41.02	\$15.57	\$20.17	\$0.00	\$76.76
	12/01/2025	\$41.02	\$15.57	\$21.78	\$0.00	\$78.37
	01/01/2026	\$41.02	\$16.17	\$21.78	\$0.00	\$78.97
	06/01/2026	\$42.02	\$16.17	\$21.78	\$0.00	\$79.97
	12/01/2026	\$42.02	\$16.17	\$23.52	\$0.00	\$81.71
	01/01/2027	\$42.02	\$16.77	\$23.52	\$0.00	\$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2024	\$39.14	\$15.07	\$18.67	\$0.00	\$72.88
	06/01/2024	\$40.14	\$15.07	\$18.67	\$0.00	\$73.88
	12/01/2024	\$40.14	\$15.07	\$20.17	\$0.00	\$75.38
	01/01/2025	\$40.14	\$15.57	\$20.17	\$0.00	\$75.88
	06/01/2025	\$41.14	\$15.57	\$20.17	\$0.00	\$76.88
	12/01/2025	\$41.14	\$15.57	\$21.78	\$0.00	\$78.49
	01/01/2026	\$41.14	\$16.17	\$21.78	\$0.00	\$79.09
	06/01/2026	\$42.14	\$16.17	\$21.78	\$0.00	\$80.09
	12/01/2026	\$42.14	\$16.17	\$23.52	\$0.00	\$81.83
	01/01/2027	\$42.14	\$16.77	\$23.52	\$0.00	\$82.43
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
	06/01/2024	\$39.94	\$9.65	\$17.14	\$0.00	\$66.73
	12/01/2024	\$41.27	\$9.65	\$17.14	\$0.00	\$68.06
	06/01/2025	\$42.66	\$9.65	\$17.14	\$0.00	\$69.45
	12/01/2025	\$44.04	\$9.65	\$17.14	\$0.00	\$70.83
	06/01/2026	\$45.48	\$9.65	\$17.14	\$0.00	\$72.27
	12/01/2026	\$46.92	\$9.65	\$17.14	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASBESTOS WORKER (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (WORCESTER)</i>	12/01/2023	\$40.80	\$14.50	\$11.05	\$0.00	\$66.35
	06/01/2024	\$41.80	\$14.50	\$11.05	\$0.00	\$67.35
	12/01/2024	\$42.80	\$14.50	\$11.05	\$0.00	\$68.35
	06/01/2025	\$43.80	\$14.50	\$11.05	\$0.00	\$69.35
	12/01/2025	\$44.80	\$14.50	\$11.05	\$0.00	\$70.35
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
	06/01/2024	\$39.94	\$9.65	\$17.14	\$0.00	\$66.73
	12/01/2024	\$41.27	\$9.65	\$17.14	\$0.00	\$68.06
	06/01/2025	\$42.66	\$9.65	\$17.14	\$0.00	\$69.45
	12/01/2025	\$44.04	\$9.65	\$17.14	\$0.00	\$70.83
	06/01/2026	\$45.48	\$9.65	\$17.14	\$0.00	\$72.27
	12/01/2026	\$46.92	\$9.65	\$17.14	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - BOILERMAKER - Local 29**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
2	65	\$31.28	\$7.07	\$13.22	\$0.00	\$51.57
3	70	\$33.68	\$7.07	\$14.23	\$0.00	\$54.98
4	75	\$36.09	\$7.07	\$15.24	\$0.00	\$58.40
5	80	\$38.50	\$7.07	\$16.25	\$0.00	\$61.82
6	85	\$40.90	\$7.07	\$17.28	\$0.00	\$65.25
7	90	\$43.31	\$7.07	\$18.28	\$0.00	\$68.66
8	95	\$45.71	\$7.07	\$19.32	\$0.00	\$72.10

**Notes:**

**Apprentice to Journeyworker Ratio:1:4**

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	02/01/2024	\$60.26	\$11.49	\$22.90	\$0.00	\$94.65
BRICKLAYERS LOCAL 3 (WORCESTER)	08/01/2024	\$62.36	\$11.49	\$22.90	\$0.00	\$96.75
	02/01/2025	\$63.66	\$11.49	\$22.90	\$0.00	\$98.05
	08/01/2025	\$65.81	\$11.49	\$22.90	\$0.00	\$100.20
	02/01/2026	\$67.16	\$11.49	\$22.90	\$0.00	\$101.55
	08/01/2026	\$69.36	\$11.49	\$22.90	\$0.00	\$103.75
	02/01/2027	\$70.76	\$11.49	\$22.90	\$0.00	\$105.15

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Worcester**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.13	\$11.49	\$22.90	\$0.00	\$64.52
2	60	\$36.16	\$11.49	\$22.90	\$0.00	\$70.55
3	70	\$42.18	\$11.49	\$22.90	\$0.00	\$76.57
4	80	\$48.21	\$11.49	\$22.90	\$0.00	\$82.60
5	90	\$54.23	\$11.49	\$22.90	\$0.00	\$88.62

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.18	\$11.49	\$22.90	\$0.00	\$65.57
2	60	\$37.42	\$11.49	\$22.90	\$0.00	\$71.81
3	70	\$43.65	\$11.49	\$22.90	\$0.00	\$78.04
4	80	\$49.89	\$11.49	\$22.90	\$0.00	\$84.28
5	90	\$56.12	\$11.49	\$22.90	\$0.00	\$90.51

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

<b>BULLDOZER/GRADER/SCRAPER</b> <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

<b>CAISSON &amp; UNDERPINNING BOTTOM MAN</b> <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$45.48	\$9.65	\$18.22	\$0.00	\$73.35
	06/01/2024	\$46.96	\$9.65	\$18.22	\$0.00	\$74.83
	12/01/2024	\$48.43	\$9.65	\$18.22	\$0.00	\$76.30
	06/01/2025	\$49.93	\$9.65	\$18.22	\$0.00	\$77.80
	12/01/2025	\$51.43	\$9.65	\$18.22	\$0.00	\$79.30
	06/01/2026	\$52.98	\$9.65	\$18.22	\$0.00	\$80.85
	12/01/2026	\$54.48	\$9.65	\$18.22	\$0.00	\$82.35

For apprentice rates see "Apprentice- LABORER"

<b>CAISSON &amp; UNDERPINNING LABORER</b> <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$44.33	\$9.65	\$18.22	\$0.00	\$72.20
	06/01/2024	\$45.81	\$9.65	\$18.22	\$0.00	\$73.68
	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
	06/01/2025	\$48.78	\$9.65	\$18.22	\$0.00	\$76.65
	12/01/2025	\$50.28	\$9.65	\$18.22	\$0.00	\$78.15
	06/01/2026	\$51.83	\$9.65	\$18.22	\$0.00	\$79.70
	12/01/2026	\$53.33	\$9.65	\$18.22	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CAISSON & UNDERPINNING TOP MAN <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$44.33	\$9.65	\$18.22	\$0.00	\$72.20
	06/01/2024	\$45.81	\$9.65	\$18.22	\$0.00	\$73.68
	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
	06/01/2025	\$48.78	\$9.65	\$18.22	\$0.00	\$76.65
	12/01/2025	\$50.28	\$9.65	\$18.22	\$0.00	\$78.15
	06/01/2026	\$51.83	\$9.65	\$18.22	\$0.00	\$79.70
	12/01/2026	\$53.33	\$9.65	\$18.22	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						
CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2024	\$47.12	\$9.83	\$19.97	\$0.00	\$76.92
	09/01/2024	\$48.37	\$9.83	\$19.97	\$0.00	\$78.17
	03/01/2025	\$49.62	\$9.83	\$19.97	\$0.00	\$79.42
	09/01/2025	\$50.87	\$9.83	\$19.97	\$0.00	\$80.67
	03/01/2026	\$52.12	\$9.83	\$19.97	\$0.00	\$81.92
	09/01/2026	\$53.37	\$9.83	\$19.97	\$0.00	\$83.17
	03/01/2027	\$54.62	\$9.83	\$19.97	\$0.00	\$84.42

**Apprentice - CARPENTER - Zone 2 Eastern MA**

**Effective Date - 03/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$21.20	\$9.83	\$1.73	\$0.00	\$32.76
2	45	\$21.20	\$9.83	\$1.73	\$0.00	\$32.76
3	55	\$25.92	\$9.83	\$3.40	\$0.00	\$39.15
4	55	\$25.92	\$9.83	\$3.40	\$0.00	\$39.15
5	70	\$32.98	\$9.83	\$16.51	\$0.00	\$59.32
6	70	\$32.98	\$9.83	\$16.51	\$0.00	\$59.32
7	80	\$37.70	\$9.83	\$18.24	\$0.00	\$65.77
8	80	\$37.70	\$9.83	\$18.24	\$0.00	\$65.77

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$21.77	\$9.83	\$1.73	\$0.00	\$33.33
2	45	\$21.77	\$9.83	\$1.73	\$0.00	\$33.33
3	55	\$26.60	\$9.83	\$3.40	\$0.00	\$39.83
4	55	\$26.60	\$9.83	\$3.40	\$0.00	\$39.83
5	70	\$33.86	\$9.83	\$16.51	\$0.00	\$60.20
6	70	\$33.86	\$9.83	\$16.51	\$0.00	\$60.20
7	80	\$38.70	\$9.83	\$18.24	\$0.00	\$66.77
8	80	\$38.70	\$9.83	\$18.24	\$0.00	\$66.77

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARPENTER WOOD FRAME	10/01/2023	\$25.55	\$7.02	\$4.80	\$0.00	\$37.37
<i>CARPENTERS-ZONE 3 (Wood Frame)</i>	10/01/2024	\$26.65	\$7.02	\$4.80	\$0.00	\$38.47
	10/01/2025	\$27.75	\$7.02	\$4.80	\$0.00	\$39.57
	10/01/2026	\$28.85	\$7.02	\$4.80	\$0.00	\$40.67

All Aspects of New Wood Frame Work

**Apprentice - CARPENTER (Wood Frame) - Zone 3**

**Effective Date - 10/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.33	\$7.02	\$0.00	\$0.00	\$22.35
2	60	\$15.33	\$7.02	\$0.00	\$0.00	\$22.35
3	65	\$16.61	\$7.02	\$1.00	\$0.00	\$24.63
4	70	\$17.89	\$7.02	\$1.00	\$0.00	\$25.91
5	75	\$19.16	\$7.02	\$4.80	\$0.00	\$30.98
6	80	\$20.44	\$7.02	\$4.80	\$0.00	\$32.26
7	85	\$21.72	\$7.02	\$4.80	\$0.00	\$33.54
8	90	\$23.00	\$7.02	\$4.80	\$0.00	\$34.82

**Effective Date - 10/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
2	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
3	65	\$17.32	\$7.02	\$1.00	\$0.00	\$25.34
4	70	\$18.66	\$7.02	\$1.00	\$0.00	\$26.68
5	75	\$19.99	\$7.02	\$4.80	\$0.00	\$31.81
6	80	\$21.32	\$7.02	\$4.80	\$0.00	\$33.14
7	85	\$22.65	\$7.02	\$4.80	\$0.00	\$34.47
8	90	\$23.99	\$7.02	\$4.80	\$0.00	\$35.81

**Notes:**

% Indentured After 10/1/17; 45/45/55/55/70/70/80/80  
 Step 1&2 \$18.52/ 3&4 \$21.07/ 5&6 \$28.70/ 7&8 \$31.26

**Apprentice to Journeyworker Ratio:1:5**

CEMENT MASONRY/PLASTERING	01/01/2024	\$49.33	\$13.00	\$23.57	\$1.30	\$87.20
<i>BRICKLAYERS LOCAL 3 (WORCESTER)</i>						

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
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**Apprentice - CEMENT MASONRY/PLASTERING - Worcester**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.67	\$13.00	\$15.93	\$0.00	\$53.60
2	60	\$29.60	\$13.00	\$18.57	\$1.30	\$62.47
3	65	\$32.06	\$13.00	\$19.57	\$1.30	\$65.93
4	70	\$34.53	\$13.00	\$20.57	\$1.30	\$69.40
5	75	\$37.00	\$13.00	\$21.57	\$1.30	\$72.87
6	80	\$39.46	\$13.00	\$22.57	\$1.30	\$76.33
7	90	\$44.40	\$13.00	\$23.57	\$1.30	\$82.27

**Notes:**

Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

**Apprentice to Journeyworker Ratio:1:3**

CHAIN SAW OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$56.13	\$15.00	\$16.40	\$0.00	\$87.53
	06/01/2024	\$57.45	\$15.00	\$16.40	\$0.00	\$88.85
	12/01/2024	\$58.93	\$15.00	\$16.40	\$0.00	\$90.33
	06/01/2025	\$60.26	\$15.00	\$16.40	\$0.00	\$91.66
	12/01/2025	\$61.73	\$15.00	\$16.40	\$0.00	\$93.13
	06/01/2026	\$63.06	\$15.00	\$16.40	\$0.00	\$94.46
	12/01/2026	\$64.54	\$15.00	\$16.40	\$0.00	\$95.94

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

COMPRESSOR OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$35.62	\$15.00	\$16.40	\$0.00	\$67.02
	06/01/2024	\$36.47	\$15.00	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.42	\$15.00	\$16.40	\$0.00	\$68.82
	06/01/2025	\$38.27	\$15.00	\$16.40	\$0.00	\$69.67
	12/01/2025	\$39.22	\$15.00	\$16.40	\$0.00	\$70.62
	06/01/2026	\$40.08	\$15.00	\$16.40	\$0.00	\$71.48
	12/01/2026	\$41.03	\$15.00	\$16.40	\$0.00	\$72.43

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2024	\$56.06	\$9.95	\$23.95	\$0.00	\$89.96
	07/01/2024	\$57.26	\$9.95	\$23.95	\$0.00	\$91.16
	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.03	\$9.95	\$0.00	\$0.00	\$37.98
2	55	\$30.83	\$9.95	\$6.66	\$0.00	\$47.44
3	60	\$33.64	\$9.95	\$7.26	\$0.00	\$50.85
4	65	\$36.44	\$9.95	\$7.87	\$0.00	\$54.26
5	70	\$39.24	\$9.95	\$20.32	\$0.00	\$69.51
6	75	\$42.05	\$9.95	\$20.93	\$0.00	\$72.93
7	80	\$44.85	\$9.95	\$21.53	\$0.00	\$76.33
8	90	\$50.45	\$9.95	\$22.74	\$0.00	\$83.14

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.63	\$9.95	\$0.00	\$0.00	\$38.58
2	55	\$31.49	\$9.95	\$6.66	\$0.00	\$48.10
3	60	\$34.36	\$9.95	\$7.26	\$0.00	\$51.57
4	65	\$37.22	\$9.95	\$7.87	\$0.00	\$55.04
5	70	\$40.08	\$9.95	\$20.32	\$0.00	\$70.35
6	75	\$42.95	\$9.95	\$20.93	\$0.00	\$73.83
7	80	\$45.81	\$9.95	\$21.53	\$0.00	\$77.29
8	90	\$51.53	\$9.95	\$22.74	\$0.00	\$84.22

**Notes:**  
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

DEMO: ADZEMAN LABORERS - ZONE 2	12/01/2023	\$44.48	\$9.65	\$18.07	\$0.00	\$72.20
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For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR LABORERS - ZONE 2	12/01/2023	\$45.48	\$9.65	\$18.07	\$0.00	\$73.20
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For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS LABORERS - ZONE 2	12/01/2023	\$45.23	\$9.65	\$18.07	\$0.00	\$72.95
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For apprentice rates see "Apprentice- LABORER"

DEMO: CONCRETE CUTTER/SAWYER LABORERS - ZONE 2	12/01/2023	\$45.48	\$9.65	\$18.07	\$0.00	\$73.20
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For apprentice rates see "Apprentice- LABORER"

DEMO: JACKHAMMER OPERATOR LABORERS - ZONE 2	12/01/2023	\$45.23	\$9.65	\$18.07	\$0.00	\$72.95
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For apprentice rates see "Apprentice- LABORER"

DEMO: WRECKING LABORER LABORERS - ZONE 2	12/01/2023	\$44.48	\$9.65	\$18.07	\$0.00	\$72.20
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For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$68.70	\$9.40	\$23.12	\$0.00	\$101.22
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$49.07	\$9.40	\$23.12	\$0.00	\$81.59
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$73.60	\$9.40	\$23.12	\$0.00	\$106.12
For apprentice rates see "Apprentice- PILE DRIVER"						
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$103.05	\$9.40	\$23.12	\$0.00	\$135.57
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34



**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - ELECTRICIAN - Local 96**

**Effective Date - 09/03/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.40	\$13.00	\$0.55	\$0.00	\$31.95
2	45	\$20.70	\$13.00	\$0.62	\$0.00	\$34.32
3	48	\$22.08	\$13.00	\$15.49	\$0.00	\$50.57
4	55	\$25.29	\$13.00	\$15.94	\$0.00	\$54.23
5	65	\$29.89	\$13.00	\$16.59	\$0.00	\$59.48
6	80	\$36.79	\$13.00	\$17.55	\$0.00	\$67.34

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$18.82	\$13.99	\$0.56	\$0.00	\$33.37
2	45	\$21.17	\$13.99	\$0.64	\$0.00	\$35.80
3	48	\$22.58	\$13.99	\$15.79	\$0.00	\$52.36
4	55	\$25.88	\$13.99	\$16.26	\$0.00	\$56.13
5	65	\$30.58	\$13.99	\$16.91	\$0.00	\$61.48
6	80	\$37.64	\$13.99	\$17.90	\$0.00	\$69.53

**Notes:**

Steps 1-2 are 1000 hrs; Steps 3-6 are 1500 hrs.

**Apprentice to Journeyworker Ratio:2:3\*\*\***

ELEVATOR CONSTRUCTOR	01/01/2024	\$61.98	\$16.18	\$20.96	\$0.00	\$99.12
ELEVATOR CONSTRUCTORS LOCAL 41	01/01/2025	\$62.83	\$16.28	\$21.36	\$0.00	\$100.47
	01/01/2026	\$63.68	\$16.38	\$21.76	\$0.00	\$101.82
	01/01/2027	\$64.53	\$16.48	\$22.16	\$0.00	\$103.17

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - ELEVATOR CONSTRUCTOR - Local 41**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.99	\$16.18	\$0.00	\$0.00	\$47.17
2	55	\$34.09	\$16.18	\$20.96	\$0.00	\$71.23
3	65	\$40.29	\$16.18	\$20.96	\$0.00	\$77.43
4	70	\$43.39	\$16.18	\$20.96	\$0.00	\$80.53
5	80	\$49.58	\$16.18	\$20.96	\$0.00	\$86.72

**Effective Date - 01/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.42	\$16.28	\$0.00	\$0.00	\$47.70
2	55	\$34.56	\$16.28	\$21.36	\$0.00	\$72.20
3	65	\$40.84	\$16.28	\$21.36	\$0.00	\$78.48
4	70	\$43.98	\$16.28	\$21.36	\$0.00	\$81.62
5	80	\$50.26	\$16.28	\$21.36	\$0.00	\$87.90

**Notes:**

Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

**Apprentice to Journeyworker Ratio:1:1**

ELEVATOR CONSTRUCTOR HELPER	01/01/2024	\$43.39	\$16.18	\$20.96	\$0.00	\$80.53
<i>ELEVATOR CONSTRUCTORS LOCAL 41</i>	01/01/2025	\$43.98	\$16.28	\$21.36	\$0.00	\$81.62
	01/01/2026	\$44.58	\$16.38	\$21.76	\$0.00	\$82.72
	01/01/2027	\$45.17	\$16.48	\$22.16	\$0.00	\$83.81

For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY)	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
<i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	11/01/2023	\$50.30	\$14.50	\$16.15	\$0.00	\$80.95
<i>OPERATING ENGINEERS LOCAL 4</i>	05/01/2024	\$51.54	\$14.50	\$16.15	\$0.00	\$82.19
	11/01/2024	\$52.83	\$14.50	\$16.15	\$0.00	\$83.48
	05/01/2025	\$54.27	\$14.50	\$16.15	\$0.00	\$84.92
	11/01/2025	\$55.56	\$14.50	\$16.15	\$0.00	\$86.21
	05/01/2026	\$57.00	\$14.50	\$16.15	\$0.00	\$87.65
	11/01/2026	\$58.29	\$14.50	\$16.15	\$0.00	\$88.94
	05/01/2027	\$59.72	\$14.50	\$16.15	\$0.00	\$90.37

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2023	\$51.87	\$14.50	\$16.15	\$0.00	\$82.52
	05/01/2024	\$53.12	\$14.50	\$16.15	\$0.00	\$83.77
	11/01/2024	\$54.42	\$14.50	\$16.15	\$0.00	\$85.07
	05/01/2025	\$55.87	\$14.50	\$16.15	\$0.00	\$86.52
	11/01/2025	\$57.17	\$14.50	\$16.15	\$0.00	\$87.82
	05/01/2026	\$58.62	\$14.50	\$16.15	\$0.00	\$89.27
	11/01/2026	\$59.92	\$14.50	\$16.15	\$0.00	\$90.57
	05/01/2027	\$61.37	\$14.50	\$16.15	\$0.00	\$92.02
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2023	\$24.93	\$14.50	\$16.15	\$0.00	\$55.58
	05/01/2024	\$25.66	\$14.50	\$16.15	\$0.00	\$56.31
	11/01/2024	\$26.42	\$14.50	\$16.15	\$0.00	\$57.07
	05/01/2025	\$27.27	\$14.50	\$16.15	\$0.00	\$57.92
	11/01/2025	\$28.03	\$14.50	\$16.15	\$0.00	\$58.68
	05/01/2026	\$28.88	\$14.50	\$16.15	\$0.00	\$59.53
	11/01/2026	\$29.64	\$14.50	\$16.15	\$0.00	\$60.29
	05/01/2027	\$30.49	\$14.50	\$16.15	\$0.00	\$61.14
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINT/COMMISSIONING <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$44.47	\$15.00	\$16.40	\$0.00	\$75.87
	06/01/2024	\$45.53	\$15.00	\$16.40	\$0.00	\$76.93
	12/01/2024	\$46.71	\$15.00	\$16.40	\$0.00	\$78.11
	06/01/2025	\$47.77	\$15.00	\$16.40	\$0.00	\$79.17
	12/01/2025	\$48.94	\$15.00	\$16.40	\$0.00	\$80.34
	06/01/2026	\$50.00	\$15.00	\$16.40	\$0.00	\$81.40
	12/01/2026	\$51.18	\$15.00	\$16.40	\$0.00	\$82.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$25.48	\$9.65	\$17.14	\$0.00	\$52.27
	06/01/2024	\$26.51	\$9.65	\$17.14	\$0.00	\$53.30
	12/01/2024	\$26.51	\$9.65	\$17.14	\$0.00	\$53.30
	06/01/2025	\$27.59	\$9.65	\$17.14	\$0.00	\$54.38
	12/01/2025	\$27.59	\$9.65	\$17.14	\$0.00	\$54.38
	06/01/2026	\$28.71	\$9.65	\$17.14	\$0.00	\$55.50
	12/01/2026	\$28.71	\$9.65	\$17.14	\$0.00	\$55.50
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	03/01/2024	\$49.47	\$8.83	\$20.27	\$0.00	\$78.57

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - FLOORCOVERER - Local 2168 Zone II</b>						
<b>Effective Date - 03/01/2024</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.74	\$8.83	\$1.76	\$0.00	\$35.33
2	55	\$27.21	\$8.83	\$1.76	\$0.00	\$37.80
3	60	\$29.68	\$8.83	\$3.52	\$0.00	\$42.03
4	65	\$32.16	\$8.83	\$3.52	\$0.00	\$44.51
5	70	\$34.63	\$8.83	\$16.75	\$0.00	\$60.21
6	75	\$37.10	\$8.83	\$16.75	\$0.00	\$62.68
7	80	\$39.58	\$8.83	\$18.51	\$0.00	\$66.92
8	85	\$42.05	\$8.83	\$18.51	\$0.00	\$69.39

Notes: Steps are 750 hrs.  
 % After 10/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)  
 Step 1&2 \$32.63/ 3&4 \$39.28/ 5&6 \$59.86/ 7&8 \$66.52

**Apprentice to Journeyworker Ratio:1:1**

FORK LIFT/CHERRY PICKER OPERATING ENGINEERS LOCAL 4	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GENERATOR/LIGHTING PLANT/HEATERS OPERATING ENGINEERS LOCAL 4	12/01/2023	\$35.62	\$15.00	\$16.40	\$0.00	\$67.02
	06/01/2024	\$36.47	\$15.00	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.42	\$15.00	\$16.40	\$0.00	\$68.82
	06/01/2025	\$38.27	\$15.00	\$16.40	\$0.00	\$69.67
	12/01/2025	\$39.22	\$15.00	\$16.40	\$0.00	\$70.62
	06/01/2026	\$40.08	\$15.00	\$16.40	\$0.00	\$71.48
	12/01/2026	\$41.03	\$15.00	\$16.40	\$0.00	\$72.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) GLAZIERS LOCAL 35 (ZONE 2)	01/01/2024	\$45.56	\$9.95	\$23.95	\$0.00	\$79.46
	07/01/2024	\$46.76	\$9.95	\$23.95	\$0.00	\$80.66
	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - GLAZIER - Local 35 Zone 2**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.78	\$9.95	\$0.00	\$0.00	\$32.73
2	55	\$25.06	\$9.95	\$6.66	\$0.00	\$41.67
3	60	\$27.34	\$9.95	\$7.26	\$0.00	\$44.55
4	65	\$29.61	\$9.95	\$7.87	\$0.00	\$47.43
5	70	\$31.89	\$9.95	\$20.32	\$0.00	\$62.16
6	75	\$34.17	\$9.95	\$20.93	\$0.00	\$65.05
7	80	\$36.45	\$9.95	\$21.53	\$0.00	\$67.93
8	90	\$41.00	\$9.95	\$22.74	\$0.00	\$73.69

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$9.95	\$0.00	\$0.00	\$33.33
2	55	\$25.72	\$9.95	\$6.66	\$0.00	\$42.33
3	60	\$28.06	\$9.95	\$7.26	\$0.00	\$45.27
4	65	\$30.39	\$9.95	\$7.87	\$0.00	\$48.21
5	70	\$32.73	\$9.95	\$20.32	\$0.00	\$63.00
6	75	\$35.07	\$9.95	\$20.93	\$0.00	\$65.95
7	80	\$37.41	\$9.95	\$21.53	\$0.00	\$68.89
8	90	\$42.08	\$9.95	\$22.74	\$0.00	\$74.77

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

HOISTING ENGINEER/CRANES/GRADALLS	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
OPERATING ENGINEERS LOCAL 4	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - OPERATING ENGINEERS - Local 4**

**Effective Date - 12/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$30.27	\$15.00	\$0.00	\$0.00	\$45.27
2	60	\$33.02	\$15.00	\$16.40	\$0.00	\$64.42
3	65	\$35.77	\$15.00	\$16.40	\$0.00	\$67.17
4	70	\$38.52	\$15.00	\$16.40	\$0.00	\$69.92
5	75	\$41.27	\$15.00	\$16.40	\$0.00	\$72.67
6	80	\$44.02	\$15.00	\$16.40	\$0.00	\$75.42
7	85	\$46.78	\$15.00	\$16.40	\$0.00	\$78.18
8	90	\$49.53	\$15.00	\$16.40	\$0.00	\$80.93

**Effective Date - 06/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$30.98	\$15.00	\$0.00	\$0.00	\$45.98
2	60	\$33.80	\$15.00	\$16.40	\$0.00	\$65.20
3	65	\$36.61	\$15.00	\$16.40	\$0.00	\$68.01
4	70	\$39.43	\$15.00	\$16.40	\$0.00	\$70.83
5	75	\$42.25	\$15.00	\$16.40	\$0.00	\$73.65
6	80	\$45.06	\$15.00	\$16.40	\$0.00	\$76.46
7	85	\$47.88	\$15.00	\$16.40	\$0.00	\$79.28
8	90	\$50.70	\$15.00	\$16.40	\$0.00	\$82.10

**Notes:**

**Apprentice to Journeyworker Ratio:1:6**

HVAC (DUCTWORK) SHEETMETAL WORKERS LOCAL 63	01/01/2024	\$40.22	\$11.96	\$18.74	\$2.13	\$73.05
	07/01/2024	\$41.47	\$11.96	\$18.74	\$2.13	\$74.30
	01/01/2025	\$42.72	\$11.96	\$18.74	\$2.13	\$75.55

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (ELECTRICAL CONTROLS) ELECTRICIANS LOCAL 96	09/03/2023	\$45.99	\$13.00	\$18.84	\$0.00	\$77.83
	09/01/2024	\$47.05	\$13.99	\$19.22	\$0.00	\$80.26
	09/07/2025	\$48.16	\$14.98	\$19.60	\$0.00	\$82.74
	09/06/2026	\$49.38	\$15.96	\$20.00	\$0.00	\$85.34

For apprentice rates see "Apprentice- ELECTRICIAN"

HVAC (TESTING AND BALANCING - AIR) SHEETMETAL WORKERS LOCAL 63	01/01/2024	\$40.22	\$11.96	\$18.74	\$2.13	\$73.05
	07/01/2024	\$41.47	\$11.96	\$18.74	\$2.13	\$74.30
	01/01/2025	\$42.72	\$11.96	\$18.74	\$2.13	\$75.55

For apprentice rates see "Apprentice- SHEET METAL WORKER"

HVAC (TESTING AND BALANCING -WATER) PLUMBERS LOCAL 4	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HVAC MECHANIC <i>PLUMBERS LOCAL 4</i>	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.61	\$9.65	\$17.14	\$0.00	\$65.40
	06/01/2024	\$39.94	\$9.65	\$17.14	\$0.00	\$66.73
	12/01/2024	\$41.27	\$9.65	\$17.14	\$0.00	\$68.06
	06/01/2025	\$42.66	\$9.65	\$17.14	\$0.00	\$69.45
	12/01/2025	\$44.04	\$9.65	\$17.14	\$0.00	\$70.83
	06/01/2026	\$45.48	\$9.65	\$17.14	\$0.00	\$72.27
	12/01/2026	\$46.92	\$9.65	\$17.14	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (WORCESTER)</i>	09/01/2023	\$48.15	\$14.75	\$19.61	\$0.00	\$82.51
	09/01/2024	\$51.23	\$14.75	\$19.61	\$0.00	\$85.59
	09/01/2025	\$54.31	\$14.75	\$19.61	\$0.00	\$88.67
	09/01/2026	\$57.38	\$14.75	\$19.61	\$0.00	\$91.74

**Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Worcester**

**Effective Date - 09/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.08	\$14.75	\$14.32	\$0.00	\$53.15
2	60	\$28.89	\$14.75	\$15.37	\$0.00	\$59.01
3	70	\$33.71	\$14.75	\$16.43	\$0.00	\$64.89
4	80	\$38.52	\$14.75	\$17.49	\$0.00	\$70.76

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.62	\$14.75	\$14.32	\$0.00	\$54.69
2	60	\$30.74	\$14.75	\$15.37	\$0.00	\$60.86
3	70	\$35.86	\$14.75	\$16.43	\$0.00	\$67.04
4	80	\$40.98	\$14.75	\$17.49	\$0.00	\$73.22

**Notes:**

Steps are 1 year

**Apprentice to Journeyworker Ratio:1:4**

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 7 (WORCESTER AREA)</i>	03/16/2024	\$53.67	\$8.35	\$26.70	\$0.00	\$88.72
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<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
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**Apprentice - IRONWORKER - Local 7 Worcester**

**Effective Date - 03/16/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$32.20	\$8.35	\$26.70	\$0.00	\$67.25
2	70	\$37.57	\$8.35	\$26.70	\$0.00	\$72.62
3	75	\$40.25	\$8.35	\$26.70	\$0.00	\$75.30
4	80	\$42.94	\$8.35	\$26.70	\$0.00	\$77.99
5	85	\$45.62	\$8.35	\$26.70	\$0.00	\$80.67
6	90	\$48.30	\$8.35	\$26.70	\$0.00	\$83.35

**Notes:**

**Apprentice to Journeyworker Ratio:1:4**

JACKHAMMER & PAVING BREAKER OPERATOR LABORERS - ZONE 2	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

LABORER LABORERS - ZONE 2	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
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**Apprentice - LABORER - Zone 2**

**Effective Date - 12/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.72	\$9.65	\$16.89	\$0.00	\$49.26
2	70	\$26.50	\$9.65	\$16.89	\$0.00	\$53.04
3	80	\$30.29	\$9.65	\$16.89	\$0.00	\$56.83
4	90	\$34.07	\$9.65	\$16.89	\$0.00	\$60.61

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

LABORER (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
	06/01/2024	\$39.19	\$9.65	\$17.14	\$0.00	\$65.98
	12/01/2024	\$40.52	\$9.65	\$17.14	\$0.00	\$67.31
	06/01/2025	\$41.91	\$9.65	\$17.14	\$0.00	\$68.70
	12/01/2025	\$43.29	\$9.65	\$17.14	\$0.00	\$70.08
	06/01/2026	\$44.73	\$9.65	\$17.14	\$0.00	\$71.52
	12/01/2026	\$46.17	\$9.65	\$17.14	\$0.00	\$72.96



<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
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**Apprentice - LABORER (Heavy & Highway) - Zone 2**

**Effective Date - 12/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$22.72	\$9.65	\$17.14	\$0.00	\$49.51
2	70	\$26.50	\$9.65	\$17.14	\$0.00	\$53.29
3	80	\$30.29	\$9.65	\$17.14	\$0.00	\$57.08
4	90	\$34.07	\$9.65	\$17.14	\$0.00	\$60.86

**Effective Date - 06/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.51	\$9.00	\$16.89	\$0.00	\$49.40
2	70	\$27.43	\$9.00	\$16.89	\$0.00	\$53.32
3	80	\$31.35	\$9.00	\$16.89	\$0.00	\$57.24
4	90	\$35.27	\$9.00	\$16.89	\$0.00	\$61.16

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

<b>LABORER: CARPENTER TENDER</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
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For apprentice rates see "Apprentice- LABORER"

<b>LABORER: CEMENT FINISHER TENDER</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.36	\$9.40	\$16.89	\$0.00	\$64.65
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For apprentice rates see "Apprentice- LABORER"

<b>LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.95	\$9.65	\$17.20	\$0.00	\$64.80
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For apprentice rates see "Apprentice- LABORER"

<b>LABORER: MASON TENDER</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

<b>LABORER: MASON TENDER (HEAVY &amp; HIGHWAY)</b> <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

<b>LABORER: MULTI-TRADE TENDER</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
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For apprentice rates see "Apprentice- LABORER"

<b>LABORER: TREE REMOVER</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
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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"

<b>LASER BEAM OPERATOR</b> <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2024	\$47.89	\$11.49	\$21.37	\$0.00	\$80.75
	08/01/2024	\$49.57	\$11.49	\$21.37	\$0.00	\$82.43
	02/01/2025	\$50.61	\$11.49	\$21.37	\$0.00	\$83.47
	08/01/2025	\$52.33	\$11.49	\$21.37	\$0.00	\$85.19
	02/01/2026	\$53.41	\$11.49	\$21.37	\$0.00	\$86.27
	08/01/2026	\$55.17	\$11.49	\$21.37	\$0.00	\$88.03
	02/01/2027	\$56.29	\$11.49	\$21.37	\$0.00	\$89.15

**Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.95	\$11.49	\$21.37	\$0.00	\$56.81
2	60	\$28.73	\$11.49	\$21.37	\$0.00	\$61.59
3	70	\$33.52	\$11.49	\$21.37	\$0.00	\$66.38
4	80	\$38.31	\$11.49	\$21.37	\$0.00	\$71.17
5	90	\$43.10	\$11.49	\$21.37	\$0.00	\$75.96

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.79	\$11.49	\$21.37	\$0.00	\$57.65
2	60	\$29.74	\$11.49	\$21.37	\$0.00	\$62.60
3	70	\$34.70	\$11.49	\$21.37	\$0.00	\$67.56
4	80	\$39.66	\$11.49	\$21.37	\$0.00	\$72.52
5	90	\$44.61	\$11.49	\$21.37	\$0.00	\$77.47

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

MARBLE MASONS, TILELAYERS & TERRAZZO MECH <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2024	\$62.42	\$11.49	\$23.56	\$0.00	\$97.47
	08/01/2024	\$64.52	\$11.49	\$23.56	\$0.00	\$99.57
	02/01/2025	\$65.82	\$11.49	\$23.56	\$0.00	\$100.87
	08/01/2025	\$67.97	\$11.49	\$23.56	\$0.00	\$103.02
	02/01/2026	\$69.32	\$11.49	\$23.56	\$0.00	\$104.37
	08/01/2026	\$71.52	\$11.49	\$23.56	\$0.00	\$106.57
	02/01/2027	\$72.92	\$11.49	\$23.56	\$0.00	\$107.97

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

**Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.21	\$11.49	\$23.56	\$0.00	\$66.26
2	60	\$37.45	\$11.49	\$23.56	\$0.00	\$72.50
3	70	\$43.69	\$11.49	\$23.56	\$0.00	\$78.74
4	80	\$49.94	\$11.49	\$23.56	\$0.00	\$84.99
5	90	\$56.18	\$11.49	\$23.56	\$0.00	\$91.23

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.26	\$11.49	\$23.56	\$0.00	\$67.31
2	60	\$38.71	\$11.49	\$23.56	\$0.00	\$73.76
3	70	\$45.16	\$11.49	\$23.56	\$0.00	\$80.21
4	80	\$51.62	\$11.49	\$23.56	\$0.00	\$86.67
5	90	\$58.07	\$11.49	\$23.56	\$0.00	\$93.12

**Notes:**

**Apprentice to Journeyworker Ratio:1:5**

MECH. SWEEPER OPERATOR (ON CONST. SITES) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 3) <i>MILLWRIGHTS LOCAL 1121 - Zone 3</i>	01/01/2024	\$41.20	\$10.08	\$21.22	\$0.00	\$72.50
	01/06/2025	\$43.48	\$10.08	\$21.22	\$0.00	\$74.78
	01/05/2026	\$45.76	\$10.08	\$21.22	\$0.00	\$77.06

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - MILLWRIGHT - Local 1121 Zone 3</b>						
<b>Effective Date - 01/01/2024</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$22.66	\$10.08	\$5.36	\$0.00	\$38.10
2	65	\$26.78	\$10.08	\$6.34	\$0.00	\$43.20
3	75	\$30.90	\$10.08	\$18.78	\$0.00	\$59.76
4	85	\$35.02	\$10.08	\$19.76	\$0.00	\$64.86
<b>Effective Date - 01/06/2025</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$23.91	\$10.08	\$5.36	\$0.00	\$39.35
2	65	\$28.26	\$10.08	\$6.34	\$0.00	\$44.68
3	75	\$32.61	\$10.08	\$18.78	\$0.00	\$61.47
4	85	\$36.96	\$10.08	\$19.76	\$0.00	\$66.80
<b>Notes:</b> Step 1&2 Appr. indentured after 1/6/2020 receive no pension, but do receive annuity. (Step 1 \$5.72, Step 2 \$6.66) Steps are 2,000 hours						
<b>Apprentice to Journeyworker Ratio:1:4</b>						

MORTAR MIXER LABORERS - ZONE 2	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES,GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2023	\$24.41	\$15.00	\$16.40	\$0.00	\$55.81
	06/01/2024	\$25.01	\$15.00	\$16.40	\$0.00	\$56.41
	12/01/2024	\$25.67	\$15.00	\$16.40	\$0.00	\$57.07
	06/01/2025	\$26.27	\$15.00	\$16.40	\$0.00	\$57.67
	12/01/2025	\$26.93	\$15.00	\$16.40	\$0.00	\$58.33
	06/01/2026	\$27.52	\$15.00	\$16.40	\$0.00	\$58.92
	12/01/2026	\$28.19	\$15.00	\$16.40	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4	12/01/2023	\$29.86	\$15.00	\$16.40	\$0.00	\$61.26
	06/01/2024	\$30.58	\$15.00	\$16.40	\$0.00	\$61.98
	12/01/2024	\$31.38	\$15.00	\$16.40	\$0.00	\$62.78
	06/01/2025	\$32.10	\$15.00	\$16.40	\$0.00	\$63.50
	12/01/2025	\$32.90	\$15.00	\$16.40	\$0.00	\$64.30
	06/01/2026	\$33.62	\$15.00	\$16.40	\$0.00	\$65.02
	12/01/2026	\$34.42	\$15.00	\$16.40	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2024	\$56.06	\$9.95	\$23.95	\$0.00	\$89.96
	07/01/2024	\$57.26	\$9.95	\$23.95	\$0.00	\$91.16
	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.03	\$9.95	\$0.00	\$0.00	\$37.98
2	55	\$30.83	\$9.95	\$6.66	\$0.00	\$47.44
3	60	\$33.64	\$9.95	\$7.26	\$0.00	\$50.85
4	65	\$36.44	\$9.95	\$7.87	\$0.00	\$54.26
5	70	\$39.24	\$9.95	\$20.32	\$0.00	\$69.51
6	75	\$42.05	\$9.95	\$20.93	\$0.00	\$72.93
7	80	\$44.85	\$9.95	\$21.53	\$0.00	\$76.33
8	90	\$50.45	\$9.95	\$22.74	\$0.00	\$83.14

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$28.63	\$9.95	\$0.00	\$0.00	\$38.58
2	55	\$31.49	\$9.95	\$6.66	\$0.00	\$48.10
3	60	\$34.36	\$9.95	\$7.26	\$0.00	\$51.57
4	65	\$37.22	\$9.95	\$7.87	\$0.00	\$55.04
5	70	\$40.08	\$9.95	\$20.32	\$0.00	\$70.35
6	75	\$42.95	\$9.95	\$20.93	\$0.00	\$73.83
7	80	\$45.81	\$9.95	\$21.53	\$0.00	\$77.29
8	90	\$51.53	\$9.95	\$22.74	\$0.00	\$84.22

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2024	\$46.96	\$9.95	\$23.95	\$0.00	\$80.86
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. <i>PAINTERS LOCAL 35 - ZONE 2</i>	07/01/2024	\$48.16	\$9.95	\$23.95	\$0.00	\$82.06
	01/01/2025	\$49.36	\$9.95	\$23.95	\$0.00	\$83.26

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.48	\$9.95	\$0.00	\$0.00	\$33.43
2	55	\$25.83	\$9.95	\$6.66	\$0.00	\$42.44
3	60	\$28.18	\$9.95	\$7.26	\$0.00	\$45.39
4	65	\$30.52	\$9.95	\$7.87	\$0.00	\$48.34
5	70	\$32.87	\$9.95	\$20.32	\$0.00	\$63.14
6	75	\$35.22	\$9.95	\$20.93	\$0.00	\$66.10
7	80	\$37.57	\$9.95	\$21.53	\$0.00	\$69.05
8	90	\$42.26	\$9.95	\$22.74	\$0.00	\$74.95

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.08	\$9.95	\$0.00	\$0.00	\$34.03
2	55	\$26.49	\$9.95	\$6.66	\$0.00	\$43.10
3	60	\$28.90	\$9.95	\$7.26	\$0.00	\$46.11
4	65	\$31.30	\$9.95	\$7.87	\$0.00	\$49.12
5	70	\$33.71	\$9.95	\$20.32	\$0.00	\$63.98
6	75	\$36.12	\$9.95	\$20.93	\$0.00	\$67.00
7	80	\$38.53	\$9.95	\$21.53	\$0.00	\$70.01
8	90	\$43.34	\$9.95	\$22.74	\$0.00	\$76.03

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER (SPRAY OR SANDBLAST, REPAINT)	01/01/2024	\$45.02	\$9.95	\$23.95	\$0.00	\$78.92
PAINTERS LOCAL 35 - ZONE 2	07/01/2024	\$46.22	\$9.95	\$23.95	\$0.00	\$80.12
	01/01/2025	\$47.42	\$9.95	\$23.95	\$0.00	\$81.32

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.51	\$9.95	\$0.00	\$0.00	\$32.46
2	55	\$24.76	\$9.95	\$6.66	\$0.00	\$41.37
3	60	\$27.01	\$9.95	\$7.26	\$0.00	\$44.22
4	65	\$29.26	\$9.95	\$7.87	\$0.00	\$47.08
5	70	\$31.51	\$9.95	\$20.32	\$0.00	\$61.78
6	75	\$33.77	\$9.95	\$20.93	\$0.00	\$64.65
7	80	\$36.02	\$9.95	\$21.53	\$0.00	\$67.50
8	90	\$40.52	\$9.95	\$22.74	\$0.00	\$73.21

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.11	\$9.95	\$0.00	\$0.00	\$33.06
2	55	\$25.42	\$9.95	\$6.66	\$0.00	\$42.03
3	60	\$27.73	\$9.95	\$7.26	\$0.00	\$44.94
4	65	\$30.04	\$9.95	\$7.87	\$0.00	\$47.86
5	70	\$32.35	\$9.95	\$20.32	\$0.00	\$62.62
6	75	\$34.67	\$9.95	\$20.93	\$0.00	\$65.55
7	80	\$36.98	\$9.95	\$21.53	\$0.00	\$68.46
8	90	\$41.60	\$9.95	\$22.74	\$0.00	\$74.29

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER / TAPER (BRUSH, NEW) *	01/01/2024	\$45.56	\$9.95	\$23.95	\$0.00	\$79.46
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2	07/01/2024	\$46.76	\$9.95	\$23.95	\$0.00	\$80.66
	01/01/2025	\$47.96	\$9.95	\$23.95	\$0.00	\$81.86

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.78	\$9.95	\$0.00	\$0.00	\$32.73
2	55	\$25.06	\$9.95	\$6.66	\$0.00	\$41.67
3	60	\$27.34	\$9.95	\$7.26	\$0.00	\$44.55
4	65	\$29.61	\$9.95	\$7.87	\$0.00	\$47.43
5	70	\$31.89	\$9.95	\$20.32	\$0.00	\$62.16
6	75	\$34.17	\$9.95	\$20.93	\$0.00	\$65.05
7	80	\$36.45	\$9.95	\$21.53	\$0.00	\$67.93
8	90	\$41.00	\$9.95	\$22.74	\$0.00	\$73.69

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.38	\$9.95	\$0.00	\$0.00	\$33.33
2	55	\$25.72	\$9.95	\$6.66	\$0.00	\$42.33
3	60	\$28.06	\$9.95	\$7.26	\$0.00	\$45.27
4	65	\$30.39	\$9.95	\$7.87	\$0.00	\$48.21
5	70	\$32.73	\$9.95	\$20.32	\$0.00	\$63.00
6	75	\$35.07	\$9.95	\$20.93	\$0.00	\$65.95
7	80	\$37.41	\$9.95	\$21.53	\$0.00	\$68.89
8	90	\$42.08	\$9.95	\$22.74	\$0.00	\$74.77

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER / TAPER (BRUSH, REPAINT)	01/01/2024	\$43.62	\$9.95	\$23.95	\$0.00	\$77.52
PAINTERS LOCAL 35 - ZONE 2	07/01/2024	\$44.82	\$9.95	\$23.95	\$0.00	\$78.72
	01/01/2025	\$46.02	\$9.95	\$23.95	\$0.00	\$79.92



**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$21.81	\$9.95	\$0.00	\$0.00	\$31.76
2	55	\$23.99	\$9.95	\$6.66	\$0.00	\$40.60
3	60	\$26.17	\$9.95	\$7.26	\$0.00	\$43.38
4	65	\$28.35	\$9.95	\$7.87	\$0.00	\$46.17
5	70	\$30.53	\$9.95	\$20.32	\$0.00	\$60.80
6	75	\$32.72	\$9.95	\$20.93	\$0.00	\$63.60
7	80	\$34.90	\$9.95	\$21.53	\$0.00	\$66.38
8	90	\$39.26	\$9.95	\$22.74	\$0.00	\$71.95

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$22.41	\$9.95	\$0.00	\$0.00	\$32.36
2	55	\$24.65	\$9.95	\$6.66	\$0.00	\$41.26
3	60	\$26.89	\$9.95	\$7.26	\$0.00	\$44.10
4	65	\$29.13	\$9.95	\$7.87	\$0.00	\$46.95
5	70	\$31.37	\$9.95	\$20.32	\$0.00	\$61.64
6	75	\$33.62	\$9.95	\$20.93	\$0.00	\$64.50
7	80	\$35.86	\$9.95	\$21.53	\$0.00	\$67.34
8	90	\$40.34	\$9.95	\$22.74	\$0.00	\$73.03

**Notes:**

Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:1:1**

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	12/01/2023	\$37.86	\$9.65	\$17.14	\$0.00	\$64.65
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2024	\$39.19	\$9.65	\$17.14	\$0.00	\$65.98
	12/01/2024	\$40.52	\$9.65	\$17.14	\$0.00	\$67.31
	06/01/2025	\$41.91	\$9.65	\$17.14	\$0.00	\$68.70
	12/01/2025	\$43.29	\$9.65	\$17.14	\$0.00	\$70.08
	06/01/2026	\$44.73	\$9.65	\$17.14	\$0.00	\$71.52
	12/01/2026	\$46.17	\$9.65	\$17.14	\$0.00	\$72.96

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)

PANEL & PICKUP TRUCKS DRIVER	01/01/2024	\$38.78	\$15.07	\$18.67	\$0.00	\$72.52
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	06/01/2024	\$39.78	\$15.07	\$18.67	\$0.00	\$73.52
	12/01/2024	\$39.78	\$15.07	\$20.17	\$0.00	\$75.02
	01/01/2025	\$39.78	\$15.57	\$20.17	\$0.00	\$75.52
	06/01/2025	\$40.78	\$15.57	\$20.17	\$0.00	\$76.52
	12/01/2025	\$40.78	\$15.57	\$21.78	\$0.00	\$78.13
	01/01/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$78.73
	06/01/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$79.73
	12/01/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$81.47
	01/01/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$82.07

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i> For apprentice rates see "Apprentice- PILE DRIVER"	08/01/2020	\$46.11	\$9.40	\$23.12	\$0.00	\$78.63
PILE DRIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2020	\$46.11	\$9.40	\$23.12	\$0.00	\$78.63

**Apprentice - PILE DRIVER - Local 56 Zone 2**

**Effective Date - 08/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	0	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

**Notes:** Apprentice wages shall be no less than the following Steps;

(Same as set in Zone 1)

1\$57.06/2\$61.96/3\$66.87/4\$69.32/5\$71.78/6\$71.78/7\$76.68/8\$76.68

**Apprentice to Journeyworker Ratio:1:5**

PIPELAYER <i>LABORERS - ZONE 2</i> For apprentice rates see "Apprentice- LABORER"	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
PIPELAYER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21
	For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"					
PLUMBER & PIPEFITTER <i>PLUMBERS LOCAL 4</i>	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
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**Apprentice - PLUMBER/PIPEFITTER - Local 4**

**Effective Date - 03/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$21.58	\$9.90	\$0.00	\$0.00	\$31.48
2	50	\$26.98	\$9.90	\$0.00	\$0.00	\$36.88
3	60	\$32.37	\$9.90	\$0.00	\$0.00	\$42.27
4	70	\$37.77	\$9.90	\$7.71	\$0.00	\$55.38
5	80	\$43.16	\$9.90	\$7.71	\$0.00	\$60.77

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.14	\$9.90	\$0.00	\$0.00	\$32.04
2	50	\$27.68	\$9.90	\$0.00	\$0.00	\$37.58
3	60	\$33.21	\$9.90	\$0.00	\$0.00	\$43.11
4	70	\$38.75	\$9.90	\$7.71	\$0.00	\$56.36
5	80	\$44.28	\$9.90	\$7.71	\$0.00	\$61.89

**Notes:**

Steps - 2000 hrs; Step 4 w/lic 75%, Step 5 w/lic 85%  
 Step 4 w/lic \$52.59, Step 5 w/lic \$57.44

**Apprentice to Journeyworker Ratio:1:3**

PNEUMATIC CONTROLS (TEMP.) <i>PLUMBERS LOCAL 4</i>	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

PNEUMATIC DRILL/TOOL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.86	\$9.65	\$17.14	\$0.00	\$65.65
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For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2023	\$39.36	\$9.40	\$16.89	\$0.00	\$65.65
	06/01/2024	\$40.69	\$9.40	\$16.89	\$0.00	\$66.98
	12/01/2024	\$42.02	\$9.40	\$16.89	\$0.00	\$68.31
	06/01/2025	\$43.41	\$9.40	\$16.89	\$0.00	\$69.70
	12/01/2025	\$44.79	\$9.40	\$16.89	\$0.00	\$71.08
	06/01/2026	\$46.23	\$9.40	\$16.89	\$0.00	\$72.52
	12/01/2026	\$47.67	\$9.40	\$16.89	\$0.00	\$73.96
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$35.62	\$15.00	\$16.40	\$0.00	\$67.02
	06/01/2024	\$36.47	\$15.00	\$16.40	\$0.00	\$67.87
	12/01/2024	\$37.42	\$15.00	\$16.40	\$0.00	\$68.82
	06/01/2025	\$38.27	\$15.00	\$16.40	\$0.00	\$69.67
	12/01/2025	\$39.22	\$15.00	\$16.40	\$0.00	\$70.62
	06/01/2026	\$40.08	\$15.00	\$16.40	\$0.00	\$71.48
	12/01/2026	\$41.03	\$15.00	\$16.40	\$0.00	\$72.43
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 170 - Dauphinais (Bellingham)</i>	01/01/2024	\$27.00	\$10.76	\$5.45	\$0.00	\$43.21
	12/01/2024	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01
	01/01/2025	\$27.60	\$11.26	\$6.15	\$0.00	\$45.01
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

ROOFER (Inc.Roofing &Roofing Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2024	\$50.03	\$12.78	\$21.45	\$0.00	\$84.26
	08/01/2024	\$51.53	\$12.78	\$21.45	\$0.00	\$85.76
	02/01/2025	\$52.78	\$12.78	\$21.45	\$0.00	\$87.01
	08/01/2025	\$54.28	\$12.78	\$21.45	\$0.00	\$88.51
	02/01/2026	\$55.53	\$12.78	\$21.45	\$0.00	\$89.76

**Apprentice - ROOFER - Local 33**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.02	\$12.78	\$6.21	\$0.00	\$44.01
2	60	\$30.02	\$12.78	\$21.45	\$0.00	\$64.25
3	65	\$32.52	\$12.78	\$21.45	\$0.00	\$66.75
4	75	\$37.52	\$12.78	\$21.45	\$0.00	\$71.75
5	85	\$42.53	\$12.78	\$21.45	\$0.00	\$76.76

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.77	\$12.78	\$6.21	\$0.00	\$44.76
2	60	\$30.92	\$12.78	\$21.45	\$0.00	\$65.15
3	65	\$33.49	\$12.78	\$21.45	\$0.00	\$67.72
4	75	\$38.65	\$12.78	\$21.45	\$0.00	\$72.88
5	85	\$43.80	\$12.78	\$21.45	\$0.00	\$78.03

**Notes: \*\* 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1**  
 Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.  
 (Hot Pitch Mechanics' receive \$1.00 hr. above ROOFER)

**Apprentice to Journeyworker Ratio:\*\***

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	02/01/2024	\$50.28	\$12.78	\$21.45	\$0.00	\$84.51
	08/01/2024	\$51.78	\$12.78	\$21.45	\$0.00	\$86.01
	02/01/2025	\$53.03	\$12.78	\$21.45	\$0.00	\$87.26
	08/01/2025	\$54.53	\$12.78	\$21.45	\$0.00	\$88.76
	02/01/2026	\$55.78	\$12.78	\$21.45	\$0.00	\$90.01

For apprentice rates see "Apprentice- ROOFER"

SHEETMETAL WORKER <i>SHEETMETAL WORKERS LOCAL 63</i>	01/01/2024	\$40.22	\$11.96	\$18.74	\$2.13	\$73.05
	07/01/2024	\$41.47	\$11.96	\$18.74	\$2.13	\$74.30
	01/01/2025	\$42.72	\$11.96	\$18.74	\$2.13	\$75.55

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - SHEET METAL WORKER - Local 63**

**Effective Date - 01/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.10	\$5.38	\$4.86	\$0.85	\$29.19
2	50	\$20.11	\$5.98	\$5.40	\$0.94	\$32.43
3	55	\$22.12	\$6.58	\$9.71	\$1.15	\$39.56
4	60	\$24.13	\$7.18	\$9.71	\$1.23	\$42.25
5	65	\$26.14	\$7.77	\$9.71	\$1.31	\$44.93
6	70	\$28.15	\$8.37	\$9.71	\$1.39	\$47.62
7	75	\$30.17	\$8.97	\$9.71	\$1.47	\$50.32
8	80	\$32.18	\$9.57	\$17.66	\$1.78	\$61.19
9	85	\$34.19	\$10.17	\$17.66	\$1.86	\$63.88
10	90	\$36.20	\$10.76	\$17.66	\$1.94	\$66.56

**Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$18.66	\$5.38	\$4.86	\$0.85	\$29.75
2	50	\$20.74	\$5.98	\$5.40	\$0.94	\$33.06
3	55	\$22.81	\$6.58	\$9.71	\$1.15	\$40.25
4	60	\$24.88	\$7.18	\$9.71	\$1.23	\$43.00
5	65	\$26.96	\$7.77	\$9.71	\$1.31	\$45.75
6	70	\$29.03	\$8.37	\$9.71	\$1.39	\$48.50
7	75	\$31.10	\$8.97	\$9.71	\$1.47	\$51.25
8	80	\$33.18	\$9.57	\$17.66	\$1.78	\$62.19
9	85	\$35.25	\$10.17	\$17.66	\$1.86	\$64.94
10	90	\$37.32	\$10.76	\$17.66	\$1.94	\$67.68

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

SPECIALIZED EARTH MOVING EQUIP < 35 TONS TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	01/01/2024	\$39.24	\$15.07	\$18.67	\$0.00	\$72.98
	06/01/2024	\$40.24	\$15.07	\$18.67	\$0.00	\$73.98
	12/01/2024	\$40.24	\$15.07	\$20.17	\$0.00	\$75.48
	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2024	\$39.53	\$15.07	\$18.67	\$0.00	\$73.27
	06/01/2024	\$40.53	\$15.07	\$18.67	\$0.00	\$74.27
	12/01/2024	\$40.53	\$15.07	\$20.17	\$0.00	\$75.77
	01/01/2025	\$40.53	\$15.57	\$20.17	\$0.00	\$76.27
	06/01/2025	\$41.53	\$15.57	\$20.17	\$0.00	\$77.27
	12/01/2025	\$41.53	\$15.57	\$21.78	\$0.00	\$78.88
	01/01/2026	\$41.53	\$16.17	\$21.78	\$0.00	\$79.48
	06/01/2026	\$42.53	\$16.17	\$21.78	\$0.00	\$80.48
	12/01/2026	\$42.53	\$16.17	\$23.52	\$0.00	\$82.22
	01/01/2027	\$42.53	\$16.77	\$23.52	\$0.00	\$82.82
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 669</i>	04/01/2023	\$47.43	\$11.45	\$16.61	\$0.00	\$75.49

**Apprentice - SPRINKLER FITTER - Local 669**

**Effective Date - 04/01/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$21.34	\$8.22	\$0.00	\$0.00	\$29.56
2	50	\$23.72	\$8.22	\$0.00	\$0.00	\$31.94
3	55	\$26.09	\$11.45	\$7.20	\$0.00	\$44.74
4	60	\$28.46	\$11.45	\$8.35	\$0.00	\$48.26
5	65	\$30.83	\$11.45	\$8.35	\$0.00	\$50.63
6	70	\$33.20	\$11.45	\$8.60	\$0.00	\$53.25
7	75	\$35.57	\$11.45	\$8.60	\$0.00	\$55.62
8	80	\$37.94	\$11.45	\$8.60	\$0.00	\$57.99
9	85	\$40.32	\$11.45	\$8.60	\$0.00	\$60.37
10	90	\$42.69	\$11.45	\$8.60	\$0.00	\$62.74

**Notes:**

**Apprentice to Journeyworker Ratio:1:1**

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TERRAZZO FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2024	\$61.34	\$11.49	\$23.59	\$0.00	\$96.42
	08/01/2024	\$63.44	\$11.49	\$23.59	\$0.00	\$98.52
	02/01/2025	\$64.74	\$11.49	\$23.59	\$0.00	\$99.82
	08/01/2025	\$66.89	\$11.49	\$23.59	\$0.00	\$101.97
	02/01/2026	\$68.24	\$11.49	\$23.59	\$0.00	\$103.32
	08/01/2026	\$70.44	\$11.49	\$23.59	\$0.00	\$105.52
	02/01/2027	\$71.84	\$11.49	\$23.59	\$0.00	\$106.92

**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile**

**Effective Date - 02/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$30.67	\$11.49	\$23.59	\$0.00	\$65.75
2	60	\$36.80	\$11.49	\$23.59	\$0.00	\$71.88
3	70	\$42.94	\$11.49	\$23.59	\$0.00	\$78.02
4	80	\$49.07	\$11.49	\$23.59	\$0.00	\$84.15
5	90	\$55.21	\$11.49	\$23.59	\$0.00	\$90.29

**Effective Date - 08/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$31.72	\$11.49	\$23.59	\$0.00	\$66.80
2	60	\$38.06	\$11.49	\$23.59	\$0.00	\$73.14
3	70	\$44.41	\$11.49	\$23.59	\$0.00	\$79.49
4	80	\$50.75	\$11.49	\$23.59	\$0.00	\$85.83
5	90	\$57.10	\$11.49	\$23.59	\$0.00	\$92.18

**Notes:**

**Apprentice to Journeyworker Ratio:1:3**

TEST BORING DRILLER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$48.33	\$9.65	\$18.22	\$0.00	\$76.20
	06/01/2024	\$49.81	\$9.65	\$18.22	\$0.00	\$77.68
	12/01/2024	\$51.28	\$9.65	\$18.22	\$0.00	\$79.15
	06/01/2025	\$52.78	\$9.65	\$18.22	\$0.00	\$80.65
	12/01/2025	\$54.28	\$9.65	\$18.22	\$0.00	\$82.15
	06/01/2026	\$55.83	\$9.65	\$18.22	\$0.00	\$83.70
	12/01/2026	\$57.33	\$9.65	\$18.22	\$0.00	\$85.20

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$44.45	\$9.65	\$18.22	\$0.00	\$72.32
	06/01/2024	\$45.93	\$9.65	\$18.22	\$0.00	\$73.80
	12/01/2024	\$47.40	\$9.65	\$18.22	\$0.00	\$75.27
	06/01/2025	\$48.90	\$9.65	\$18.22	\$0.00	\$76.77
	12/01/2025	\$50.40	\$9.65	\$18.22	\$0.00	\$78.27
	06/01/2026	\$51.95	\$9.65	\$18.22	\$0.00	\$79.82
	12/01/2026	\$53.45	\$9.65	\$18.22	\$0.00	\$81.32

For apprentice rates see "Apprentice- LABORER"



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2023	\$44.33	\$9.65	\$18.22	\$0.00	\$72.20
	06/01/2024	\$45.81	\$9.65	\$18.22	\$0.00	\$73.68
	12/01/2024	\$47.28	\$9.65	\$18.22	\$0.00	\$75.15
	06/01/2025	\$48.78	\$9.65	\$18.22	\$0.00	\$76.65
	12/01/2025	\$50.28	\$9.65	\$18.22	\$0.00	\$78.15
	06/01/2026	\$51.83	\$9.65	\$18.22	\$0.00	\$79.70
	12/01/2026	\$53.33	\$9.65	\$18.22	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2023	\$54.43	\$15.00	\$16.40	\$0.00	\$85.83
	06/01/2024	\$55.71	\$15.00	\$16.40	\$0.00	\$87.11
	12/01/2024	\$57.15	\$15.00	\$16.40	\$0.00	\$88.55
	06/01/2025	\$58.43	\$15.00	\$16.40	\$0.00	\$89.83
	12/01/2025	\$59.87	\$15.00	\$16.40	\$0.00	\$91.27
	06/01/2026	\$61.15	\$15.00	\$16.40	\$0.00	\$92.55
	12/01/2026	\$62.59	\$15.00	\$16.40	\$0.00	\$93.99
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2024	\$39.82	\$15.07	\$18.67	\$0.00	\$73.56
	06/01/2024	\$40.82	\$15.07	\$18.67	\$0.00	\$74.56
	12/01/2024	\$40.82	\$15.07	\$20.17	\$0.00	\$76.06
	01/01/2025	\$40.82	\$15.57	\$20.17	\$0.00	\$76.56
	06/01/2025	\$41.82	\$15.57	\$20.17	\$0.00	\$77.56
	12/01/2025	\$41.82	\$15.57	\$21.78	\$0.00	\$79.17
	01/01/2026	\$41.82	\$16.17	\$21.78	\$0.00	\$79.77
	06/01/2026	\$42.82	\$16.17	\$21.78	\$0.00	\$80.77
	12/01/2026	\$42.82	\$16.17	\$23.52	\$0.00	\$82.51
	01/01/2027	\$42.82	\$16.77	\$23.52	\$0.00	\$83.11
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2023	\$56.56	\$9.65	\$18.67	\$0.00	\$84.88
	06/01/2024	\$58.04	\$9.65	\$18.67	\$0.00	\$86.36
	12/01/2024	\$59.51	\$9.65	\$18.67	\$0.00	\$87.83
	06/01/2025	\$61.01	\$9.65	\$18.67	\$0.00	\$89.33
	12/01/2025	\$62.51	\$9.65	\$18.67	\$0.00	\$90.83
	06/01/2026	\$64.06	\$9.65	\$18.67	\$0.00	\$92.38
	12/01/2026	\$65.56	\$9.65	\$18.67	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2023	\$58.56	\$9.65	\$18.67	\$0.00	\$86.88
	06/01/2024	\$60.04	\$9.65	\$18.67	\$0.00	\$88.36
	12/01/2024	\$61.51	\$9.65	\$18.67	\$0.00	\$89.83
	06/01/2025	\$63.01	\$9.65	\$18.67	\$0.00	\$91.33
	12/01/2025	\$64.51	\$9.65	\$18.67	\$0.00	\$92.83
	06/01/2026	\$66.06	\$9.65	\$18.67	\$0.00	\$94.38
	12/01/2026	\$67.56	\$9.65	\$18.67	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2023	\$48.63	\$9.65	\$18.67	\$0.00	\$76.95
	06/01/2024	\$50.11	\$9.65	\$18.67	\$0.00	\$78.43
	12/01/2024	\$51.58	\$9.65	\$18.67	\$0.00	\$79.90
	06/01/2025	\$53.08	\$9.65	\$18.67	\$0.00	\$81.40
	12/01/2025	\$54.58	\$9.65	\$18.67	\$0.00	\$82.90
	06/01/2026	\$56.13	\$9.65	\$18.67	\$0.00	\$84.45
	12/01/2026	\$57.63	\$9.65	\$18.67	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2023	\$50.63	\$9.65	\$18.67	\$0.00	\$78.95
	06/01/2024	\$52.11	\$9.65	\$18.67	\$0.00	\$80.43
	12/01/2024	\$53.58	\$9.65	\$18.67	\$0.00	\$81.90
	06/01/2025	\$55.08	\$9.65	\$18.67	\$0.00	\$83.40
	12/01/2025	\$56.58	\$9.65	\$18.67	\$0.00	\$84.90
	06/01/2026	\$58.13	\$9.65	\$18.67	\$0.00	\$86.45
	12/01/2026	\$59.63	\$9.65	\$18.67	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2024	\$39.24	\$15.07	\$18.67	\$0.00	\$72.98
	06/01/2024	\$40.24	\$15.07	\$18.67	\$0.00	\$73.98
	12/01/2024	\$40.24	\$15.07	\$20.17	\$0.00	\$75.48
	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53	
VOICE-DATA-VIDEO TECHNICIAN <i>ELECTRICIANS LOCAL 96</i>	09/03/2023	\$34.49	\$13.00	\$17.22	\$0.00	\$64.71
	09/01/2024	\$35.29	\$13.99	\$17.57	\$0.00	\$66.85
	09/07/2025	\$36.12	\$14.98	\$17.91	\$0.00	\$69.01
	09/06/2026	\$37.04	\$15.96	\$18.27	\$0.00	\$71.27

**Classification**

**Effective Date    Base Wage    Health    Pension    Supplemental Unemployment    Total Rate**

**Apprentice - VOICE-DATA-VIDEO TECHNICIAN - Local 96**

**Effective Date - 09/03/2023**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.25	\$13.00	\$4.31	\$0.00	\$34.56
2	55	\$18.97	\$13.00	\$4.36	\$0.00	\$36.33
3	60	\$20.69	\$13.00	\$16.81	\$0.00	\$50.50
4	65	\$22.42	\$13.00	\$16.86	\$0.00	\$52.28
5	70	\$24.14	\$13.00	\$16.91	\$0.00	\$54.05
6	75	\$25.87	\$13.00	\$16.97	\$0.00	\$55.84
7	80	\$27.59	\$13.00	\$17.02	\$0.00	\$57.61
8	85	\$29.32	\$13.00	\$17.07	\$0.00	\$59.39

**Effective Date - 09/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$17.65	\$13.99	\$4.41	\$0.00	\$36.05
2	55	\$19.41	\$13.99	\$4.46	\$0.00	\$37.86
3	60	\$21.17	\$13.99	\$17.15	\$0.00	\$52.31
4	65	\$22.94	\$13.99	\$17.20	\$0.00	\$54.13
5	70	\$24.70	\$13.99	\$17.25	\$0.00	\$55.94
6	75	\$26.47	\$13.99	\$17.30	\$0.00	\$57.76
7	80	\$28.23	\$13.99	\$17.36	\$0.00	\$59.58
8	85	\$30.00	\$13.99	\$17.41	\$0.00	\$61.40

**Notes:**

**Apprentice to Journeyworker Ratio:1:1**

WAGON DRILL OPERATOR LABORERS - ZONE 2	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
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For apprentice rates see "Apprentice- LABORER"

WAGON DRILL OPERATOR (HEAVY & HIGHWAY) LABORERS - ZONE 2 (HEAVY & HIGHWAY)	12/01/2023	\$38.11	\$9.65	\$17.14	\$0.00	\$64.90
	06/01/2024	\$39.44	\$9.65	\$17.14	\$0.00	\$66.23
	12/01/2024	\$40.77	\$9.65	\$17.14	\$0.00	\$67.56
	06/01/2025	\$42.16	\$9.65	\$17.14	\$0.00	\$68.95
	12/01/2025	\$43.54	\$9.65	\$17.14	\$0.00	\$70.33
	06/01/2026	\$44.98	\$9.65	\$17.14	\$0.00	\$71.77
	12/01/2026	\$46.42	\$9.65	\$17.14	\$0.00	\$73.21

For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"

WASTE WATER PUMP OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2023	\$55.03	\$15.00	\$16.40	\$0.00	\$86.43
	06/01/2024	\$56.33	\$15.00	\$16.40	\$0.00	\$87.73
	12/01/2024	\$57.78	\$15.00	\$16.40	\$0.00	\$89.18
	06/01/2025	\$59.08	\$15.00	\$16.40	\$0.00	\$90.48
	12/01/2025	\$60.53	\$15.00	\$16.40	\$0.00	\$91.93
	06/01/2026	\$61.83	\$15.00	\$16.40	\$0.00	\$93.23
	12/01/2026	\$63.28	\$15.00	\$16.40	\$0.00	\$94.68

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS LOCAL 4</i>	03/01/2024	\$53.95	\$9.90	\$17.42	\$0.00	\$81.27
	09/01/2024	\$55.35	\$9.90	\$17.42	\$0.00	\$82.67
	03/01/2025	\$56.75	\$9.90	\$17.42	\$0.00	\$84.07
	09/01/2025	\$58.15	\$9.90	\$17.42	\$0.00	\$85.47
	03/01/2026	\$59.55	\$9.90	\$17.42	\$0.00	\$86.87
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						
<b>Marine Drilling</b>						
BLASTER <i>MARINE DRILLING</i>	01/01/2018	\$41.82	\$7.63	\$3.60	\$0.00	\$53.05
BOAT CAPTAIN <i>MARINE DRILLING</i>	01/01/2018	\$33.87	\$7.63	\$3.30	\$0.00	\$44.80
BOAT CAPTAIN / Over 1,000 hp <i>MARINE DRILLING</i>	01/01/2018	\$38.06	\$7.63	\$3.60	\$0.00	\$49.29
CORE DRILLER <i>MARINE DRILLING</i>	01/01/2018	\$31.43	\$7.63	\$2.90	\$0.00	\$41.96
CORE DRILLER HELPER <i>MARINE DRILLING</i>	01/01/2018	\$28.47	\$7.63	\$3.00	\$0.00	\$39.10
DRILLER <i>MARINE DRILLING</i>	01/01/2018	\$39.70	\$7.63	\$3.60	\$0.00	\$50.93
ENGINEER <i>MARINE DRILLING</i>	01/01/2018	\$39.69	\$7.63	\$3.50	\$0.00	\$50.82
HELPER <i>MARINE DRILLING</i>	01/01/2018	\$34.24	\$7.63	\$3.00	\$0.00	\$44.87
MACHINIST <i>MARINE DRILLING</i>	01/01/2018	\$38.88	\$7.63	\$3.30	\$0.00	\$49.81
OILER - MARINE DRILLING <i>MARINE DRILLING</i>	01/01/2018	\$34.24	\$7.63	\$3.00	\$0.00	\$44.87
TUG DECKHAND <i>MARINE DRILLING</i>	01/01/2018	\$27.61	\$7.63	\$3.00	\$0.00	\$38.24
WELDER <i>MARINE DRILLING</i>	01/01/2018	\$38.88	\$7.63	\$3.30	\$0.00	\$49.81
<b>Op Eng Marine (Dredging Work)</b>						
BOAT OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$29.26	\$7.63	\$3.30	\$0.00	\$40.19
CERTIFIED WELDER <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$31.09	\$7.63	\$3.60	\$0.00	\$42.32
CHIEF WELDER/ CHIEF MATE <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
DERRICK / SPIDER / SPILLBARGE OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
DRAG BARGE OPERATOR / WELDER / MATE <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$30.24	\$7.63	\$3.30	\$0.00	\$41.17
ENGINEER / ELECTRICIAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
LICENSED BOAT OPERATOR <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.02	\$7.63	\$3.60	\$0.00	\$44.25
LICENSED TUG OPERATOR OVER 1000HP <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$38.18	\$7.63	\$3.60	\$0.00	\$49.41

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
MAINTENANCE ENGINEER <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$33.03	\$7.63	\$3.60	\$0.00	\$44.26
OILER - MARINE DIVISION <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
OPERATOR / LEVERMAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$38.18	\$7.63	\$3.60	\$0.00	\$49.41
RODMAN / SCOWMAN <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
SHOREMAN / DECKHAND <i>OPERATING ENGINEERS - MARINE DIVISION</i>	10/01/2017	\$24.30	\$7.63	\$3.00	\$0.00	\$34.93
<b>Outside Electrical - East</b>						
CABLE TECHNICIAN (Power Zone) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i> For apprentice rates see "Apprentice- LINEMAN"	08/30/2020	\$29.67	\$9.25	\$1.89	\$0.00	\$40.81
CABLEMAN (Underground Ducts & Cables) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i> For apprentice rates see "Apprentice- LINEMAN"	08/30/2020	\$42.03	\$9.25	\$10.27	\$0.00	\$61.55
DRIVER / GROUNDMAN CDL <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i> For apprentice rates see "Apprentice- LINEMAN"	08/30/2020	\$34.62	\$9.25	\$10.07	\$0.00	\$53.94
DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i> For apprentice rates see "Apprentice- LINEMAN"	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
EQUIPMENT OPERATOR (Class A CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i> For apprentice rates see "Apprentice- LINEMAN"	08/30/2020	\$42.03	\$9.25	\$14.35	\$0.00	\$65.63
EQUIPMENT OPERATOR (Class B CDL) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i> For apprentice rates see "Apprentice- LINEMAN"	08/30/2020	\$37.09	\$9.25	\$10.87	\$0.00	\$57.21
GROUNDMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i> For apprentice rates see "Apprentice- LINEMAN"	08/30/2020	\$27.20	\$9.25	\$1.82	\$0.00	\$38.27
GROUNDMAN -Inexperienced (<2000 Hrs.) <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i> For apprentice rates see "Apprentice- LINEMAN"	08/30/2020	\$22.25	\$9.25	\$1.82	\$0.00	\$33.32
JOURNEYMAN LINEMAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	08/30/2020	\$49.45	\$9.25	\$17.48	\$0.00	\$76.18

<b>Classification</b>	<b>Effective Date</b>	<b>Base Wage</b>	<b>Health</b>	<b>Pension</b>	<b>Supplemental Unemployment</b>	<b>Total Rate</b>
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**Apprentice - LINEMAN (Outside Electrical) - East Local 104**

**Effective Date - 08/30/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$29.67	\$9.25	\$3.39	\$0.00	\$42.31
2	65	\$32.14	\$9.25	\$3.46	\$0.00	\$44.85
3	70	\$34.62	\$9.25	\$3.54	\$0.00	\$47.41
4	75	\$37.09	\$9.25	\$5.11	\$0.00	\$51.45
5	80	\$39.56	\$9.25	\$5.19	\$0.00	\$54.00
6	85	\$42.03	\$9.25	\$5.26	\$0.00	\$56.54
7	90	\$44.51	\$9.25	\$7.34	\$0.00	\$61.10

**Notes:**

**Apprentice to Journeyworker Ratio:1:2**

TELEDATA CABLE SPLICER <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$30.73	\$4.70	\$3.17	\$0.00	\$38.60
TELEDATA LINEMAN/EQUIPMENT OPERATOR <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77
TELEDATA WIREMAN/INSTALLER/TECHNICIAN <i>OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</i>	02/04/2019	\$28.93	\$4.70	\$3.14	\$0.00	\$36.77

**Additional Apprentice Information:**

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

\*\* Multiple ratios are listed in the comment field.

\*\*\* APP to JM; 1:1, 2:2, 2:3, 3:4, 4:4, 4:5, 4:6, 5:7, 6:7, 6:8, 6:9, 7:10, 8:10, 8:11, 8:12, 9:13, 10:13, 10:14, etc.

\*\*\*\* APP to JM; 1:1, 1:2, 2:3, 2:4, 3:5, 4:6, 4:7, 5:8, 6:9, 6:10, 7:11, 8:12, 8:13, 9:14, 10:15, 10:16, etc.

## DOCUMENT 00870

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY  
CONSTRUCTION CONTRACT SPECIFICATIONS  
(EXECUTIVE ORDER 11246)  
Revised April 9, 2019

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 (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved 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, Executive Order 11246, or the regulations promulgated pursuant thereto.

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 where there is an obligation to do so under 41 CFR Part 60-3.
  - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
  - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
  - n. Ensure that all facilities and company activities are 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 pursuant to Executive Order 11246.

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 pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
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.
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

<u>STATE:</u>	<u>Goals (percent)</u>
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 contract, 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

Heavy Construction Projects; and Marine Construction Projects.....	Pages 3 through 22
Highway Construction Projects .....	Pages 23 through 30
Heavy Dredging .....	Pages 31 through 36

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General Decision Number: MA20240002 03/22/2024

Superseded General Decision Number: MA20230002

State: Massachusetts

Construction Type: Heavy  
HEAVY CONSTRUCTION PROJECTS; AND  
MARINE CONSTRUCTION PROJECTS

County: Worcester County in Massachusetts.

HEAVY CONSTRUCTION PROJECTS; AND MARINE CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:           	. Executive Order 14026 generally applies to the contract.  . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:         	. Executive Order 13658 generally applies to the contract.  . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	01/19/2024
2	02/09/2024
3	03/01/2024
4	03/22/2024

ASBE0006-005 09/01/2023

	Rates	Fringes
Insulator/asbestos worker Includes the application of all insulating materials, protective coverings, coating, and finishes all types of mechanical systems.....	\$ 48.15	35.16
Includes the application of all insulating materials, protective coverings, coating, and finishes to all types of mechanical systems.....	\$ 37.50	24.35

BOIL0029-001 01/01/2021

	Rates	Fringes
BOILERMAKER.....	\$ 45.87	29.02

BRMA0001-002 08/01/2023

SPRINGFIELD/PITTSFIELD CHAPTER WORCESTER (Warren County)

	Rates	Fringes
Bricklayer, Cement Mason, Plasterer & Stonemason.....	\$ 50.81	32.27

BRMA0001-014 08/01/2023

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)

	Rates	Fringes
Bricklayer, Cement Mason, Plasterer & Stonemason.....	\$ 60.26	33.71

BRMA0001-015 08/01/2023

LOWELL CHAPTER  
 WORCESTER (Hopedale, Milford, Southboro)

	Rates	Fringes
Bricklayer, Cement Mason, Plasterer & Stonemason.....	\$ 60.26	33.71

BRMA0001-023 08/01/2023

LOWELL CHAPTER  
 WORCESTER (Ashburhanm, Athol, Fitchburg, Gardner, Harvard,  
 Hubbardston, Lancaster, Leominster, Lunenburg, Petersham,  
 Phillipston, Princeton, Royalston, Sterling, Templeton,  
 Westminster, Winchendon)

	Rates	Fringes
Bricklayer, Cement Mason, Plasterer & Stonemason.....	\$ 60.26	33.71

BRMA0003-001 08/01/2023

	Rates	Fringes
Marble & Tile Finisher.....	\$ 47.89	32.43
Marble, Tile & Terrazzo Workers.....	\$ 62.42	34.37
TERRAZZO FINISHER.....	\$ 61.34	34.21

CARP0056-004 08/01/2022

	Rates	Fringes
DIVER TENDER.....	\$ 52.15	34.10
DIVER.....	\$ 68.70	35.57

CARP0056-008 08/01/2022

	Rates	Fringes
PILEDRIVERMAN.....	\$ 45.74	34.10

\* CARP0336-002 03/01/2024

WORCESTER (Except Gilbertville, Harwick, Warren, West Brookfield)

	Rates	Fringes
Carpenter/Lather.....	\$ 46.86	30.94

\* CARP0336-007 03/01/2024

WORCESTER (Gilbertville, Hardwick, Warren, West Brookfield)

	Rates	Fringes
Carpenter/Lather.....	\$ 46.86	30.94

CARP1121-004 01/01/2024

	Rates	Fringes
MILLWRIGHT.....	\$ 41.20	32.99

ELEC0096-002 09/04/2022

WORCESTER (Warren)

	Rates	Fringes
ELECTRICIAN.....	\$ 45.59	30.92

ELEC0104-001 08/29/2022

	Rates	Fringes
Line Construction:		
Cableman.....	\$ 53.06	28.49+A
Equipment Operator.....	\$ 45.10	25.20+A
Groundman.....	\$ 29.18	12.10+A
Lineman.....	\$ 53.06	28.49+A

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.

ELEV0041-002 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 61.13	37.335+a+b

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.

ENGI0004-003 12/01/2023

WORCESTER (Except Athol, Barre, Brookfield, East Brookfield, Hardwick, New Braintree, North Brookfield, Oakham, Petersham, Phillipston, Royalston, Strutbridge, Templeton, Warren, West Brookfield, Winchendon)

	Rates	Fringes
Power equipment operators:		
BUILDING, HEAVY & MARINE		
GROUP 1.....	\$ 48.73	29.25
Group 1.....	\$ 55.03	32.45
GROUP 2.....	\$ 48.23	29.25
Group 2.....	\$ 54.43	32.45
GROUP 3.....	\$ 32.47	29.25
Group 3.....	\$ 35.62	32.45
GROUP 4.....	\$ 39.89	29.25
Group 4.....	\$ 44.47	32.45
GROUP 5.....	\$ 23.08	29.25
Group 5.....	\$ 24.41	32.45
GROUP 6.....	\$ 27.64	29.25
Group 6.....	\$ 29.86	32.45

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

POWER EQUIPMENT OPERATORS CLASSIFICATIONS BUILDING AND HEAVY CONSTRUCTION

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  
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

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)

GROUP 4: Assitant engineer (fireman)

GROUP 5: Oiler (other than truck cranes and gradalls)

GROUP 6: Oiler (on truck cranes and gradalls)

POWER EQUIPMENT OPERATORS CLASSIFICATIONS MARINE CONSTRUCTION

GROUP 1: Shovel; crane; truck crane; cherry picker; derrick;  
pile driver; two or more drum machines; lighters; derrick  
boats; trenching machines; mechanic hoist pavement  
breakers; cement concrete pavers; draglines; hoisting  
engines; pumpcrete machines; elevating graders; shovel  
dozer; front end loader; backhoe; gradall; cable ways;  
boring machine; rotary drill; post hole hammer; post hole  
digger; fork lift; timber jack; asphalt plant (on site);  
concrete batching and/or mixing plant (on site); crusher  
plant (on site); paving concrete mixer

GROUP 2: Portable steam boiler; portable steam generator;  
sonic or vibratory hammer; grader; scraper; tandem scraper;  
concrete pump; bulldozer; tractor; York rake; mulching  
machine; roller; spreader; tamper (self-propelled or  
tractor-drawn); asphalt paver; concrete mixer with side  
loader; mechanic - maintenance; cal tracks; ballast  
regulator; switch tamper; rail anchor machine; tire truck

GROUP 3: Pumps (1-3 grouped); comressor; welding machines  
(1-3 grouped); generator; lighting plant; heaters (power  
driven 1-5); syphon-pulsometer; concrete mixer; valves  
controlling permanent plant air or steam; conveyor; well  
point systems; auger (powered by independent engines and  
attached to pile drivers); hydraulic saws

GROUP 4: Fireman

GROUP 5: Assistant engineer (other than truck crane and  
gradall)

GROUP 6: Assistant engineer (on truck crane and gradall)

ENGI0098-005 12/01/2016

	Rates	Fringes
Power equipment operators:		
Group 1.....	\$ 33.68	23.96+A
Group 2.....	\$ 33.37	23.96+A
Group 3.....	\$ 33.15	23.96+A
Group 4.....	\$ 32.54	23.96+A
Group 5.....	\$ 29.92	23.96+A
Group 6.....	\$ 28.80	23.96+A
Group 7.....	\$ 26.86	23.96+A
Group 8.....	\$ 305.95	23.96+A
Group 9.....	\$ 230.69	23.96+A
Group 10.....	\$ 35.17	23.96+A
Group 11.....	\$ 38.18	23.96+A
Group 12.....	\$ 39.68	23.96+A
Group 13.....	\$ 40.68	23.96+A
Group 14.....	\$ 41.68	23.96+A
Group 15.....	\$ 43.18	23.96+A

HAZARDOUS WASTE PREMIUM \$2.00

FOOTNOTE FOR POWER EQUIPMENT OPERATORS:

Group 8 and Group 9 are per day wages.

- 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

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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.

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.

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.

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.

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.

Group 6: Compressor (one or two) 315 cu ft to 900 cu ft; pumps 4 inches to 16 inches (total discharge).

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.

Group 8: Truck crane crews

Group 9: Oiler

Group 10: Master Mechanic

Group 11: Boom lengths over 150 feet including jib

Group 12: Boom lengths over 200 feet including jib

Group 13: Boom lengths over 250 feet including jib

Group 14: Boom lengths over 300 feet including jib

Group 15: Boom lengths over 350 feet including jib

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IRON0007-012 09/16/2023

	Rates	Fringes
IRONWORKER.....	\$ 53.40	36.21

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LABO0022-001 12/01/2023

	Rates	Fringes
Laborers: (HEAVY CONSTRUCTION)		
GROUP 1.....	\$ 37.86	27.59
GROUP 2.....	\$ 38.11	27.59
GROUP 3.....	\$ 38.61	27.59
GROUP 4.....	\$ 38.86	27.59
GROUP 5.....	\$ 25.40	27.59
GROUP 6.....	\$ 39.86	27.59

LABORERS CLASSIFICATIONS

GROUP 1: Laborers; carpenter tenders; cement finisher tenders, plasterer tenders

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

GROUP 3: Air track operator; block paver; rammer; curb setter, hydraulic and similar self powered drills

GROUP 4: Blaster; powderman

GROUP 5: Flagger

GROUP 6: Asbestos Abatement; Toxic and Hazardous Waste Laborers

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LABO0022-003 12/01/2021

	Rates	Fringes
Plasterer tender		
BARNSTABLE, BRISTOL, DUKES, ESSEX, NANTUCKET, MIDDLESEX (with the exception of Arlington, Belmont, Burlington, Cambridge, Everett, Malden, Medford, Melrose, Reading, Somerville, Stoneham, Wakefield,		

Winchester, Winthrop and  
 Woburn); NORFOLK (with the  
 exception of Brookline  
 Dedham and Milton) COUNTIES.\$ 35.41 26.59  
 SUFFOLK COUNTY (Boston,  
 Chelsea, Revere, Winthrop,  
 Deer Island, Nut Island);  
 MIDDLESEX COUNTY  
 (Arlington, Belmont,  
 Burlington, Cambridge,  
 Everett, Malden, Medford,  
 Melrose, Reading,  
 Somerville, Stoneham,  
 Wakefield, Winchester,  
 Winthrop and Woburn only);  
 NORFOLK COUNTY (Brookline,  
 Dedham, and Milton only)....\$ 41.18 27.52

LABO0022-013 12/01/2021

Rates Fringes

Laborers:

(FREE AIR OPERATION):  
 SHIELD DRIVEN AND LINER  
 PLATE IN FREE AIR)  
 GROUP 1.....\$ 45.48 28.02  
 GROUP 2.....\$ 45.48 28.02  
 (OPEN AIR CASSONS,  
 UNDERPINNING AND TEST  
 BORING INDUSTRIES):  
  
 TEST BORING & WELL DRILLING  
 Driller.....\$ 42.58 27.67  
 Laborer.....\$ 41.18 27.67  
 (OPEN AIR CASSONS,  
 UNDERPINNING AND TEST  
 BORING INDUSTRIES):  
  
 OPEN AIR CASSON,  
 UNDERPINNING WORK & BORING  
 CREW  
 Bottom man.....\$ 42.33 27.67  
 Laborers; Top man.....\$ 41.18 27.67  
 (TUNNELS, CAISSON &  
 CYLINDER WORK IN  
 COMPRESSED AIR)  
 GROUP 1.....\$ 42.93 28.02  
 GROUP 2.....\$ 53.41 28.02  
 GROUP 3.....\$ 53.41 28.02

GROUP 4.....	\$ 53.41	28.02
GROUP 5.....	\$ 53.41	28.02
GROUP 6.....	\$ 55.41	28.02
CLEANING CONCRETE AND CAULKING TUNNEL (Both New & Existing)		
GROUP 1.....	\$ 45.48	28.02
GROUP 2.....	\$ 45.48	28.02
ROCK SHAFT, CONCRETE LINING OF SAME AND TUNNEL IN FREE AIR		
GROUP 1.....	\$ 42.93	28.02
GROUP 2.....	\$ 45.48	28.02
GROUP 3.....	\$ 45.48	28.02
GROUP 4.....	\$ 45.48	28.02
GROUP 5.....	\$ 47.48	28.02

LABORERS CLASSIFICATIONS for TUNNELS, CAISSON & CYLINDER WORK  
IN COMPRESSED AIR

GROUP 1: Powder watchman; Top man on iron bolt; change house  
attendant

GROUP 2: Brakeman; trackman; groutman; tunnel laborer;  
outside lock tender; lock tender; guage tender

GROUP 3: Motorman, miner

GROUP 4: Blaster

GROUP 5: Mucking machine operator

GROUP 6: Hazardous Waste work within the ""HOT"" zone. (A  
premium of two dollars \$2.00 per hour over the basic wage  
rate.

LABORERS CLASSIFICATIONS for (FREE AIR OPERATION): SHIELD  
DRIVEN AND LINER PLATE IN FREE AIR

GROUP 1: Miner; miner welder; conveyor operator; motorman;  
mucking machine operator; nozzle man; grout man-; pumps,  
shaft and tunnel steel and rodman; shield and erector arm  
operators, mole nipper, outside motorman, burner, TBM  
operator, safety miner; laborer topside; heading motormen;  
erecting operators; top signal men

GROUP 2: Brakeman; trackman

LABORERS CLASSIFICATIONS FOR CLEANING CONCRETE AND CAULKING TUNNEL (Both New & Existing)

GROUP 1: Concrete workers; strippers and form movers (wood & steel), cement finisher

GROUP 2: Form erector (wood & steel and all accessories)

LABORERS CLASSIFICATIONS for ROCK SHAFT, CONCRETE LINING OF SAME AND TUNNE IN FREE AIR

GROUP 1: Change house attendants

GROUP 2: Laborers, topside, bottom men (when heading is 50 ft. from shaft) and all other laborers

GROUP 3: Brakeman; trackman; tunnel laborers; shaft laborers

GROUP 4: Miner; cage tender; bellman

GROUP 5: 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

LABO1421-003 12/01/2021

	Rates	Fringes
Laborers: (WRECKING)		
Group 1.....	\$ 41.33	27.37
Group 2.....	\$ 42.08	27.37
Group 3.....	\$ 42.33	27.37
Group 4.....	\$ 37.33	27.37
Group 5.....	\$ 40.43	27.37
Group 6.....	\$ 41.33	27.37

Group 1: Adzeman, Wrecking Laborer.  
Group 2: Burners, Jackhammers.

Group 3: Small Backhoes, Loaders on tracks, Bobcat Type Loaders, Hydraulic ""Brock"" Type Hammer Operators, Concrete Cutting Saws.

Group 4: Yardman (Salvage Yard Only).

Group 5: Yardman, Burners, Sawyers.

Group 6: Asbestos, Lead Paint, Toxic and Hazardous Waste.

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PAIN0035-006 07/01/2023

	Rates	Fringes
PAINTER		
NEW CONSTRUCTION:		
Bridge.....	\$ 55.51	35.10
Brush, Taper.....	\$ 45.01	35.10
Spray, Sandblast.....	\$ 46.41	35.10
REPAINT		
Bridge.....	\$ 55.51	35.10
Brush, Taper.....	\$ 43.07	35.10
Spray, Sandblast.....	\$ 44.47	35.10

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PAIN0035-021 07/01/2023

	Rates	Fringes
GLAZIER.....	\$ 45.01	35.10

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\* PLUM0004-002 03/01/2024

WORCESTER (Except Hopedale and Southboro)

	Rates	Fringes
Plumbers and Pipefitters.....	\$ 53.95	28.42

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\* PLUM0012-002 03/03/2024

WORCESTER (Hopedale and Southboro)

	Rates	Fringes
PLUMBER.....	\$ 67.74	35.03

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ROOF0033-001 02/01/2024

	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.....\$ 50.03 34.94

SFMA0669-002 01/01/2024

	Rates	Fringes
SPRINKLER FITTER.....	\$ 47.43	29.16

\* SHEE0017-004 02/01/2024

WORCESTER (Harvard, Lancaster)

	Rates	Fringes
Sheet metal worker.....	\$ 57.86	45.82

SHEE0063-002 01/01/2022

WORCESTER (Except Harvard & Lancaster)

	Rates	Fringes
Sheet metal worker.....	\$ 38.01	32.21

TEAM0379-003 06/01/2023

	Rates	Fringes
Truck drivers:		
Group 1.....	\$ 38.78	31.86+a+b
Group 2.....	\$ 38.95	31.86+a+b
Group 3.....	\$ 39.02	31.86+a+b
Group 4.....	\$ 39.14	31.86+a+b
Group 5.....	\$ 39.24	31.86+a+b
Group 6.....	\$ 39.53	31.86+a+b
Group 7.....	\$ 39.82	31.86+a+b

TRUCK DRIVERS CLASSIFICATIONS

Group 1: Station wagons; panel trucks; and pickup trucks

Group 2: Two axle equipment; & forklift operator

Group 3: Three axle equipment and tireman

Group 4: Four and Five Axle equipment

Group 5: Specialized earth moving equipment under 35 tons other than conventional type trucks; low bed; vachual; mechanics, paving restoration equipment

Group 6: Specialized earth moving equipment over 35 tons

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

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
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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>.

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)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

## Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

## Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of 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. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

## Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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## WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write 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 by 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

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: MA20240025 03/22/2024

Superseded General Decision Number: MA20230025

State: Massachusetts

Construction Type: Highway

County: Worcester County in Massachusetts.

HIGHWAY CONSTRUCTION PROJECTS

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

<p> If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<p>. Executive Order 14026 generally applies to the contract.          . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.</p>
<p> If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<p>. Executive Order 13658 generally applies to the contract.          . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.</p>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	01/19/2024
2	03/22/2024

\* CARP0336-004 03/01/2024

	Rates	Fringes
CARPENTER (Includes Form Work)...	\$ 46.86	30.94

\* ELEC0103-007 03/01/2024

	Rates	Fringes
ELECTRICIAN.....	\$ 61.86	36.14

ENGI0004-030 12/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Group 1.....	\$ 48.73	29.25+A
GROUP 1.....	\$ 55.03	32.45
Group 2.....	\$ 48.23	29.25+A
GROUP 2.....	\$ 54.43	32.45

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

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

Group 1: Backhoe/Excavator/Trackhoe; Bobcat/Skid Steer/Skid Loader; Broom/Sweeper; Gradall; Loader; Paver (Asphalt, Aggregate, and Concrete); Post Driver (Guardrail/Fences)  
Group 2: Bulldozer; Grader/Blade; Roller

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ENGI0004-031 12/01/2023

	Rates	Fringes
POWER EQUIPMENT OPERATOR: (Milling Machine).....	\$ 55.03	32.45

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

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IRON0007-028 09/16/2023

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 53.40	36.21

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IRON0007-029 09/16/2023

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 53.70	36.21

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LABO0039-003 06/01/2018

	Rates	Fringes
LABORER Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 33.50	22.92
Common or General.....	\$ 33.25	22.92
Guardrail Installation.....	\$ 33.50	22.92

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PAIN0035-023 07/01/2023

	Rates	Fringes
PAINTER (Steel).....	\$ 55.51	35.10

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SUMA2014-015 01/11/2017

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 56.70	21.08
IRONWORKER, REINFORCING.....	\$ 56.48	20.62

LABORER: Concrete Saw (Hand Held/Walk Behind).....	\$ 41.78	18.37
LABORER: Landscape.....	\$ 40.39	17.68
OPERATOR: Crane.....	\$ 52.14	21.08
OPERATOR: Forklift.....	\$ 64.67	0.00
OPERATOR: Mechanic.....	\$ 48.14	17.02
OPERATOR: Piledriver.....	\$ 44.46	16.94
PAINTER: Spray (Linestriping)....	\$ 48.00	0.00
PILEDRIVERMAN.....	\$ 45.65	23.33
TRAFFIC CONTROL: Flagger.....	\$ 23.00	20.44
TRAFFIC CONTROL: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper.....	\$ 44.49	12.41
TRUCK DRIVER: Concrete Truck....	\$ 33.69	15.79
TRUCK DRIVER: Dump Truck.....	\$ 30.38	7.20
TRUCK DRIVER: Flatbed Truck....	\$ 48.53	0.00

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WELDERS - Receive rate prescribed for craft performing  
operation to which welding is incidental.

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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>.

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)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

## Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

## Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of 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. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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## WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

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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 by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

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Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: MA20240006 01/05/2024

Superseded General Decision Number: MA20230006

State: Massachusetts

Construction Type: Heavy Dredging

Counties: Massachusetts Statewide.  
STATEWIDE

Massachusetts All Dredging, except self-propelled hopper dredges, on the Atlantic Coast & tributary waters emptying into the Atlantic Ocean.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

<p> If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<p>. Executive Order 14026 generally applies to the contract.          . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.</p>
<p> If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<p>. Executive Order 13658 generally applies to the contract.          . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.</p>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024

ENGI0025-001 10/01/2023

STATEWIDE

	Rates	Fringes
Dredging:		
CLASS A1.....	\$ 45.26	15.17+a+b
CLASS A2.....	\$ 40.33	14.82+a+b
CLASS B1.....	\$ 39.14	14.74+a+b
CLASS B2.....	\$ 36.84	14.58+a+b
CLASS C1.....	\$ 35.83	14.26+a+b
CLASS C2.....	\$ 34.68	14.18+a+b
CLASS D.....	\$ 28.81	13.77+a+b

CLASSIFICATIONS:

CLASS A1: Deck Captain; Mechanical Dredge Operator, Leverman, Licensed Tug Operator over 1000 HP.

CLASS A2: Crane Operator (360 swing).

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.

CLASS B2: Certified Welder.

CLASS C1: Mate, Drag Barge Operator, Assistant Fill Placer, Welder, Steward.

CLASS C2: Boat Operator.

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.

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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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>.

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 classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which 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. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of 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. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.



## Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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## WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write 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 the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write 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 by 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

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

DOCUMENT A00801

**SPECIAL PROVISIONS****SPENCER****Federal Aid Project No. HIP(BR)-003S(723)X****Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile 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 *2024 Standard Specifications for Highways and Bridges*, the *2017 Construction Standard Details*, the *Traffic Management Plans and Detail Drawings*, *MassDOT Work Zone Safety Temporary Traffic Control*, 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 American Standard for Nursery Stock*; the Plans and these Special Provisions.

The Project is located along State Route 31 (North Spencer Road) in the Town of Spencer and includes the bridge over Sevenmile River (Bridge Number S-23-012). The Project involves removal of the existing steel beam and concrete span with concrete gravity abutments and wingwalls in its entirety and replacement with a precast 3-sided box with footings and precast wingwalls. The proposed structure shall support a 37'-1" wide roadway with S3-TL4 steel bridge rails at each fascia. Work in the approach roadways shall include full depth reconstruction, approach slab construction, bridge barrier to highway guardrail transitions, and highway guardrail. The demolition/construction will be conducted with staged construction with traffic being maintained with an alternating direction single lane.

All construction other than within the temporary easements shown shall be performed within, and accessed by, existing State, City or Town roadway layouts.

**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](mailto:massdotSpecifications@dot.state.ma.us). The MassDOT project file number and municipality is to be placed in the subject line.

## **SUBSECTION 7.05 INSURANCE REQUIREMENTS**

### **B. Public Liability Insurance**

The insurance requirements set forth in this section 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.

## **SECTION 6.00: CONTROL OF MATERIALS**

### **Subsection 6.01: Source of Supply and Quality**

*Replace this subsection with the following:*

The Engineer may approve material at the source of supply before delivery to the project.

The Department reserves the right to require approval of the source of supply for any material to be incorporated into the work prior to delivery or manufacture.

The Engineer reserves the right to prohibit the use of materials, products, or components which, in their opinion, may be supplied in a manner not reasonably consistent with contract requirements.

The determination of the Engineer shall be final upon all questions which pertain to supplier approval.

Fabricators of structural steel, miscellaneous steel and aluminum products, and producers of precast concrete and prestressed concrete must be on the Department's approved fabricators list on the date the bids are opened. Only approved fabricators will be allowed to perform work for the Department.

The Contractor shall furnish all materials required for the work specified in the Contract. Said materials shall meet the requirements of the specifications for the kind of work involving their use. For any materials named or described in these specifications, an approved equivalent to that named or described in the said specifications, may be furnished.

Chapter 7, Section 22, Clause 17, of the General Laws, as amended, shall apply to the purchase by the Contractor of supplies and materials to be used in the execution of this Contract.

The rules referred to require a preference in the purchase of supplies and materials, other considerations being equal, in favor first, of supplies and materials manufactured and sold within the Commonwealth, and second, of supplies and materials manufactured and sold within the United States.

**SECTION 6.00** (Continued)

All iron and steel products, manufactured products, and construction materials shall comply with all Federal Buy America and Federal Build America Buy America (BABA) requirements, where applicable.

In Contracts requiring structural steel, precast, or prestress concrete, the Contractor shall furnish approved shop drawings, and fabrication procedures to the Department's inspector at the supply source or fabrication site. Materials for permanent construction shall be new, shall conform to the requirements of these specifications, and shall be approved by the Engineer.

Materials for temporary structures or supports adjacent to traveled ways, the failure of which would compromise the safety of the public or the traveled ways, need not be new but the Contractor shall be required to submit certification by a Structural Professional Engineer that the material meets the requirements for the intended use and shall be approved by the Engineer. Any fabrication shall conform to the requirements of these specifications. These requirements shall not apply to gantry systems and supports as well as other mechanized systems.

If testing finds that an approved supplier does not furnish a uniform product, or if the product from such source proves unacceptable at any time, the Contractor shall, at their own expense, take any and all steps necessary to furnish approved materials.

The Contractor shall submit to the Department for approval a notarized Certificate of Compliance (COC) from the Manufacturer or Supplier for each kind of manufactured or fabricated material furnished.

The COC shall certify compliance with the specifications and shall contain the following information:

1. Contract Number, City or Town, Name of Road and Federal Aid Number;
2. Name of the Contractor to which the material is supplied;
3. Kind of material supplied;
4. Quantity of material represented by the certificate;
5. Means of definitively identifying the consignment, such as invoice number, lot number, bill of lading number, label, marking, etc.;
6. Date and method of shipment;
7. Statement indicating that the material has been tested and found in conformity with the pertinent parts of the Contract;
8. Statement indicating that the material meets the requirements of Buy America and BABA, where applicable;
9. Results of all required tests including the chemical analysis in the case of metal: or in lieu of furnishing the results a statement that results of all required tests pertinent to the certificate and not submitted shall be maintained available by the undersigned for a period of not less than three years from date of final acceptance or not less than three years from date of final payment (whichever period is the longest shall apply).
10. Signature of a person having legal authority to bind the supplier.

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**SECTION 6.00** (Continued)

These COCs shall be delivered to the contract site at the same time that the materials are delivered and before such materials are incorporated into the work. The Contractor shall attach to the COC a document listing the contract bid item number(s), sub item(s), or lump sum breakdown item number(s), as applicable, under which the material will be compensated. Payment for the item in which the materials are incorporated may be withheld until these COCs are received in a form that meets the contract requirements.

If the Contractor has new materials purchased for use on a previous Department Contract which have never been used and which comply with the specifications, these materials may be furnished and used. The Contractor shall submit their own sworn statement certifying that such materials were purchased for use on a previous Contract (naming and identifying such Contract) and shall attach the original COC.

Any cost involved in furnishing the certificate shall be borne by the Contractor.

**Subsection 6.03: Delivery and Storage of Materials**

*Replace this Subsection with the following:*

Materials and equipment shall be progressively delivered to or removed from the site so that there will be neither delay in the progress of the work nor an accumulation of materials that are not to be used or removed within a reasonable time. All materials shall be stored in pre-approved locations per the conditions of the property owner.

Delivered materials and materials originating from the site, shall be stored to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located to facilitate their prompt inspection.

Approved portions of the State Highway Layout (SHLO) may be used for storage of project materials and for the placing of the Contractor's plant and equipment upon obtaining a state highway access permit. All storage sites shall be restored to their original condition by the Contractor. No additional compensation shall be given for the design, construction, preparation, or restoration of the storage site(s) or obtaining the access permit which may include but is not limited to a Traffic Management Plan (TMP), utilities, and lighting.

The application for a permit shall contain a locus map identifying the proposed location, a description of the specific activities and uses of the staging area, a TMP in accordance with Subsection 7.10 depicting minimum setbacks from the roadway and any existing structures for stored materials and equipment and how equipment will safely access and exit the staging area.

Any additional space required must be provided by the Contractor at their expense. Municipal, private, or other state-owned property shall not be used for storage purposes without written permission of the owner or lessee, and copies of such written permission shall be furnished to the Engineer.

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## **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 desired 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. As a supplement to Section 7.00 of the Standard Specifications, the Contractor is reminded that no debris of any type shall be allowed to enter water or wetland resource areas, either temporarily or permanently.

## **CONTAMINATED SOIL AND STOCKPILING**

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 designer.

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.

## **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.

## **CONTRACTOR WORK HOURS**

The Contractor will anticipate a typical weekly work schedule to include a Monday through Friday, 8-hour day work schedule in between the hours of 7:00 AM to 4:00 PM.

## **LANE CLOSURES AND TRAFFIC MANAGEMENT**

(Supplementing Subsection 7.09)

Please be advised that during Stage 2 of the bridge construction, Hastings Road will be closed to public traffic. Please refer to the Traffic Management and Detour plans.

## **HOLIDAY WORK RESTRICTIONS**

(Supplementing Subsection 7.09)

The bridge will be temporarily restricted to a single lane with alternating traffic during construction. See Plans for details.

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 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 (6/19/25)

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.

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## **NORTHERN LONG-EARED BAT PROTECTION**

The U.S. Fish and Wildlife Service (USFWS) has listed the northern long-eared bat (NLEB) as endangered under the Endangered Species Act (ESA) and the following requirements exist to protect the bat and its habitat. 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 for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat revised February 5, 2018 and amended March 31, 2023.

On behalf of FHWA, the lead federal agency for Section 7 consultation, MassDOT submitted a Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat to the USFWS through the Information for Planning and Consultation (IPaC) webpage and generated a USFWS No Effect Consistency Letter (see Document A00870), whereby it was determined that this Project will have “No Effect” to the NLEB. Therefore, the project has completed Section 7 consultation through the Endangered Species Act, and no AMMs apply to the project.

If the project scope changes (i.e., tree clearing, bridge work), additional review is required by the MassDOT Highway Division’s Environmental Services Section. Contact MassDOT Environmental Services - Wildlife & Endangered Species Unit Supervisor (David Paulson, [david.j.paulson@dot.state.ma.us](mailto:david.j.paulson@dot.state.ma.us), 857-262-3378).

## **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.

## **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 1.3 Million 18-kip (80-kn) ESALs.

**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,

- (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.

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## **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.

## **NOTICE TO OWNERS OF UTILITIES**

The Contractor shall investigate to determine the existence of other utilities that may be affected by the Contractor's operations.

Written notice shall be given by the Contractor to all public service corporations or officials owning or having charge of publicly or privately owned utilities of his/her intention to commence operations affecting such utilities at least one week in advance of the commencement of such operations and the Contractor shall at that time file a copy of such notice with the Engineer.

The District Office maintains a list of utility contact persons, addresses, and telephone numbers for each town, which may be requested by the Contractor for each location of work.

A list of public and private utilities can be found on the MassDOT website at:  
<https://www.mass.gov/info-details/utility-contacts-by-district-and-municipality>

Select District 3 under Utility Contacts by District/Municipality, and select the Town of Spencer, and then locate the utility.

The utility contact list is for guidance only and is not guaranteed to be complete or up to date.

District 3 Utility / Constructability Engineer  
ATTN: Ross A. Goodale  
508-479-9024

The following are the names and addresses of the utilities presumed to be affected, but the completeness of the list is not guaranteed:

### Town of Spencer

Utility Pole Set Responsibility: National Grid

#### Electric

National Grid  
548 Haydenville Road  
Leeds, MA 01053  
Sandra Annis (413) 582-7424  
Sandra.annis@nationalgrid.com

#### Telephone

Verizon  
385 Myles Standish Blvd.  
Taunton, MA 02780  
Karen Mealey (774) 409-3160  
Karen.m.mealey@verizon.com

## **NOTICE TO OWNERS OF UTILITIES**

### Gas

National Grid Gas  
40 Sylvan Road  
Waltham, MA 02451  
Melissa Owens (781) 907-2845  
Melissa.Owens@nationalgrid.com

Tennessee Gas Pipeline Company  
8 Anngina Drive  
Enfield, CT 06082  
David Wood (860) 763-6005  
David\_Wood@KinderMorgan.com

### DPW

Spencer Utilities & Facilities  
3 Old Meadow Road  
Spencer, MA 01562  
Bill Cundiff (508) 885-7525  
wcundiff@spencerma.gov

### Cable

Charter Communications  
301 Barber Avenue  
Worcester, MA 01606  
Rick Molnar (774) 243-9789  
[Rick.Molnar@charter.com](mailto:Rick.Molnar@charter.com)

## **NATIONAL GRID EMERGENCY TELEPHONE NUMBERS**

### GAS:

Outage/ 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

## **TENNESSEE GAS PIPELINE COMPANY TELEPHONE NUMBERS**

### GAS:

Outage/ Emergency: 1-800-231-2800

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**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”.

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**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 30 $\mu$ g/m<sup>3</sup>.

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.

## **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. This schedule will clearly indicate that the Contractor will complete all enabling work prior to the utility relocation.



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**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 Contractor 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.

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**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.

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**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.

**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.

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## 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 when required in this Subsection. These requirements are in addition to, and not in limitation of, requirements imposed in other sections.

The requirements for scheduling submissions are established based on the Project Value at the time of the bid and are designated as Type A, B, C or D. The definitions of these Schedule Requirement Types are summarized below. Complete descriptions of all detailed requirements are established elsewhere in this specification.

**Type A** – for all Site-Specific Contracts with a Project Value over \$20 Million

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Resource-Loading
- Resources Graphic Reporting
- Cash Flow Projections from the CPM
- Cash Flow Charts
- Cost-loaded CPM
- Contractor-furnished CPM software, computer and training

**Type B** – for all Site-Specific Contracts with a Project Value between \$10 Million and \$20 Million

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Cost-loaded CPM
- Resource-Loading
- Monthly Projected Spending Report (PSR)
- Contractor-furnished CPM software, computer and training

**SECTION 722 (Continued)**

**Type C** – for all Site-Specific Contracts with a Project Value between \$3 Million and \$10 Million

- 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, computer and training

**Type D** - for all contracts with a Project Value less than \$3 Million; various locations contracts of any dollar amount; contracts with durations less than one-hundred and eighty (180) Calendar Days; and other contracts as determined by the Engineer.

- Bar chart schedule updated monthly or at the request of the Engineer (See Section 722.62.B - Bar Charts.)
- Monthly Projected Spending Report (PSR) (See Section 722.62.F - Projected Spending Reports.)

**MATERIALS, EQUIPMENT, PERSONNEL****722.40 General****A. Software Requirements (Types A, B and C)**

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 within twenty-eight (28) Calendar Days after Notice to Proceed. The computer and software shall be maintained and serviced as recommended by the computer manufacturer and/or as required by the Engineer during the duration of the Contract at no additional cost to the Department. The Contractor shall provide professional training in the basic use of the software for up to eight (8) Department employees. The trainer shall be approved by the Engineer. This training shall be provided within twenty-eight (28) Calendar Days after Notice to Proceed.

**B. Scheduler Requirements**

For all schedule types, if the Contractor plans to use outside scheduling services, the scheduler shall be approved as a subcontractor 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.

**SECTION 722 (Continued)****CONSTRUCTION METHODS****722.60 General****A. Schedule Planning Session**

(Types A, B and C)

The Contractor shall conduct a schedule planning session within seven (7) Calendar Days after the Contractor receives the NTP and 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;
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 minimum of five (5) copies of 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 (All Types)****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. Baseline Schedules shall be resubmitted within fifteen (15) Calendar Days after receipt of the Engineer's comments.

**2. Contract Progress Schedule / Monthly Update Reviews**

The Engineer will respond to each submittal within twenty-one (21) Calendar Days. Schedules shall be resubmitted by the Contractor within five (5) Calendar Days after receipt of the Engineer's comments.

Failure to submit schedules as and when required could result in the withholding of full or partial pay estimate payments by the Engineer.

**SECTION 722 (Continued)****722.61 Schedule Content and Preparation Requirements**  
(Types A, B and C unless otherwise noted)

Each Contract Progress Schedule shall fully conform to these requirements.

**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.

**B. ACTIVITIES**

The schedules shall clearly define the progression of the Work from NTP to Contractor Field Completion (CFC) by using separate activities for each of the following items:

1. NTP
2. Each component of the Work defined by specific activities.
3. Detailed activities to satisfy permit requirements.
4. Procurement of fabricated materials and equipment with long lead times, including time for review and approval of submittals required before purchasing.
5. 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.
6. 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.
7. Interfaces with adjacent work, utility companies, other public agencies, sensitive abutters, and/or any other third-party work affecting the Contract
8. The Critical Path, clearly defined and organized
9. Float shall be clearly identified.
10. 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.
11. Milestones listed in Subsection 8.03 - Prosecution of Work or elsewhere in the Contract Documents
12. Subcontractor approvals at fifteen (15) Calendar Days from submittal to response
13. Full Beneficial Use (FBU) Contract Milestone per the requirements of Subsection 8.03 - Prosecution of Work
14. Contractor's request for validation of FBU (ready to open to traffic)
15. The Department's confirmation of completed work to allow for FBU.

**SECTION 722 (Continued)**

16. Substantial Completion Contract Milestone per the requirements of Subsections 7.15 - Claims Against Contractors for Payment of Labor, Materials and Other Purposes and 8.03 - Prosecution of Work
17. Contractor's request for validation of Substantial Completion
18. Punchlist 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 and 8.03 - Prosecution of Work
19. Contractor confirmation that all punchlist work and documentation has been completed.
20. Physical Completion of the Work Contract Milestone per the requirements of Subsections 5.11 - Final Acceptance and 8.03 - Prosecution of Work
21. Documentation Completion per the requirements of Subsections 5.11 - Final Acceptance and 8.03 - Prosecution of Work
22. Contractor Field Completion Contract Milestone per the requirements of Subsections 5.11 - Final Acceptance and 8.03 - Prosecution of Work
23. 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
24. Traffic work zone set-up and removal, night work and phasing
25. Early Utility Relocation (by others) that has been identified in the Contract.
26. Right-of-Way (ROW) takings that have been identified in the Contract.
27. Material Certifications
28. Work Breakdown Structure in accordance with the MassDOT-Highway Division Contractor Construction Schedule Toolkit located on the MassDOT-Highway Division website at:  
<https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit>
29. For Type A and B Contracts only: All items to be paid, 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.

**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.



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**SECTION 722 (Continued)****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.

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 (for Types A and B only)**

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 as specified in the MassDOT-Highway Division Contractor Construction Schedule Toolkit located on the MassDOT-Highway Division website at:

<https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit>

**G. ACTIVITY IDENTIFICATION NUMBERS**

The Contractor shall use the activity identification numbering system specified in the MassDOT-Highway Division Contractor Construction Schedule Toolkit located online at the address above.

**H. ACTIVITY CODES**

The Contractor shall use the activity codes specified in the MassDOT-Highway Division Contractor Construction Schedule Toolkit located online at the address above.

**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.

**SECTION 722 (Continued)**

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.
- 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. Refer to the Project Special Provisions for specific restrictions.
- 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. Refer to the Project Special Provisions for specific restrictions.
- 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: Refer to the Project Special Provisions for specific restrictions.
- Night-time paving and striping operations, traffic and temperature restrictions: Refer to the Project Special Provisions for specific 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.

**SECTION 722 (Continued)**

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.
8. For Type A Schedules, each month, the Contractor will be paid using the Cost-loaded CPM activities for Lump Sum payment items. This requirement supersedes any requirements elsewhere in this Contract regarding partial payments of schedule-of-values for all Lump Sum items.

**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

**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.

Except as stated elsewhere in this subsection, schedule submittals shall include each of the documents listed below, prepared in two formats, for distribution as follows:

- a. four (4) compact discs (CD); one (1) each for the Office of Project Controls and Performance Oversight (O-PC&PO), the Boston Construction Section Office, the District Construction Office and the Resident Engineer's Office. Additional copies shall be required if the work is performed in more than one district.
- b. two (2) hard copies plotted in color on 24" X 36" paper; one (1) copy each for the District Construction Office and the Resident Engineer's Office. No copies for the O-PC&PO and the Boston Construction Section Office. Additional copies shall be required if the work is performed in more than one district.

**SECTION 722 (Continued)****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;
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.

**SECTION 722 (Continued)****B. Bar Charts (Types A, B, C and D)**

One (1) time-scaled 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 time-scaled 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.

Bar Charts shall be printed in color and submitted on 11" X 17" paper or, if approved by the Engineer, as a .pdf file.

**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. The DASC 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>

The reports described in Subsections D, E and F below shall be submitted with all of the schedules listed in Subsection 722.20 - General:

**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.

For Unit Price pay items, in addition to the above, estimates to complete and 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 (Types B, C and D)**

A Projected Spending Report (PSR) shall be prepared and submitted in accordance with the instructions listed at the end of this section. 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. If the difference between the Contractor's monthly projections vs. the actual spending is greater than 10%, the Contractor's monthly spending projection shall be revised and resubmitted within fifteen (15) Calendar Days.

The Projected Spending Report (PSR) shall be depicted in a tabular format and printed in color on 11 x 17-sized paper or larger as approved by the Engineer. For additional instructions and a template for preparing the Projected Spending Report (PSR), refer to the Contractor's Construction Schedule Toolkit located on the MassDOT-Highway Division website at:

<https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit> or consult with the District Construction Scheduler.

**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 (Types A, B, C and D)**

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 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 as-built sequencing and as-built dates for completed and in-progress activities. As-built 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 fragment 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.

Except as otherwise designated by a Contract Modification, no Contract Progress Schedule that extends performance beyond the Contract Time and/or beyond any Contract Milestone shall be approved by the Engineer. The Contractor shall submit a Recovery Schedule if any Contract Progress Schedule/Monthly Update indicates a failure to meet the Contract Dates.

**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 bar chart 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.

**SECTION 722 (Continued)**

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.

Failure to submit Short-Term Construction Schedules every two (2) weeks may result in withholding of full or partial payments by the Engineer.

**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 three (3) Calendar Days 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 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 fourteen (14) 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 most efficiently demonstrate the schedule impacts 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 resource 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/Contract Progress Schedule.

**C. Recovery Schedules**

The Contractor shall promptly report to the Engineer all schedule delays during the prosecution of the Work. Except as otherwise designated by a Contract Modification, no Contract Progress Schedule that extends performance beyond the Contract Time and/or beyond any Contract Milestone shall be approved by the Engineer. The Contractor shall submit a Recovery Schedule within fourteen (14) Calendar Days of a Contract Progress Schedule submission that shows failure to meet the Contract Dates. This requirement is critical to the Department's ability to make informed decisions regarding Contract Time and costs.

**SECTION 722 (Continued)**

During the prosecution of the Work, should the Contractor's progress on a critical operation clearly not meet anticipated production, without cause by fault of the Department, or should a critical activity or series of activities not be staffed in accordance with the Contractor's approved Baseline Schedule resource planning, the Contractor shall be obligated to recover such delay. Recovery Schedules shall be prepared and submitted in accordance with Subsections 722.61 - Schedule Content and Preparation Requirements and 722.62 - Submittal Requirements within fourteen (14) Calendar Days of any of the cases listed above.

Recovery Schedules shall clearly indicate any proposed overtime hours, additional shifts, and the resources that are proposed to be incorporated in to the schedule. The Engineer shall have final discretion over the use of overtime hours and additional shifts and shall have the right to require that overtime hours and/or additional shifts be used to minimize the duration of Time Extensions, without additional compensation for any Contractor delays, if it is determined to be in the best interest of the Department to do so.

During the review of any Recovery Schedule, all Contract Progress Schedules shall continue to be required every month.

The Engineer may request that the Contractor prepare a Recovery Schedule to further mitigate any delays that are shown in an accepted TEA/Contract Progress Schedule.

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/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 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.

Changes represented in 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.

**SECTION 722 (Continued)****E. Disputes (Types A, B, C and D)**

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.

Any dispute concerning the acceptance of a schedule or any other question of fact arising under this subsection shall be determined by the Engineer. Pending resolution of any dispute, the last schedule accepted by the Engineer will remain the Contract Schedule of Record.

**COMPENSATION****722.80 Method of Measurement and Basis of Payment (Types A, B, C and D)**

The Special Provisions will specify the fixed-price amount to be paid to the Contractor for the Project Schedule requirements contained herein. Each bidder shall include this lump-sum, fixed-price bid item amount in his/her bid. Failure to do so may be grounds for the rejection of the bid.

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.

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.

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.

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:

$$\text{Monthly Payment} = \frac{\text{Remaining Fixed Price amount (80\% of Item 100.)}}{\text{Contract Duration in whole months} - 2 \text{ months}}$$

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.

**SECTION 722 (Continued)**

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. Late submittal of missed Contract Progress Monthly Updates will not result in recovery of the previously forfeited portion of the Schedule of Operations Fixed Price Payment Item.

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 withholding of full or partial payments by the Engineer.

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. Item 100. will be the basis for this Equitable Adjustment.

**722.82 Payment Items**

100. SCHEDULE OF OPERATIONS - FIXED PRICE \_\_\_\_\_ LUMP SUM

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**ITEM 102.511      TREE PROTECTION – ARMORING & PRUNING      EACH**

The work under this item shall conform to the relevant provisions of Subsection 771 of the Standard Specifications and shall be for furnishing and installing temporary tree trunk protection and for minor limb pruning or removal of lower tree limbs to prevent injury to the tree from construction equipment and activities.

Trunk armoring is for instances where construction activity (the use of heavy equipment) comes close enough to potentially damage the tree trunk or limbs. It is to be used where shown on the plans and as directed 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. Selected material shall be such that installation and removal will not damage the trunk.

Acceptable materials include 2x4 wood cladding with wire or metal strapping, or, for instances when duration of construction activities is less than three months, corrugated plastic pipe mounted with duct tape. Height of cladding shall be from base of tree (including root flare) to the bottom of the first branch, eight feet above the ground, or as required by the Engineer. Material and methods shall be approved by the Engineer.

Other materials or methods may be acceptable if approved by MassDOT Landscape Design.

**METHODS OF WORK**

Prior to construction activities, the Engineer, the Contractor, and the Town Tree Warden shall do a site inspection to determine whether any trees need to be protected. Final decision as to trees 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 replaced and maintained such that it is effective for as long as required and shall be removed immediately upon completion of work activities adjacent to trees.

Pruning of limbs shall conform to the techniques and standards of the most recent ANSI A300 standards.

**DAMAGES & PENALTIES**

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 obtain an Arborist. The Arborist shall be approved by MassDOT.

**ITEM 102.511** (Continued)

If, based on the recommendations 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, and/or watering, the damage will be repaired as soon as possible within the appropriate season for such work and according to industry standards.

If the Engineer determines that damages are irreparable, the Contractor shall pay for the damages in the amount of \$500.00 per diameter inch at breast height (DBH) per tree.

Additionally, if the Engineer determines that the damages are such that the tree is sufficiently compromised as to pose a future safety hazard, the tree shall be removed. Tree removal will include clean up of all wood parts, 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.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Item 102.511 will be measured and paid at the contract unit price per each. 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.

In the event of tree damage, cost of Arborist services, of remediation measures, and/or tree removal will be borne by the Contractor.

Payment under this item will be scheduled throughout the length of contract:

- 40% of value shall be paid upon installation of trunk armoring and completion of pruning work, if required.
- 60% shall be paid at the end of construction operations that would damage the tree and after protection materials have been removed and properly disposed of by the Contractor. In the event of repairable damage, payment shall be made after the completion of remediation measures.

In the event of irreparable damage due to lack of proper protective measures being taken there will be no compensation in addition to the \$500.00 per diameter inch penalty.

**ITEM 114.1****DEMOLITION OF SUPERSTRUCTURE OF  
BRIDGE NO. S-23-012****LUMP SUM**

The work to be done under this item shall conform to the relevant provisions of Subsection 112 of the Standard Specifications and the following:

The work shall be performed in two stages with half the bridge closed to all pedestrian and vehicular traffic at all times as shown on the Plans.

The Contractor is advised to conduct a field investigation prior to bidding. The Contractor shall verify all conditions and materials in the field and shall base his bid on his own findings without any additional compensation for variances from the plans or these special provisions regarding actual conditions for the items to be removed.

The work to be done under this item includes furnishing all labor and materials necessary to perform demolition of the entire bridge superstructure and as shown on the plans and explained herein. The demolition of the bridge includes, but is not limited to, removal and disposal of the hot mix asphalt pavement, concrete deck, steel beams, and safety curbs in their entirety. The work also includes saw cutting of existing bridge deck, full depth cut, to facilitate demolition at the stage construction joint.

Pollution prevention is mandatory, and all debris must be kept from entering the waterway. The Contractor shall install temporary protective shielding, used in conjunction with this demolition, that will be paid for under Item 994.01.

The work under this item includes the removal and satisfactory disposal of all existing superstructure materials unless noted otherwise. The existing steel roadway plates shall be removed and stacked as designated by the Engineer. Removal and disposal of the existing guardrail shall be paid for under Item 630.2, Highway Guard Removed and Discarded.

**SUBMITTALS**

The Contractor shall submit to the Engineer a complete description of the equipment and construction methods proposed for the demolition work. The requirements for equipment and all procedures utilized shall be in conformance with the intent of Subsection 960.61D, Erection, of the Standard Specifications. 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 approval of the method of demolition.

As a minimum, the following information shall be included in the submittal:

1. Plan showing the location of all roadways, utilities and other appurtenances in areas of demolition.
2. The location of cranes, if required to be used, both horizontally and vertically, and their operating radii.

**ITEM 114.1** (Continued)

3. Lifting equipment information, including rating data information shall include counterweights to be used and boom capability. Crane capacity shall be adequate for 125% of the total pick weight.
4. The type, size and arrangement of slings, shackles or other lifting and connecting devices, including relative technical data.
5. The order of lifts, repositioning of equipment and weights, and location and method of attaching deadman.
6. Detailed description of the sawcuts and tools required to accomplish the demolition at the stage construction joint, while maintaining and protecting the existing half of the structure to remain. Any damage to the existing structure to remain at the stage construction will be repaired as directed by the Engineer at the Contractor's own expense.
7. Location of equipment for collecting fine dust and liquid debris.

Prior to the start of work, the Contractor shall locate all utilities and shall submit to the Engineer and the utility companies his proposed method of protecting them during the demolition operations. Procedure submittal shall not serve to relieve the Contractor of his responsibility to protect all utilities from damage at all times. Any damage done to utilities by the Contractor shall be immediately repaired at his expense. Work under this Item may not commence until the Engineer has given approval.

**BASIS OF PAYMENT**

MassDOT does not guarantee or represent that the bridge materials will actually coincide with any descriptions contained herein or represented on plans. The Contractor must satisfy himself by his own investigation and research regarding all conditions and materials affecting the work to be done. Item 114.1 will be paid at the contract Lump Sum price for bridge to be demolished, which price shall include full compensation for all labor, equipment, materials, testing, coordination with others, field survey, sawcutting, engineering services, submittals, and all incidental costs required to complete the work as required by the Engineer. No additional compensation other than Lump Sum price bid for Item 114.1 shall be made if materials or work prove to be different than that inferred or described herein or shown on any plans.

All materials removed under Item 114.1 shall become the property of the Contractor and shall be removed from the job site. It is the responsibility of the Contractor to see that all the material is handled in compliance with all applicable Local, State, and Federal requirements. The proper removal and disposal or recycling of hazardous material shall be considered incidental to this Item and shall be in compliance with Subsection 961 of the Standard Specifications.

Miscellaneous removals and disposals that are not specifically listed for payment under another item shall be included in this item.



**ITEM 127.****CONCRETE EXCAVATION****CUBIC YARD**

The work to be done under this item shall conform to the relevant provisions of Subsection 120 of the Standard Specifications and the following:

The work shall be performed in two stages with half the bridge closed to all pedestrian and vehicular traffic at all times as shown on the Plans.

The Contractor is advised to conduct a field investigation prior to bidding. Contractor shall verify all conditions and materials in the field and shall base his bid on his own findings without any additional compensation for variances from the plans or these special provisions regarding actual conditions for the items to be removed.

The work to be done under this item includes furnishing all labor and materials necessary to perform demolition of the entire bridge substructure as shown on the plans. The demolition of the bridge substructure includes, but is not limited to, removal and disposal of abutments, bridge seat, backwalls and wingwalls in their entirety. The work will also include cutting of existing steel sheet piling, which is shown on the existing Bridge Plans, at the bottom of footing elevation or as required by the Engineer to facilitate the work. Saw cutting of existing gravity abutments to facilitate demolition at the stage construction joint is incidental to this Item. The additional work to sawcut and excavate at the stage the construction joint shall be included in the contract bid price for this Item.

Pollution prevention is mandatory, and all debris must be kept from entering the waterway. The Contractor shall install temporary protective shielding, used in conjunction with this demolition, that shall be paid for under Item 994.01.

All concrete materials removed shall become the property of the Contractor and shall be properly disposed of away from the work site. The work under this item includes the removal and satisfactory disposal of existing and substructure materials as shown on the plans.

The demolition of the concrete abutments and wingwalls will be completed in “dry” conditions utilizing control of water to redirect the flow of water during operations. Control of Water is paid for under Item 991.1.

**SUBMITTALS****Concrete Excavation**

The Contractor shall submit to the Engineer a complete description of the equipment and construction methods proposed for the demolition work. As a minimum, the following information shall be included in the submittal:

1. Plan showing the location of all roadways, utilities and other appurtenances in areas of demolition.
2. The description of the equipment and construction methods proposed for the demolition work.

**ITEM 127.** (Continued)

3. Detailed description of the sawcuts and tools required to accomplish the demolition at the stage construction joint, while maintaining and protecting the existing half of the structure to remain. Any damage or undermining to the existing structure to remain at the stage construction will be repaired as directed by the Engineer at the Contractor's own expense.
4. Location of equipment for collecting fine dust and liquid debris.

Prior to the start of work, the Contractor shall locate all utilities and shall submit to the Engineer and the utility companies his proposed method of protecting them during the demolition operations. Procedure submittal shall not serve to relieve the Contractor of his responsibility to protect all utilities from damage at all times. Any damage done to utilities by the Contractor shall be immediately repaired at his expense. Work under this Item may not commence until the Engineer has given approval.

**METHOD OF MEASUREMENT**

Item 127. Concrete Excavation will be measured for payment by the cubic yard, based on the limits shown on the Plans.

**BASIS OF PAYMENT**

Item 127. Concrete Excavation will be paid for at the contract unit price per cubic yard, which shall include all labor, materials, equipment, engineering services, submittals, sawcutting, and incidental costs required to complete the work.

**ITEM 140.****BRIDGE EXCAVATION****CUBIC YARD**

The work under this item shall conform to the relevant provisions of Subsection 140 of the Standard Specifications and the following:

**DESCRIPTION**

Bridge Excavation shall be limited to the excavation of:

- Material excavation required for the installation of the abutment footings, retaining wall footings, approach slabs, and modified rockfill. Payment is limited to a vertical plane 12 inches beyond the limits of the proposed abutment footings and wingwall footings.
- The horizontal limit of excavation is as shown on the Plans. If clay soils remain in sub-base, additional excavation will be required, and the final horizontal limit shall be determined by the Engineer.
- Additional material removed for the convenience of the Contractor shall be considered incidental to this item and the contractor's bid price shall include full compensation for all excavation required for the installation of the abutment footings, retaining wall footings, approach slabs, highway guardrail transitions and modified rockfill.
- The proposed footing and existing abutment footing share the same footprint. Excavation required to facilitate the work under Item 127. Concrete Excavation shall be considered as incidental to this Item.
- Additional material, removed for installation of modified rockfill to the limits shown on the Plans, shall be considered incidental to this item and the contractor's bid price shall include full compensation for all excavation required for the installation.
- No quantity adjustment will be considered for excavation outside of the pay limits as defined above.
- All debris from Bridge Excavation shall be captured and removed from the site and will not be allowed to enter environmentally sensitive areas as required under project permits. All materials shall be satisfactorily disposed of by the Contractor. All temporary protection shielding required for the safe performance of work shall be paid for under Item 994.01.

**SUBMITTAL**

The Contractor shall prepare and submit an Excavation Plan to the Engineer for review and approval.

The submittal shall include the method of excavation, equipment used and planned sequencing. Sequencing shall address installation of Item 990.11 Temporary Excavation Support and Item 991.1 Control of Water. The Contractor shall not proceed with excavation until the Engineer has given written acceptance of the plan.

**ITEM 156.5**

**CRUSHED STONE FOR FILTER BLANKET**

**CUBIC YARD**

The work under this Item shall conform to the relevant provisions of Subsection 150.68 of the Standard Specifications and the following:

The work shall include placing crushed stone for filter blanket to the limits shown on the Plans for use as a bedding/foundation element for modified rockfill at the wingwall toes. The crushed stone shall conform to Section M2.01.2 of the Standard Specifications. The required geotextile fabric is to be paid for under Item 698.4 Geotextile Fabric for Permanent Erosion Control.

The crushed stone shall be placed as shown in the details on the Plans and in conformance with the Standard Specifications.

**METHOD OF MEASUREMENT**

Item 156.5 Crushed Stone for Filter Blanket will be measured for payment by the Cubic Yard of crushed stone, complete in place.

**BASIS OF PAYMENT**

Item 156.5 Crushed Stone for Filter Blanket will be paid for at the Contract Unit Price per Cubic Yard, which price shall include all labor, tools, materials, equipment, and incidental costs required to complete the work.

**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, soils, sediments and/or groundwater may be contaminated. 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 sampling, analysis and characterization of potentially contaminated media, preparation 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 Massachusetts Contingency Plan (MCP). LSP hours related to the characterization and disposal of contaminated soil and/or sediment are incidental to the disposal items. An estimate of LSP services to be provided shall be submitted to the Engineer for approval before any LSP activity begins.

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 DEP shall be submitted for all work assignments listed for the LSP and environmental technicians.

The LSP shall evaluate soil and/or sediment with discoloration, odor, and presence of petroleum liquid or sheening 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 soil and/or sediment. Any enhanced management of contaminated soil to ensure proper stockpiling and storage is incidental to the LSP Services item. The LSP shall adequately characterize subsurface conditions prior to backfill in areas where contaminated material has been excavated. The Engineer shall approve the locations of the testing sites prior to the sampling.



**ITEM 180.03** (Continued)

Contaminated soil, sediment and/or groundwater shall be handled in accordance with all applicable state and federal statutes, regulations and policies. The LSP shall adequately characterize contaminated media for comparison to the requirements of the MCP. 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. The LSP shall maintain written records in a clear and concise format which tracks the excavation, stockpiling, analysis and reuse/disposal of all suspect contaminated soils, sediments and groundwater. These records shall be up-to-date and available to the Engineer on a bi-weekly basis. The LSP shall review and summarize the laboratory data from any analyses performed on contaminated media. A report shall be delivered to the Engineer outlining the material sampling methods, laboratory analysis results 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, penalties and enforcement requirements imposed by applicable regulatory agencies for failure to meet regulatory and contract timeframes. No compensation will be provided for such fines, penalties 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 Department before submittal to the DEP, except if an imminent hazard condition exists as defined in 309 CMR 4.03(4)(b).

**ITEM 180.03** (Continued)**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.

In order to maintain compliance with the MCP 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. 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), semivolatile 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. LSP hours related to soil/sediment disposal (disposal characterization, landfill acceptance, disposal package preparation, etc.) shall be incidental to disposal items.

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. Laboratory testing related to soil/sediment disposal (disposal characterization, landfill acceptance, disposal package preparation, etc.) shall be incidental to disposal items.

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.

<b><u>ITEM 181.11</u></b>	<b><u>DISPOSAL OF UNREGULATED SOIL</u></b>	<b><u>TON</u></b>
<b><u>ITEM 181.12</u></b>	<b><u>DISPOSAL OF REGULATED SOIL - IN-STATE FACILITY</u></b>	<b><u>TON</u></b>
<b><u>ITEM 181.13</u></b>	<b><u>DISPOSAL OF REGULATED SOIL - OUT-OF-STATE FACILITY</u></b>	<b><u>TON</u></b>
<b><u>ITEM 181.14</u></b>	<b><u>DISPOSAL OF HAZARDOUS WASTE</u></b>	<b><u>TON</u></b>

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.

**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.

**ITEMS 181.11 through 181.14** (Continued)

**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.

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.

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**ITEMS 181.11 through 181.14** (Continued)

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.

**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 penalties and/or for 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.

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**ITEMS 181.11 through 181.14** (Continued)

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.

## 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.

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**ITEMS 181.11 through 181.14** (Continued)

## 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.

**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.



**ITEMS 181.11 through 181.14** (Continued)

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.

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 184.1**

**DISPOSAL OF TREATED WOOD PRODUCTS**

**TON**

Work under this item shall include the removal and disposal of all treated existing wood product as required by the Engineer.

The timber components of the existing structure are suspected to be treated with creosote, pentachlorophenol and/or CCA. This item shall include all costs for sampling, laboratory testing, loading, transportation, and disposal of the treated wood. The Contractor is required to submit disposal manifests to the Engineer prior to the completion of the project. All aspects of this Item are to be completed in accordance with state and federal regulations.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Measurement and payment will be by the weight, in tons, of treated timber removed from the structure and subsequently accepted at a licensed facility. The work shall be considered full compensation for all labor, tools, equipment, materials, testing, loading, transportation, approvals, and permits necessary for the completion of the work.

**ITEM 628.26**

**CURVED TRANSITION TO BRIDGE RAIL**

**EACH**

The work under this Item shall conform to the relevant provisions of Subsection 601 of the Standard Specifications and the following:

The work shall consist of the construction of a curved transition to bridge rail as shown on the Plans.

The construction of this guardrail Item shall include assembly and erection of all components, parts, and materials complete at the intended locations.

**METHOD OF MEASUREMENT**

Item 628.26 Curved Transition to Bridge Rail will be measured for payment by each individual unit, complete in place. It is measured from the mid-span splice with the end treatment to end of the thrie beam terminal connector as shown in the the *2017 Construction Standard Details*, Dwg. 400.3.6.

**BASIS OF PAYMENT**

Item 628.26 Curved Transition to Bridge Rail will be paid for at the contract unit price each, which price shall include all labor, materials, equipment and incidental costs required to complete the work including to construct and install posts, offset blocks, panels, connecting hardware, thrie beam terminal connector and any other components shown on the Plans, in *2017 Construction Standard Details*, Dwg. 400.3.6. as applicable, or as required by the Engineer.

**ITEM 657.****TEMPORARY FENCE****FOOT**

Work under this item shall conform to the relevant provisions of Subsection 644 of the Standard Specifications and the following:

The work under this item consists of furnishing, installing, and final removal of 6-foot-high temporary chain link fence to separate construction activities from public access as shown on the plans or as required by the Engineer.

The temporary 6-foot-high chain link fence shall be placed around the work area to protect areas with excavations as required by the Engineer and shall meet the requirements of the Standard Specifications and the Construction Standards. The temporary fencing may be installed on top of the temporary concrete barrier wherever applicable.

All posts, including end, corner and intermediate brace posts, and all gates and gate posts, shall be incidental to Item 657. Gates shall be used at all locations that are to be opened on a regular basis. The materials need not be new and shall be in a condition suitable for the intended purpose. All materials shall have the Engineer's approval.

The Contractor shall be responsible for the maintenance of the fencing and for ensuring that the work area remains secure and inaccessible to the general public at all times. All such maintenance shall be incidental.

The Contractor shall submit a plan to the Engineer indicating the locations and the amount of Temporary Fence that he anticipates he will install for the project. The methods of installation(s) and fence detail(s) shall also be submitted for approval by the Engineer. The Contractor shall inspect the condition of the temporary fence on a daily basis. Temporary fence that is damaged shall be promptly replaced by the Contractor at no additional cost to the Department.

It may be necessary to remove sections of the Temporary Fence during construction. Any removing/resetting of the Temporary Fence by the Contractor to facilitate his/her operations or site access shall be done at no additional cost to the Department. Fence fabric shall be placed on the top of the post away from the work area. A top tension wire, rather than the pipe top rail, shall be used. The top edge of the fabric shall be finished with a "knuckled" salvage. The Temporary Fence shall not be removed until construction is completed, or as directed by the Engineer.

After all other construction activities are complete, but prior to final seeding, temporary fencing shall be removed and disposed offsite by the Contractor at no additional cost.

**METHOD OF MEASUREMENT**

Item 657. will be measured for payment by the Foot of temporary fence, complete in place.

**ITEM 657.** (Continued)

**BASIS OF PAYMENT**

Item 657. will be paid for at the Contract unit bid price per foot, which price shall include all labor, materials, equipment, and incidental costs required to complete the work.

No separate payment will be made for gates, end, corner and intermediate posts and foundations, maintenance, but all costs in connection therewith shall be included in the Contract unit price bid.

No separate payment will be made for removing and resetting the temporary fence for the purpose of gaining access to the construction work zone.

No separate payment will be made for removing, relocating, and resetting any temporary fence moved for the convenience of the Contractor.

Compensation for fencing attached to a barrier shall be the same as regular temporary fencing.

Any minor or short-term removing and resetting of temporary fence by the Contractor to perform construction operations shall be done at no additional cost to the Department.

**ITEM 657.5**

**TEMPORARY FENCE REMOVED AND RESET**

**FOOT**

The work under this Item shall conform the relevant provisions of Subsection 644 of the Standard Specifications and the following:

This work under this Item shall consist of removing and resetting the Temporary Fence installed under Item 657 as shown on the Plans, as required by the construction and staged construction operations and as required by the Engineer for channelization of traffic and/or work zone protection. All work shall be as detailed in the Contractor's submittal for Item 657 Temporary Fence or as directed by the Engineer.

**METHOD OF MEASUREMENT**

Item 657.5 will be measured for payment by the foot of temporary fence removed and reset.

**BASIS OF PAYMENT**

Item 657.5 will be paid for at the contract unit price per foot, which price shall include full compensation for all material, labor, tools, equipment, and incidental costs required the work, including the restoration of pavement surfaces (caused by the installation).

The Contractor will not be separately compensated for any work necessary to maintain or re-align units or replace damaged units.

No separate payment will be made for removing and resetting the temporary fence for the purpose of gaining access to the construction work zone.

No separate payment will be made for removing, relocating, and resetting any temporary fence moved for the convenience of the Contractor.

**ITEM 697.2****FLOATING SILT FENCE****FOOT**

The work under this item shall consist of furnishing and erecting floating silt fence turbidity barrier with steel posts to act as a silt barrier for work within Sevenmile River. The floating silt fence shall be installed prior to commencing any work in or above the river and shall be installed, removed, reset, extended, modified, etc. as necessary to complete the work while minimizing impacts to the environment.

The floating silt fence shall be placed in the river in reasonable conformity with the locations shown on the contract drawings and as required by the Engineer. The floating silt fence shall be secured on each side to contain any sediment. Submit catalog cut and Independent Laboratory test results for full compliance with the properties listed below for the Engineer's approval prior to application. The floating silt fence shall be in place and approved by the Engineer prior to any contract work that will interface with the river.

The Contractor shall maintain the floating silt fence in satisfactory working order until removed, including any necessary replacements of damaged or deteriorated sections, at no additional compensation. The floating silt fence in the Sevenmile River shall be maintained until all work within or above the Sevenmile River has been completed. Sediment deposited into the area enclosed by the floating silt fence shall be removed and lawfully disposed prior to relocating or removal of the floating silt fence barrier(s).

Installation procedures may be varied to comply with manufacturers recommended procedures with the approval of the Engineer and the MassDOT representative. If required, the Contractor shall submit alternate installation and/or staging procedures for approval.

**MATERIALS**

In-water Floating Silt Fence shall meet the following property specifications:

**Product Description:**

An oleophilic siltation curtain with flotation members, tension link in floatation section, a permeable curtain and a ballast chain enclosed in bottom pocket.

**Length:**

As required. Provide multiple sections when the length of the work area exceeds 30 feet.

**Draft:**

1 foot to 6 feet. The Contractor shall field verify draft requirements.

**Floatation Element:**

Cylindrical, internal closed cell foam.

**Net Buoyancy:**

8 in. dia. standard, 26.7 lb./ft. in fresh water.

**ITEM 697.2** (Continued)**Floatation Section Fabric:**

Fabric shall be impermeable 22 ounce per square yard PVC coated nylon or polyester in international orange or high visibility yellow.

**Floating Silt Curtain:**

Floating Silt Fence curtain fabric shall be permeable fabric selected from MassDOT QCML meeting or exceeding the following properties:

PROPERTY	MIN. REQUIREMENT	TEST
Weight	5.5 oz/yd <sup>2</sup>	
Tensile Strength	220 lbs.	ASTM D-4632
Elongation @ Break	15%	ASTM D-4632
Mullen Burst	470 psi	ASTM D-3786
Puncture Strength	100 lbs.	ASTM D-4833
Tear Strength	100 lbs.	ASTM D-4533
Abrasion Resistance	N/A	
EOS US Std. Sieve	#70	ASTM D-4751
Flow Rate	18 gal. /min. /S.F.	ASTM D-4491

**Tension Cables:**

5/16-inch PVC coated galvanized aircraft cable top tension enclosed in top portion of the floatation section. It shall secure to each end of connector of the curtain sections. Cable system shall be tamperproof.

**Ballast:**

5/16-inch 1.1 lbs/ft. or heavier if required, galvanized steel chain enclosed in bottom pocket of the entire length of floating silt fence.

**Section Connectors:**

Aluminum universal connectors on each end of floatation section. Below the connectors, the skirts shall be joined by polypropylene rope ties between the grommets on the two skirts. The ballast chains can be shackled.

**Intermediate Tensioning and Anchoring:**

Provide additional tensioning and anchoring in order to establish and maintain U shaped or other configuration indicated and to keep the curtain out of the work area and retain sediments within the work area (inside the floating silt fence barrier).

Steel posts shall be a minimum of 10 feet in length and 4 inches diameter galvanized fence post or other manufacturer approved supporting device approved by the Engineer.



**ITEM 697.2** (Continued)

**METHOD OF MEASUREMENT**

Item 697.2 will be measured for payment by the foot of floating silt fence installed, complete in place.

**BASIS OF PAYMENT**

Item 697.2 will be paid for at the contract unit price per foot, which price shall include all materials, labor, tools, equipment, and incidental costs required to complete the work.

The cost of maintenance, relocating, resetting, removal and disposal of the floating silt fence shall be included in the unit price bid. The unit price bid shall include all materials, labor, tools, and equipment incidental and necessary for the installation, relocation, removal, and disposal of floating silt fence.

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**ITEM 698.3      GEOTEXTILE FABRIC FOR SEPARATION      SQUARE YARD**

The work performed under this item shall consist of furnishing and installing geotextile fabric below the crushed stone for bridge foundations as shown on the Plans and as required by the Engineer.

**MATERIALS**

The geotextile fabric shall conform to the requirements of AASHTO M 288, Class 2, for fabric used for separation and must be on the MassDOT QCML. Construction and installation shall be in accordance with AASHTO M 288 including Appendix A and the following:

**CONSTRUCTION**

Atmospheric exposure of the geotextile fabric to the elements following lay down shall be a maximum of 14 days.

For seams that are sewn in the field, the Contractor shall provide at least a six-foot length of sample sewn seam for the approval of the Engineer before the geotextile fabric is installed. The seams sewn for sampling shall be sewn using the same type of equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross machine direction, samples of seams for both directions shall be provided. The seam assembly description shall be submitted by the Contractor along with the seam samples. This description shall include the seam type, stitch type, sewing thread, and stitch density. If the Contractor elects to sew seams instead of overlap, colored thread must be used.

Geotextile shall be placed in intimate contact with soils without wrinkles or folds, and shall be anchored on a smooth graded surface approved by the Engineer. The geotextile shall be placed in such a manner that placement of the overlaying materials will not excessively stretch or tear it.

Adjacent geotextile sheets shall be joined by either sewing or overlapping. At roll ends, overlapped seams shall overlap a minimum of 12 inches, except when placed under water, where they shall overlap a minimum of 3 feet. Adjacent rolls shall overlap a minimum of 12 inches.

Care shall be taken during installation to prevent damage to the geotextile as a result of the installation process. Should the geotextile be damaged, a geotextile patch shall be placed over the damaged area extending a minimum of 3 feet beyond the limits of the damage.

Placement of crushed stone for bridge foundations shall take place so as to avoid stretching and subsequent tearing of the geotextile fabric. Stone shall not be dropped from a height exceeding three feet.

Field monitoring shall be performed to verify that the stone placement does not damage the geotextile. Any geotextile damaged during backfill placement shall be replaced as required by the Engineer, at the Contractor's expense.

The Contractor shall take care not to allow more than two weeks of exposure to direct sunlight. Fabric rolls shall not be dropped more than two feet.

**ITEM 698.3** (Continued)

**METHOD OF MEASUREMENT**

Item 698.3 Geotextile fabric for separation will be measured for payment by the square yard, complete in place. The square yard measurements are based on the proposed crushed stone footprints. No additional compensation shall be provided for fabric to continue up the sides.

**BASIS OF PAYMENT**

Item 698.3 Geotextile fabric for separation will be paid for at the Contract unit price per square yard, which price shall include all labor, materials, equipment, and incidental costs required to complete the work.

Overlaps and fold-overs are considered incidental to the unit price and will not be measured separately for payment.

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**ITEM 698.4**                      **GEOTEXTILE FABRIC FOR PERMANENT**                      **SQUARE YARD**  
**EROSION CONTROL**

Work under this item shall consist of furnishing and installing geotextile fabric below the modified rockfill at embankments as shown on the Plans or as required by the Engineer.

**MATERIALS**

The geotextile fabric for permanent erosion control shall conform to Material Specification M9.50.0 Class I non-woven, shall be in accordance with AASHTO M 288 and shall be on the MassDOT Qualified Construction Materials List.

**CONSTRUCTION**

Atmospheric exposure of the geotextile fabric to the elements following lay down shall be a maximum of 14 days.

For seams that are sewn in the field, the Contractor shall provide at least a six-foot length of sample sewn seam for the approval of the Engineer before the geotextile fabric is installed. The seams sewn for sampling shall be sewn using the same type of equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross machine direction, samples of seams for both directions shall be provided. The seam assembly description shall be submitted by the Contractor along with the seam samples. This description shall include the seam type, stitch type, sewing thread, and stitch density. If the Contractor elects to sew seams instead of overlap, colored thread shall be used.

Geotextile shall be placed in intimate contact with soils without wrinkles or folds and shall be anchored on a smooth graded surface approved by the Engineer. The geotextile shall be placed in such a manner that placement of the overlaying materials will not excessively stretch or tear it.

Adjacent geotextile sheets shall be joined by either sewing or overlapping. At roll ends, overlapped seams shall overlap a minimum of 12 inches, except when placed under water, where they shall overlap a minimum of 3 feet. Adjacent rolls shall overlap a minimum of 12 inches.

Care shall be taken during installation to prevent damage to the geotextile as a result of the installation process. Should the geotextile be damaged, a geotextile patch shall be placed over the damaged area extending a minimum of 3 feet beyond the limits of the damage.

The modified rockfill placement shall begin at the toe of slope and proceed up the slope. Placement shall take place so as to avoid stretching and subsequent tearing of the geotextile. Stones shall not be dropped from a height exceeding 3 feet.

Field monitoring shall be performed to verify that the modified rockfill placement does not damage the geotextile. Any geotextile damaged during backfill placement shall be replaced as required by the Engineer, at the Contractor's expense.

The Contractor shall take care not to allow more than two weeks of exposure to direct sunlight. Fabric rolls shall not be dropped more than two feet.

**ITEM 698.4** (Continued)

**METHOD OF MEASUREMENT**

Item 698.4 Geotextile fabric for permanent erosion control will be measured for payment by the square yard, complete in place. No additional payment will be made for overlapping material.

**BASIS OF PAYMENT**

Item 698.4 Geotextile fabric for permanent erosion control will be paid for at the Contract unit price per square yard, which price shall include all labor, materials, equipment, and incidental costs required to complete the work.

Overlaps and fold-overs are considered incidental to the unit price and shall not be measured separately for cost.

**ITEM 740. ENGINEERS 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 and printer system meeting minimum 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
- 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 (RADF) (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.

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 751.765      COMPOST AND SEED OVER MODIFIED ROCK      CUBIC YARD**

**GENERAL**

The work under this Item shall conform to the relevant provisions of Subsections 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 Standard Specifications.

The Engineer shall approve the Contractor's equipment for application.



**ITEM 751.765** (Continued)

**Seed Mix**

Seed Mixes and Submittals shall be per the item(s) for the permanent seed mix. Mix shall be:

<b>765.451 Part Shade Roadside Mix</b>			<u>% PLS by</u>
	<u>Botanical Name</u>	<u>Common Name</u>	<u>Weight</u>
Grass			
	Festuca rubra	Creeping Red Fescue	25.70%
	Elymus virginicus	Virginia Wild Rye	24.00%
	Schizachyrium scoparium	Little Blue Stem	22.50%
	Panicum virgatum	Switch Grass	10.00%
	Panicum clandestinum 'Tioga'	Deer Tongue 'Tioga'	7.00%
	Carex vulpinoidea	Fox Sedge	2.00%
	Agrostis perennans	Upland Bentgrass	2.00%
	Juncus effusus	Soft Rush	0.20%
			93.40%
Herb/Forb			
	Chamaecrista fasciculata	Partridge Pea	3.00%
	Penstemon digitalis	Beard-tongue	1.00%
	Zizia aurea	Golden Alexanders	0.30%
	Desmodium canadense	Showy Tick Trefoil	0.30%
	Solidago bicolor	White Goldenrod	0.20%
	Solidago caesia	Woodland Goldenrod	0.20%
	Rudbeckia hirta-VT ecotype	Black-eyed Susan-VT ecotype	0.20%
	Aster novae-angliae	New England Aster	0.20%
	Solidago odora	Licorice Scented Goldenrod	0.20%
	Aster divaricatus	White Wood Aster	0.20%
	Heliopsis helianthoides	Ox-Eye Sunflower	0.20%
	Pycnanthemum tenuifolium	Slender Mountain Mint	0.20%
	Monarda fistulosa	Wild Bergamot	0.10%
	Eupatorium perfoliatum	Boneset	0.10%
	Aster lateriflorus	Calico Aster	0.10%
	Oenothera fruticosa var. fruticosa	Sundrops	0.10%
			6.60%
			<b>100.00%</b>
	<b>Seeding Rate: 15.0 lbs PLS/Acre</b>		

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**ITEM 751.765** (Continued)**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%.

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**ITEM 751.765** (Continued)**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.

**ITEM 751.765** (Continued)

**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.

Native Seed Mix shall be compensated at the bid price per the specified seed mix item by pound.

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

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**ITEM 765.21      ANNUAL COVER CROP FOR NATIVE SEEDING      POUND**

Work under this item shall conform to the relevant provisions of Subsection 765 of the Standard Specifications and the following.

**DESCRIPTION**

Work consists of furnishing and applying the appropriate annual grass to be seeded as a cover crop in conjunction with upland native seeding and at the rate specified herein.

A cover crop shall be used for following conditions:

- when specified under Application Rate for the permanent native upland seed mix
- for slopes 2:1 or steeper and an annual is not already specified as part of the permanent mix
- when seeding out of season and the native seed mix does not already specify an annual
- as required to prevent erosion until the permanent seed establishes.

A cover crop is not necessary for wetland seeding and is not typically necessary for soil stabilization when seeding in conjunction with a compost blanket application.

Annual rye (*Lolium multiflorum*) will not be accepted as an annual cover crop.

Using annual rye or exceeding the application rate such that a dense stand of annual grasses prevents germination of the native grasses will require mowing of annual grasses. In this instance, mowing of cover crop will be incidental to this item.

**Seed and Application Rate**

Add 30 pounds/acre of the following seed based on seeding season:

*Avena sativa* (Grain Oats):    1 January to 31 July  
*Cecale cereale* (Grain Rye):    1 August to 31 December

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Item 765.21 will be measured for payment by the pound of seed, complete in place.

Item 765.21 will be paid at the contract unit price per pound upon approval of seed bag tags or other documentation of correct application rate and species, and upon acceptance of a satisfactory stand of annual grasses three weeks following seeding.

Application and care of cover crop will be paid for separately under Item 765.635 Native Seeding and Establishment.

**ITEM 765.451****PART SHADE ROADSIDE MIX****POUND**

Work under this item shall consist of furnishing the mix(es) specified below in the required quantity.

**SUBMITTALS**

- 1) Pre-Verification of Seed Availability. Within 30 days after the Notice to Proceed, the Contractor shall submit to the Engineer the supplier's verification of availability of seed species in the required quantities and for the anticipated date of seeding. Verification shall be on the supplier's letterhead and notarized by the supplier's notary. Species not expected to be available should be noted and substitutions recommended.
- 2) Final Verification of Seed Availability. No earlier than 21 days prior to ordering, the Contractor shall submit to the Engineer the supplier's verification of availability of seed species and in the required quantities. Verification shall be on the supplier's letterhead and notarized by the supplier's notary. A copy of this submittal shall be forwarded to the MassDOT Landscape Design Section. Substitutions or changes in the mix at this time must be approved by MassDOT Landscape Design Section.
- 3) Seed Worksheet provided herein shall be submitted to the Engineer prior to ordering seed to determine the number of pounds of Pure Live Seed required.
- 4) Seed Tags. The contractor shall submit original seed tags from each bag of seed used on the project or ensure that each tag is photo documented by the Engineer while on the unopened bag.

Number of tags submitted must correspond to number of bags delivered.

Species listed on the seed tag shall match the Final Verification of Seed Availability (Submittal #2) unless approved otherwise. Tag must include: variety and species name; lot number; purity; percentage of inert matter; percentage of weeds, noxious seeds, and other crop seeds; germination, dormant or hard seed; total viability; origin of seed; germination test date, net weight, and name and address of seller. The origin of seed must be listed on the seed tag for all species in the mix to provide verification of original (generation 0) seed source. The smallest known geographic area (township, county, ecotype region, etc.) shall be listed. Ecotypes and cultivars shall be as close to Massachusetts as possible and appropriate to the site conditions.

A copy of this submittal shall be forwarded to the MassDOT Landscape Design Section.

- 5) Verification of Seed Delivery. Prior to payment, the Contractor shall submit the Seed Delivery Verification form contained within the contract or the Supplier's Verification on company letterhead or a bill of lading. Supplier verification must include all information requested on the Verification form within this contract. The bill of lading must include variety and species name, lot number, net weight shipped, date of sale, invoice, project or seeding location, and name and address of Supplier. All information must be filled in and complete for acceptance. Information must match the seed tags and quantity of seed used on the job. A copy of this submittal shall be forwarded to the MassDOT Landscape Design Section

**ITEM 765.451** (Continued)

- 6) Seed Sample. If requested or if seed is from a previously opened bag, the contractor may be asked to submit to the Engineer a sample of seed from the seed bag (1-2 cups) at the time of seeding.

**SEEDING SEASON**

The appropriate seeding seasons are:

Spring: April 1 - May 15

Fall: October 1 - December 1 for dormant seeding

**PERMANENT SEED MIX(ES)**

Calculating Pure Live Seed (PLS)

Quantities specified are PURE LIVE SEED. Greater quantities of ordered seed may be required to achieve actual specified seeding rates.

Pure Live Seed (PLS) is defined as a percentage calculated by multiplying the percent of pure seed by the percent of viable seed (total germination, hard seed, and dormant seed). For example:

If a seed label indicates 90% purity, 78% germination, 10% hard seed, and 2% dormancy, it is calculated to be  $90\% \times [78 + 10 + 2]\% = 81\%$  PLS.

Therefore, each pound of PLS would need  $1 \text{ pound} / 0.81 = 1.2$  pounds of seed with a 90% purity and 90% total germination

**ITEM 765.451** (Continued)

**Seed Mix(es)** shall be as specified below. Ecotypes and cultivars shall be as close to Massachusetts as possible and appropriate to the site conditions.

<b>765.451 Part Shade Roadside Mix</b>		<u>%PLS by Weight</u>
<u>Botanical Name</u>	<u>Common Name</u>	
<b>Grass</b>		
Festuca rubra	Creeping Red Fescue	25.70%
Elymus virginicus	Virginia Wild Rye	24.00%
Schizachyrium scoparium	Little Blue Stem	22.50%
Panicum virgatum	Switch Grass	10.00%
Panicum clandestinum 'Tioga'	Deer Tongue 'Tioga'	7.00%
Carex vulpinoidea	Fox Sedge	2.00%
Agrostis perennans	Upland Bentgrass	2.00%
Juncus effusus	Soft Rush	0.20%
		93.40%
<b>Herb/Forb</b>		
Chamaecrista fasciculata	Partridge Pea	3.00%
Penstemon digitalis	Beard-tongue	1.00%
Zizia aurea	Golden Alexanders	0.30%
Desmodium canadense	Showy Tick Trefoil	0.30%
Solidago bicolor	White Goldenrod	0.20%
Solidago caesia	Woodland Goldenrod	0.20%
	Black-eyed Susan-VT	
Rudbeckia hirta-VT ecotype	ecotype	0.20%
Aster novae-angliae	New England Aster	0.20%
Solidago odora	Licorice Scented Goldenrod	0.20%
Aster divaricatus	White Wood Aster	0.20%
Heliopsis helianthoides	Ox-Eye Sunflower	0.20%
Pycnanthemum tenuifolium	Slender Mountain Mint	0.20%
Monarda fistulosa	Wild Bergamot	0.10%
Eupatorium perfoliatum	Boneset	0.10%
Aster lateriflorus	Calico Aster	0.10%
Oenothera fruticosa var. fruticosa	Sundrops	0.10%
		6.60%
		<b>100.00%</b>



**ITEM 765.451** (Continued)

**Application Rate**

**Part Shade Roadside Mix:** 15.0 lbs PLS/acre. In addition, apply 30 pounds of cover crop (grain oats or grain rye) as appropriate to the season.

Any species substitutions shall be with a species having similar characteristics and function. Substitutions must be approved by MassDOT Landscape Design Section per the documentation submittal process.

**50% Increase Adjustment for Field Conditions**

Seeding under the following conditions requires a 50% increase in the permanent mix at the time of construction:

- Seeding out of season  
OR
- Seeding after Compost Blanket has been applied (unless already increased for out of season).

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Part Shade Roadside Mix will be measured for payment by the pound of Pure Live Seed delivered and complete in place.

Part Shade Roadside Mix will be paid at the contract unit price per pound of Pure Live Seed delivered upon approval of all Seed Submittal Documentation. Overseeding required to correct poor germination or establishment shall be incidental to the item.

Cover crop not included as part of the permanent mix composition will be paid for under Item 765.21, Annual Cover Crop for Native Seeding.

Application and care of native seed mix will be paid for separately under Item 735.635 Native Seeding and Establishment.

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**ITEM 765.635      NATIVE SEEDING AND ESTABLISHMENT      SQUARE YARD**

Work shall conform to the relevant provisions of Subsections 765 and 767 of the Standard Specifications and the following:

The work under this item shall consist of seeding, mowing, and other care to establish a stand of grass in the areas shown on the plans 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.

**QUALIFICATIONS**

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.

**SEEDING SEASON**

Seeding seasons for 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%.

Seeding season for cover crops shall be grain oats January 1 – July 31 and grain rye August 1 – December 1.

**MATERIAL AND SUBMITTALS**

**Seed Mixes and Submittals** shall be per the item(s) for permanent and annual (cover crop) seed mixes.

**Compost Blanket**, if used, shall meet the material and submittal requirements for that item.

**Hydromulch** shall be wood fiber or straw applied per the Standard Specifications and at the rates specified below and per the manufacturer.

A certified statement shall be furnished, prior to start of work, to the Engineer by the Contractor as to the number of pounds of hydromulch, tackifier, and seed, per 100 gallons of water and as applicable to products used. This statement should also specify the number of square yards of seeding that can be covered with the solution specified above.

**Fertilizer:** No fertilizers shall be applied.

**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.

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**ITEM 765.635** (Continued)**SEEDING**

Hand broadcast method shall be used for all areas smaller than half an acre and when specified on the plans for areas over half an acre.

Seeding shall occur within 72 hours of placement of loam and final grading or the Contractor shall propose a reasonable, alternative schedule that shall be approved by the Engineer.

**Surface Preparation**

No seeding or soil preparation shall be done if soils are muddy or dry and compacted. Bare soils shall be raked to remove large stiff clods, lumps, brush, roots, stumps, litter and other foreign matter. Ruts and depressions shall be filled with additional loam or compost and the soil shall be re-graded to a relatively smooth finish corresponding to the required grades.

When seeding over existing or compacted soil or soil that has sat bare for more than 30 days, surface will be prepared by tilling or raking to a minimum depth of 2 inches prior to seeding and prior to Compost Blanket application (when applied).

Surface preparation shall be compensated for under for loam placement or topsoil rehandled and spread as appropriate to the project.

Jute or coir mesh, when specified in the contract, shall be placed after seeding and per the Standard Specifications and the manufacturer's instruction.

Surface preparation shall be approved by the Engineer prior to seeding.

**Seeding over Various Substrates**

Loam: Seeding shall occur within 72 hours of loam placement to prevent loss of topsoil. Seed shall be manually broadcast for areas less than half an acre (each area, not cumulative area) and when specified on the plans. Broadcasting shall be immediately followed by hydromulching as specified below. When not specified on the plans, larger areas may be hydroseeded as specified below.

Compost Blanket: Compost Blanket shall be applied as specified under that item. Seed should be hand broadcast at the same time as compost application to ensure a thin cover of compost over seed.

When seeding is done after application of Compost Blanket the rate shall be increased by 50%. If the Compost Blanket is applied after December 1, seed shall be broadcast or hydroseeding over the compost in the Spring and the rate increased by 50% specified under Seed Application.

Compost Mulch over Modified Rock: Compost Mulch and seed shall be applied as specified under that item. No hydromulch is required.

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**ITEM 765.635** (Continued)**Cover Crop**

Cover crop shall be used when seeding out of season, when specified with the permanent native seed mix under that item, and as required to prevent erosion until the permanent seed establishes.

A cover crop should not be used with a steep slope mix or other permanent mix which already contains either cereal rye or oats in the composition of the mix. A cover crop is not necessary for wetland seeding and is not typically necessary for soil stabilization when seeding in conjunction with a compost blanket application.

**Seed Application**

All seed shall be mulched as specified herein.

Seed application shall be by broadcast seeding or by hydroseeding as described below.

**Broadcast Seeding**

Seed shall be broadcast spread using a cyclone or whirlwind seeder or hand broadcast. Small or light-seeded species such as bluestem may be mixed with approved filler to achieve an even distribution. Seed shall not be broadcast when wind velocities are greater than 15 mph.

Broadcast seeding shall be undertaken in two separate passes at ninety degrees to each other. One-half the seeding rate shall be applied in each direction (horizontally and vertically). To ensure seed to soil contact with broadcasting of seed, seeding shall be followed by rolling or tracking with equipment approved by the Engineer.

Broadcast seed shall be mulched with weed-free straw mulch unless seeding is done as part of Compost Blanket in which case it shall be as specified above under seeding with Compost Blanket application. Hydromulching shall be as specified under Hydromulching.

**Hydroseeding and Hydromulching**

Hydroseed and mulching shall be per the manufacturer's directions and as follows.

Hydroseeding shall only be used for sites over half an acre in size or with permission of the Engineer.

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.

A 2-step process shall be used for seeding in conjunction with hydromulch. Seed shall be applied with 500 lbs/acre of hydromulch in the first pass. A second pass with 1,000 lbs/ acre of hydromulch shall be applied in a second pass. Each pass shall be applied in a different direction.

**ITEM 765.635** (Continued)

Once the seed has been added to the tank mixture a one-hour time limit is set for spreading the mixture on the soil. Once the one hour has passed the excess mixture must be discarded.

For broadcast seeding, hydromulch shall be applied immediately following seeding at a rate of 1,000 lbs/acre. Tank shall be cleaned from any previous hydroseeding.

**CARE DURING GERMINATION AND ESTABLISHMENT**

Contractor shall care for seeded areas as necessary for successful germination. Care will include watering and weed control as necessary to achieve establishment of the specified seeded species after one growing season as specified below.

The contractor shall maintain the stand of grasses to ensure healthy growth of the seeded species. Work shall include mowing or weed-whacking for weed control, watering if necessary, and removal of invasive plants.

Watering shall be sufficient to achieve soil moisture to a depth of 2 inches or more and such moisture is uniform. Method of watering shall not erode or damage soil or grassed surfaces.

General Weed Control: Unless otherwise directed, mowing shall be as specified under Mowing for Weed Control for seed establishment. Weeds shall be mowed prior to weeds setting seed (by the end of July unless otherwise approved).

Control of Invasive and Aggressive Weeds: Invasive and aggressive weeds, including but not limited to mugwort, ragweed, knapweed, foxtail, crabgrass, and chicory must be cut or treated prior to going to seed. Herbicide treatment must be coordinated with MassDOT. Undesired species (such as chicory) introduced due to use of incorrect seed mix shall be removed at the Contractor's expense.

**MOWING FOR WEED CONTROL**

Mowing for weed control shall be completed after weeds have sprouted and show leaf and bud growth, but prior to setting seed, generally between July 7th and August 1st, unless directed otherwise by the MassDOT Landscape Architect and the Engineer.

Mowing height shall be as needed for weed control, generally to a height of 8 inches and not below 4 inches, unless directed otherwise. Mowing shall be with a brush hog mower or string trimmer other approved equipment. Conventional lawn mowers which cannot achieve the appropriate cut shall not be used.

The Contractor shall give 48-hour notice prior to mowing work. Mowing shall only occur in dry sunny weather. Litter pickup should occur prior to mowing in all areas. If required, cut grass shall be raked and removed. Litter pickup and raking and removal of grass shall be incidental to the work.

Mowing equipment shall be approved by the Engineer prior to work.

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**ITEM 765.635** (Continued)**OVER-SEEDING**

Areas of bare ground greater than 2-3 feet in diameter shall be over-seeded with the specified mix during the appropriate season for seeding. Where required for overseeding mowing shall be as close to the soil as possible. Soil that is compacted shall be raked or otherwise roughened prior to over-seeding.

Over-seeding rates and methods shall those specified above under Materials and Methods. Following over-seeding, soil shall be lightly tamped to ensure seed to soil contact and areas shall be mulched with straw mulch and watered with a fine mist to moisten soil to a depth of at least 2 inches.

Over-seeding, mulch, watering, and all work for over-seeding shall be incidental.

**DETERMINING SATISFACTORY GRASS ESTABLISHMENT**

A well-established stand of the specified seeded species as determined by the Engineer and the MassDOT Landscape Architect will be required for Final Acceptance. The expectation is that an acceptable number and variety of the desired permanent seeded species (not the cover crop) will be visible. Generally:

- A minimum of 75% coverage by the specified permanent seeded species after one growing season. Of that percentage, generally, depending on the mix species:
  - At least 3 types of permanent seeded grass species shall be visible.
  - At least 3 species of wildflowers shall be visible.
- There will be no significant gaps or bare soil (generally 2-3 feet in diameter or greater).
- There will be no more than 25% coverage by weed species.
- All soil shall be stabilized and there shall be no channeling or erosion.
- 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 (i.e., clover) due to failure to clean the hydroseeding tank or using incorrect mix.

Invasive and aggressive weeds (such as mugwort, ragweed, knapweed, and chicory) must be cut or treated prior to going to seed for Interim Acceptance. Herbicide treatment must be coordinated with MassDOT.

A warm-season grass mix with perennials will not have uniform growth. A uniform stand of grass may indicate use of an incorrect mix.

**ITEM 765.635 (Continued)**

**ACCEPTANCE OF SEEDING AND ESTABLISHMENT WORK**

Conditional Acceptance shall be based on proper application of seed as specified herein.

Interim Acceptance of Care. Seeding will be inspected by mid-July to assess germination and Establishment conditions as described above. When necessary for Interim Acceptance, areas shall be mowed prior to weed species producing seed and as specified above under Weed Control. Areas requiring weed control that are not mowed prior to weed seed dispersal will not be approved for Interim Acceptance. Seeding that shows good germination and is determined by the Engineer and Landscape Architect to not require weed control at time of inspection shall be accepted for Interim Acceptance payment.

Final Acceptance of 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. All remediation shall be at the contractor's expense.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Native Seeding and Establishment will be measured for payment by the square yard, complete in place.

Native Seeding and Establishment will be paid at the Contract unit price by the square yard upon Conditional, Interim, and Final Acceptances as described above. This price shall include all submittals, seeding, rolling to ensure seed-to-soil contact, weed control other than mowing, water, over-seeding, labor, materials, equipment, and all incidental costs required to complete the work of establishing a satisfactory stand of grass.

Native seed and cover crop mixes shall be compensated under the respective items.

Site preparation, including raking, tilling, removal of debris and stones, and other work to the prepare site for seeding shall be compensated under loam placement or topsoil rehandled and spread as relevant to the project. If used, Compost Blanket shall be compensated under the respective item.

Mowing for weed control will be incidental to this item.

Schedule of payment shall be as follows:

30% upon Conditional Acceptance

20% upon Interim Acceptance of Care, except this amount will be reduced to zero and final payment will be reduced accordingly when areas requiring weed control are not mowed as specified in the Interim Acceptance criteria.

50% upon Final Acceptance of Establishment

**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.



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**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.

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**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 damaged by construction activities shall be repaired or replaced as directed by the Engineer at the Contractor's expense.

**ITEM 799.****MUSSEL TRANSLOCATION****LUMP SUM**

The work under this Item shall include Mussel Sweeps and Translocation in accordance with NHESP Guidelines and the submittal approved by the Wildlife and Endangered Species Unit (David Paulson, 857-262-3378, david.j.paulson@dot.state.ma.us) and NHESP.

**HISTORY**

As part of the planning process for this bridge construction project a freshwater mussel survey in the Sevenmile River was conducted by Biodrawiversity LLC, Leverett MA. The results of their survey indicated targeted species were found, therefore preconstruction relocation is required.

**SUBMITTAL**

The Contractor shall submit a Mussel Sweeps and Translocation Plan to the MassDOT Wildlife and Endangered Species Unit (David Paulson, 857-262-3378, david.j.paulson@dot.state.ma.us) for review before sending it to NHESP for approval. The submittal shall contain location plans and procedures for finding and relocating the mussels. The following is a draft relocation plan.

**DRAFT PLAN**

Mussel sweeps and translocations will be conducted in accordance with *NHESP Endangered Species Translocation Guidelines: Freshwater Mussels. Strophitus undulatus* (creeper) is the only target (state-listed) mussel species in the project area.

Translocation will be conducted within the construction footprint, a 50-meter downstream buffer, and a 25-meter upstream buffer.

Translocation can be done anytime from early May to late September, only during the following conditions: water temperature >60.0F, high water clarity, normal river flows (i.e., average or below-average discharge), and fair weather.

Biologists will conduct a visual and tactile search throughout the survey area. Visual searches will be conducted through the entire area. Tactile searches will focus on areas near where *S. undulatus* are found and where juvenile habitat exists; this will entail sweeping/fanning fine sediments, using fingertips to gently rake the bottom, and excavating within quadrats.

A minimum of 50 0.25m<sup>2</sup> quadrats will be excavated to a depth of 10cm and washed through a 5-mm sieve to detect buried mussels. Mussel counts will be recorded separately for visual surveys and quadrats (surface vs. buried).

*S. undulatus* will be gathered and held underwater in enclosures during the collection process. If 10 or more *S. undulatus* are found, each mussel will be tagged with a durable plastic tag affixed with super glue, measured, and photographed. If fewer than 10 are found, they will not be tagged, nor will follow-up monitoring be required.

**ITEM 799.** (Continued)

*S. undulatus* will be transported to a translocation site. They will be carefully placed near each other in the streambed. If 10 or more *S. undulatus* were found, then biologists will install permanent markers on the streambed to facilitate finding these mussels during follow-up monitoring.

Tagged mussels will be checked for survival and movement one month and one year following translocation. Tag numbers, mortality, and any movement outside of the translocation area will be recorded during the 1-month survey, and the same information along with shell lengths and conditions of all tagged mussels will be recorded during the 1-year survey.

A written report will be prepared according to the standards outlined in the NHESP Endangered Species Translocation Guidelines: Freshwater Mussels and submitted to the Wildlife and Endangered Species Unit (David Paulson, 857-262-3378, david.j.paulson@dot.state.ma.us) for review before sending to NHESP.

**BASIS OF PAYMENT**

Item 799. will be paid for at the contract unit price, lump sum, which shall include all work detailed above and contained in the approved submittal. Submittal preparation, and required revisions as stated by the Engineer are considered incidental to this Item.

Payment of eighty-five (85) % of the contract price shall be made upon acceptance of the written report submitted after the one-month survey. Payment of the final fifteen (15) % of the contract price shall be paid upon acceptance of the written report submitted after the one-year survey.

**ITEM 816.811****TEMPORARY TRAFFIC CONTROL SIGNAL****DAY**

Work under this Item shall conform to the relevant provisions of Section 800 of the Standard Specifications and supplemented as follows:

The work consists of furnishing and installing portable temporary traffic control signals, complete and ready for operation, as shown on the Plans. Each temporary traffic control signal must be able to communicate with the others to coordinate and maintain one-way alternating traffic on North Spencer Road. Also, controlled access to North Spencer Road from Hastings Road is included for Stage I only. This stage must include an operating system that includes a conflict monitoring system that conforms to NEMA TS-5 standards and is capable of operating in a fixed-time, traffic actuated, or manual control mode. The work includes furnishing, installing, maintenance, and operation of temporary traffic control signal equipment, including batteries, battery chargers, solar panel, and providing all incidental materials necessary for operating and controlling the temporary traffic control signals, as shown on the Plans and specified for the duration of construction period, at the locations shown on the Plans.

**MATERIALS**

All temporary traffic control signal equipment shall meet and operate in conformance with the latest MUTCD standards.

The temporary traffic signals shall be portable traffic signals (PTS) and shall be trailer mounted units. Each unit shall be self-contained and consist of two signal heads per trailer. One signal head shall be mounted on an overhead mast arm capable of extending over the travel lane. The other signal shall be mounted on a vertical upright mast.

**Signal Head**

The PTS trailer shall be capable of accommodating a vertical upright mast and a horizontal mast arm. The overhead signal shall provide a minimum clearance of 17 feet measured from the bottom of the signal head to the road surface.

**Wind Load**

The trailer and all mounted equipment shall conform to the wind load requirements (90 mph minimum) as described in AASHTO Standard Specifications for Highway Signs, Luminaires and Traffic Signals 6th edition.

**Transport**

PTS trailers shall be manufactured to accommodate the option of transporting two signal trailers with one vehicle. The PTS trailer shall be equipped in such a manner as to provide legal transport on the public highway system. Each signal trailer shall be equipped with four stabilizing/leveling jacks, one on each corner of the trailer.

**Signal Heads / Display Requirements**

The PTS shall meet the physical display and operational requirements of conventional traffic signals as specified in Part IV of the Manual on Uniform Traffic Control Devices (MUTCD).

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**ITEM 816.811** (Continued)

Signal Heads shall have three 12-inch LED indications, conforming to ITE Specification “Vehicle Traffic Control Signal Heads” and NEMA Standards TS1 and TS2. Signal heads shall be equipped with visors which extend beyond the signal head a minimum of 10 inches. The signal heads shall have the ability to accommodate back plates and rotate horizontally 180°. The overhead signal shall have a minimum clearance height of 17 feet measured from the bottom of the green indication to the road surface. The lower signal head shall be mounted to a vertical upright mast at a minimum height of eight (8) feet measured from the bottom of the green indication to the road surface.

**Power Requirements**

Each PTS Trailer shall be equipped with batteries sufficient to operate the signal for a minimum of 30 days @ 72° without charging. The charging system shall include 440 watts (minimum) of solar collection capability and an onboard battery charger capable of being used with a 120V AC power source. The system shall also include an onboard monitoring system capable of regulating and providing a visual display of the battery voltage and solar input. Service connections will be provided to hardwire the traffic control signals as shown on the plans. The Contractor shall notify the respective utility company immediately following the Notice to Proceed from MassDOT to generate a Work Order for any service connections associated with the temporary traffic signal.

**Actuation Requirements**

The PTS systems shall be available with traffic actuation capabilities. The PTS system shall operate with video detection for actuation purposes. A monitor shall be provided in the cabinet to show the video detection zones and allow modification of video detection zones.

The video detectors shall be mounted “forward looking” on the PTS trailer. The mounting assemblies shall incorporate a ball-joint, or other approved mechanism, which can be tilted in both axes, then locked into place, to provide the optimum area of coverage. The Contractor shall install the detector unit at the height of 17 - 20 feet above the road surface so that the masking of vehicles is minimized and that all detection zones are contained within the specified elevation angle as suggested by the manufacturer.

**Default Requirements**

PTS systems shall have the capability of reverting to a red, red flash or yellow flash mode upon system default. The default setting shall be red flash or as dictated by the Engineer.

When the traffic signal installation malfunctions or switches over into flashing operation, the control unit shall immediately alert the Contractor's designee and the Town of Spencer Police Department by automatically placing a call, sending a pre-programmed SMS message and an email to the designated phone number(s).

The PTS system repairs shall be the responsibility of the Contractor and shall be rendered in a manner that will return the PTS to full operating condition in the most expeditious manner.

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**ITEM 816.811** (Continued)**Backplates**

Backplates shall be provided on all signal heads. Backplates shall be aluminum with a louvered profile. Backplates shall have a five (5) inch border width and a dull flat black color with a 3-inch retroreflective yellow border.

**LED Vehicle Signal Modules**

The LED module shall be an approved item from MassDOT Highway Division's Traffic Control Devices Approved Equipment List.

**Emergency Vehicle Preemption**

Optically actuated emergency preemption equipment shall be installed for local control of the signals during the passing of appropriately equipped emergency vehicles through intersections.

The Contractor's attention is drawn to the fact that preemption equipment provided and installed shall be comparable with existing emergency vehicles operated by the Town of Spencer.

Temporary Traffic Signal Plans illustrate the proposed location for the temporary emergency preemption receivers and pre-empt control of the intersection.

The emergency vehicle preemption control system shall consist of a data-encoded phase selector to be installed within the traffic control cabinet. This unit will serve to validate, identify, classify and record the signal from the optical detectors located on support structures at the locations shown on the plans. Upon receiving a valid signal from the detector, the phase selector shall generate a preempt call to the controller initiating a preemption operation as shown on the plans.

The optical detectors shall be single input, single output units used to control one approach. A minimum of two optical detectors shall be supplied unless otherwise noted on the plans.

The Contractor shall install confirmation strobes at the traffic signal location as shown on the plans.

The confirmation strobe shall serve to validate to the driver of the emergency vehicle that the traffic signal has recognized the preemption call and will initiate the proper preemption sequence. The confirmation strobe shall have a clear/white lens.

The Contractor shall be responsible for the orientation of the optical detectors and all other work necessary to provide a complete and operating emergency vehicle preemption system.

The Contractor may be required to field adjust the location of the optical detectors for optimum line of sight detection in the presence of the Engineer to properly detect preemption calls from approaching vehicles.



**ITEM 816.811** (Continued)

**METHOD OF MEASUREMENT**

Item 816.811 will be measured for payment by the unit day. A unit day shall be defined as every day that the temporary traffic control signal is operational on the worksite for each signal used in the set up (ie. Signal Day).

**BASIS OF PAYMENT**

Item 816.811 will be paid for at the contract bid price per day. The price is full compensation for the temporary traffic control signal which includes all labor, materials, equipment, programming, relocating, replacing parts, batteries, fuel, oil, submittals, engineering services, and all incidental costs required to install and maintain the temporary traffic control signals as described herein and as shown on the Plans.

All work performed and materials furnished in accordance with this Item to ensure the installation, maintenance and removal of the electric service for the temporary traffic signal shall be incidental to this item and will be paid under this Item at no additional cost.

**ITEM 828.06**

**GROUND MOUNTED SIGN PANEL -  
REMOVED AND STACKED**

**EACH**

The work under this Item shall conform the relevant provisions of Subsection 828 of the Standard Specifications and the following:

Work to be done under this item shall include the dismantling, removal, and stacking of the existing signs at the locations indicated as “R&S” on the plans or as required by the Engineer for pickup by the municipality. If the Town does not want the signs, the Contractor shall remove and discard the sign panels at no additional cost.

The work of this item shall include excavating the existing foundations to a depth of 12 inches below finished grade when located off the roadway, or to a depth of 36 inches below finished grade when located in the roadway.

The Contractor shall backfill and compact the hole with gravel, and the existing surfaces restored or replaced in kind.

**METHOD OF MEASUREMENT**

Item 828.06 will be measured for payment by the each, for each sign panel removed and stacked or discarded as required by the Engineer.

**BASIS OF PAYMENT**

Item 828.06 will be paid for at the contract unit price bid per each, which price shall include all labor, materials, equipment, and incidental costs required to complete the work.

No separate payment will be made for the excavation, removal and disposal of sign panel supports and foundations, the gravel backfill and surface restoration, but all costs in connection therewith shall be included in the unit price bid.

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**ITEM 853.21      TEMPORARY BARRIER REMOVED AND RESET      FOOT**

Work under this item shall conform to the relevant provisions of Subsection 850 and shall consist of removing, transporting and resetting temporary barrier systems and limited deflection temporary barrier systems from alignments established along the roadway to new alignments in accordance with the details shown on the plans, as required by the construction and staged construction operations and as required by the Engineer for the channelization of traffic and/or work zone protection.

The work shall also include furnishing and installing all hardware and associated materials per the details and/or manufacturer's specifications. The work shall also include necessary patches and repairs caused by the temporary barrier system to damaged pavement surfaces or any adjacent longitudinal barrier once the system has been removed.

Temporary barrier systems and limited deflection temporary barrier systems shall be removed from existing locations and reset in accordance to the construction methods stated in the respective barrier items.

Damage to the pavement surface or adjacent permanent barriers caused by removing or resetting temporary barrier shall be repaired as directed by the Engineer at the Contractor's expense.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Item 853.21 will be measured and paid by the foot, in place which shall provide full compensation for removing, relocating, resetting, realigning, and transporting maintaining the temporary barrier system and/or limited deflection temporary barrier system. The Contractor will be paid for this item each time the barrier is relocated either to a new work zone, to off-season storage, or back to the project from storage. The Contractor will not be separately compensated for any work necessary to maintain or re-align units or replace damaged units. No payment will be made for removing and resetting barriers for the purpose of gaining access to the construction work zone. No payment will be made for removing, relocating and resetting any barriers moved for the convenience of the Contractor.

For temporary barrier systems that require anchorage systems, the cost of furnishing, installing and removing the anchorage and hardware and the restoration of pavement surfaces or adjacent permanent barrier systems to facilitate anchorage shall be considered incidental to the cost of this Item.

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**ITEM 853.33 TEMPORARY BARRIER - LIMITED DEFLECTION (TL-3) FOOT**

The work under this Item shall conform the relevant provisions of Subsection 850 of the Standard Specifications and the following:

**DESCRIPTION**

The Contractor shall furnish, install, maintain, and remove a MASH tested, TL-3, Temporary Barrier-Limited Deflection, which is required for protection of motorists, workers and for maintenance of traffic. The Temporary Barrier shall be listed on the Qualified Traffic Control Equipment List. The Temporary Barrier system shall have a maximum dynamic deflection of 11 inches or less. Placement of the Temporary Barrier system must accommodate the required lane widths on the bridge as specified on the stage construction plans. The barrier system shall be connected to the bridge and to the asphalt per the manufacturer's recommendations and extend longitudinally the required distance to ensure the safety of motorists. The Contractor shall ensure that installing the barrier on the bridge will not damage the precast 3-sided box units. The use of threaded inserts in the precast concrete is highly encouraged. Any damage shall be repaired as directed by the Engineer, as part of the work under this Item. Field testing may be required, at the Engineer's request, to verify proper installation and MASH compliance, based on barrier proposed by the Contractor and the Manufacturer's recommendations. Any costs associated with this verification process are considered incidental to this Item.

The barriers shall have delineators attached. The delineators are considered incidental to the Item. They shall be single units, with yellow lenses on both sides, placed 6 inches below the top and on the traffic side of the barrier at 10 feet on center.

The delineators shall be the type designed expressly for this type of attachment and may be made entirely out of plastic.

**SUBMITTAL**

Complete plans shall be prepared by the Contractor. They shall show the horizontal and longitudinal extents of the temporary barrier system, the sizes and dimensions of the components of the system, its proposed method of connection to existing bridge deck, concrete 3-sided box units and asphalt, its location of attachment to the proposed structure, construction notes, and any other necessary measures required to allow for the proposed construction. The submittal shall contain all relevant product data documenting the MASH (TL-3) compliance of the system.

Prior to installation, the submittal shall be sent to the Engineer for his review, acceptance, and as evidence that the requirements of these provisions have been fulfilled. Furnishing such plans and data shall not relieve the Contractor of sole responsibility for safety of the public, personnel, equipment, and structures, as well as successful project completion.

**ITEM 853.33** (Continued)

**METHOD OF MEASUREMENT**

Item 853.33 Temporary Barrier-Limited Deflection (TL-3) will be measured for payment by the foot measured along the top of the barrier.

**BASIS OF PAYMENT**

Item 853.33 Temporary Barrier-Limited Deflection (TL-3) will be paid at the contract unit price per foot. The price shall include full compensation for all material, labor, tools, equipment, and incidental costs required for the proper installation of the barrier, as approved. Incidentals shall include, but are not limited to, submittal preparation, restoration of pavement surfaces and repair of damage to concrete three-sided box units caused by the installation.

**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 LWCS.
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.

**ITEM 859.1** (Continued)

**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.

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<b><u>ITEM 866.206</u></b>	<b><u>6 INCH REFLECTORIZED WHITE LINE (POLYUREA) (RECESSED)</u></b>	<b><u>FOOT</u></b>
<b><u>ITEM 866.212</u></b>	<b><u>12 INCH REFLECTORIZED WHITE LINE (POLYUREA) (RECESSED)</u></b>	<b><u>FOOT</u></b>
<b><u>ITEM 867.206</u></b>	<b><u>6 INCH REFLECTORIZED YELLOW LINE (POLYUREA) (RECESSED)</u></b>	<b><u>FOOT</u></b>

Work to be completed under these items shall conform to the relevant provisions of Subsection 860 of the Standard Specifications and the following:

Work shall consist of grooving a slot in the pavement surface and the furnishing and installation of reflectorized polyurea pavement markings.

### **MATERIALS**

Reflectorized polyurea pavement markings shall consist of a liquid binder, first drop beads or elements to provide dry and wet retroreflectivity, and second drop glass beads to improve the durability of the pavement marking, reduce track-free times, and provide supplementary dry retroreflectivity.

The Contractor shall use one of the following binders and first drop beads or elements, or approved equivalents:

1. 3M™ Liquid Pavement Marking Series 5000 with 3M™ All Weather Series 90 elements;
2. Epoplex GLOMARC® 90 with Potters VISIMAX® Glass Bead System; or
3. SWARCO MFUA-12 with SWARCO MEGALUX-BEADS®.

Combination of other binder and first drop bead or element series may only be used at the approval of the Engineer.

Second drop beads shall be manufactured from glass of a composition that is highly resistant to traffic wear and to the effects of weathering. If coating is required to meet the performance requirements, the second drop beads shall be coated to ensure satisfactory embedment and adhesion. Second drop beads retained on a No. 40 U.S. Standard Mesh Sieve shall have a minimum crush strength of 30 lbs. when tested in accordance with ASTM D1213.

Second drop beads shall have a minimum refractive index of 1.51 when tested in accordance with AASHTO M247.

Second drop beads passing the No. 30 sieve shall have a minimum of 75 percent true spheres when tested in accordance with ASTM D1155. All second drop beads retained on the No. 20 and No. 30 sieves shall have a minimum of 80 percent true spheres as determined by ASTM D1155.

Second drop beads shall meet the following gradation requirements when tested in accordance with ASTM D1214:



**ITEMS 866.206, 866.212, and 867.206 (Continued)**

U.S. Standard Sieve Number	Percent Retained
20	3-10
30	15-35
50	45-75
70	0-10
Pan	0-5

**CONSTRUCTION METHODS**
Installation of Groove

Prior to cutting out the grooves for all recessed lines, the Contractor shall use a chalk line or other suitable method to layout the proposed pavement markings on the surface course so that the Engineer can inspect the locations. Once the Engineer has inspected and approved the proposed striping layout, the grooves for the proposed pavement markings may be cut. No pavement grooving shall be done without the prior approval of the Engineer.

Groove position shall be a minimum of 4 inches from the edge of the pavement marking to any longitudinal pavement joints. The groove shall not be installed on bridge joints, on drainage structures, or in other areas identified by the Engineer. The groove shall not be installed continuously for intermittent pavement markings, but only where markings are to be applied.

The use of gang stacked diamond cutting blades to grind a smooth square slot is required for producing all grooves. The spacers between blade cuts shall be such that there will be less than a 10 mil rise in the finished groove between the blades. The acceptability of the surface texture will be determined by the Engineer.

The diamond grinder shall have an articulating head so that the slots are installed correctly on grades and super elevated sections.

Grooves that are ground deeper or wider than the specified allowable limits shall be repaired per the direction of the Engineer at no additional cost. Grooves that are ground too shallow, too narrow, or with unacceptable rises between blade cuts shall be reground to the correct size, depth, and surface finish at no additional cost. Slots ground out of alignment shall be patched using an approved method and materials.

Grooves shall be 1 inch  $\pm$  ¼ inch wider than the pavement marking material. Groove depth shall be 100 mils  $\pm$  5 mils, unless otherwise approved by the Engineer. Depth shall be consistent across the full width of the groove. Depth plates shall be provided by the Contractor to the Engineer to assure that desired groove depth is achieved.

**ITEMS 866.206, 866.212, and 867.206** (Continued)

Grooves shall be clean, dry and free of laitance, oil, dirt, grease, paint or other foreign contaminants. Shrouds and a vacuum apparatus shall be included as part of the grinder to remove larger pieces of pavement that are ground out. If water is used to clean the groove or the grooving process takes place during rainfall, a minimum of 24 hours of dry time is required prior to the placement of pavement markings.

After the depth, width, length, and surface condition has been approved by the Engineer, an air lance shall be used to remove fine particles from the groove. Air compressors shall initially be blown out away from the application area to prevent compressor condensation build-up from entering the groove. The Contractor shall prevent traffic from traversing the grooves and re-clean grooves, as necessary, prior to application of pavement markings at no additional cost to the Department.

All grooves must be given final approval by the Engineer prior to the placement of pavement markings.

**Installation of Reflectorized Polyurea**

Installation of reflectorized polyurea pavement markings shall conform to the Manufacturer's specifications and the following:

Application rate for binder and all beads and elements shall consider final pavement surface composition and smoothness in advance of application to ensure proper wet film thickness and embedment of all beads and elements. The Contractor shall provide the Engineer with documentation from the Manufacturer with all recommended application rates (and conformance to initial dry and wet reflectivity requirements) in advance of any pavement marking installation.

The minimum uniform wet thickness for the polyurea binder shall be 25-30 mils. The line thickness shall be met across at least the middle  $\frac{2}{3}$  of the pavement marking width. Depth plates shall be provided by the Contractor to the Engineer to assure that desired thickness is achieved.

The finished white color shall be free from tint, with good opacity and visibility under both daylight and artificial light. The finished yellow color shall be defined by Federal Test Standard 595 - Color Chip Number 13538, using Federal Test Standard 141 (Method 4252). The finished lines shall be uniform in color and have clean, well-defined edges.

First and second drop beads and/or elements shall be applied in a manner that does not induce rolling or bouncing, to ensure that exposed portions of beads are free of binder material. Beads and elements should be embedded in the binder to a depth of approximately 50% of their diameter.

Drop rate for first drop bead or element shall be per the Manufacturer's specifications.

Drop rate for second drop glass bead shall be 6.4-10.2 lbs. per gallon.

Newly installed pavement markings shall be protected from tracking during the setting period per Subsection 860.63.

### **ITEMS 866.206, 866.212 AND 867.206 (Continued)**

Incidental to the cost of these items, the Contractor shall measure the average retroreflectance of the pavement markings and report the results to the Engineer. The Contractor shall take retroreflectance measurements between 7 and 14 days from date of application. Contractor shall perform retroreflectance readings per the measurement and sampling procedures contained in ASTM D7585 (Standard Practice for Evaluating Retroreflective Pavement Markings Using Portable Hand-Operated Instruments) using the Referee Evaluation Protocol found in section 6.4.

The following tests shall be performed during the measurement and sampling process:

1. ASTM E1710 (*Standard Test Method for Measurement of Retroreflective Pavement Marking Materials with CEN-Prescribed Geometry Using a Portable Retroreflectometer*); and
2. ASTM E2177 (*Standard Test Method for Measuring the Coefficient of Retroreflected Luminance ( $R_L$ ) of Pavement Markings in a Standard Condition of Wetness*).

The average initial retroreflectance readings shall exceed the following minimum values:

	*White Markings	*Yellow Markings
ASTM E1710 (Dry)	475 mcd/lux/m <sup>2</sup>	375 mcd/lux/m <sup>2</sup>
ASTM E2177 (Wet Recovery)	375 mcd/lux/m <sup>2</sup>	300 mcd/lux/m <sup>2</sup>

\*Observation Angle = 1.05°, Entrance Angle = 88.8°

Pavement markings with measured average initial retroreflectance readings that do not meet the specified minimum values using the procedures outlined in subsection 6.4.5 of ASTM D7585 shall be removed by a method approved by the Engineer and reapplied at no additional cost.

#### Pavement Marking Asset Management

Upon completion of the pavement marking installation, the following data shall be tabulated by the Contractor:

1. Retroreflectance readings, including date(s), time(s), and location(s) where readings took place;
2. Liquid binder type(s) and application rate;
3. Reflective element type and drop rate;
4. Date of groove installation;
5. Lot, batch number, or any other material identifiers and manufacturing information;
6. Date and time of final liquid marking installation;
7. Highway location (including direction) of installation;
8. Air and pavement temperature during application;
9. Measured material application thickness, depth of groove; and
10. Any other pertinent information that may assist MassDOT with Quality Control.

**ITEMS 866.206, 866.212, and 867.206** (Continued)

Results for all readings shall be provided within 10 business days of testing to the Engineer, with a second copy sent to:

State Traffic Engineer  
Attention: Pavement Marking Installation & Testing  
10 Park Plaza, Room 7210  
Boston, MA 02116

The cost to prepare and submit this data shall be considered incidental to the cost of the items.

**METHOD OF MEASUREMENT**

Reflectorized polyurea pavement markings will be measured for payment by the foot as the actual length of lines applied, complete in place.

**BASIS OF PAYMENT**

Reflectorized pavement markings will be paid for at the respective contract unit price per Foot as based on the measurements as determined by the Engineer. The contract prices shall include all material, labor, equipment, and incidental costs required to complete the work.

**ITEM 874.41**

**TRAFFIC SIGN REMOVED AND DISCARDED**

**EACH**

Work under this Item shall include the dismantling, removal and satisfactory disposal of the existing roadside traffic sign, or street sign and their post as shown on the plans or as required by the Engineer.

The work shall also include the excavation of the existing foundations. Existing concrete foundations, if not interfering with the proposed construction, may be abandoned in place with approval of the Engineer. Foundations under the roadway surface shall be removed to a depth of three feet below finished grade. Foundations outside of the roadway surface shall be removed to a depth of one foot below the proposed finished grade. The hole shall be backfilled with gravel and compacted, and the existing surfaces restored or replaced in kind or as required by the Engineer. The existing sign panels and supports, under this item, not needed on the project, shall be legally discarded by the Contractor. The Contractor shall legally dispose of the items at a location not on MassDOT Highway Division property. The existing signs shall not be removed until the new signs and structures replacing them are ready for installation unless otherwise required by the Engineer.

**METHOD OF MEASUREMENT**

Item 874.41 will be measured for payment by the each, for each traffic sign removed and discarded.

**BASIS OF PAYMENT**

Item 874.41 will be paid for at the contract unit price per each, which price will be full compensation for dismantling, removal and discarding the signs and supports as designated above, the excavation and disposal of the existing foundations, the supplying and placing of compacted gravel backfill where foundations and posts are removed, restoration of surface, and all incidental costs required to complete the work.

**ITEM 983.35****STREAMBED MATERIAL  
REMOVED AND RELAID****CUBIC YARD****ITEM 983.36****NATURAL STREAMBED MATERIAL****CUBIC YARD**

Work under these items shall provide for the removal, stockpiling and reinstallation of natural streambed material.

**DESCRIPTION**

This work shall consist of removing, stockpiling, and replacing streambed material in the proposed bridge replacement and the upstream and downstream approaches in the limits as shown in the plans. The streambed restoration shall replicate the existing natural channel bed outside the work area in terms of material, roughness, shape, profile, and appearance. The ultimate product will, to the extent possible, replicate the function and appearance of the natural stream channel. This will allow the natural movement of water, sediment, large wood, ice, aquatic organisms, and wildlife through the structure.

The Contractor shall coordinate with his/her sub-contractors 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 a Fluvial Geomorphologist (Geomorphologist) or Wildlife Biologist to provide on-site oversight and assistance during streambed restoration construction to ensure the restoration is constructed as shown on the Plans, 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, 857-262-3378 / david.j.paulson@state.ma.us) to set up an initial (virtual or in person) meeting with MassDOT's Geomorphologist, Contractor, District Environmental Engineer, and Resident Engineer. At this meeting, the Geomorphologist or MassDOT Wildlife Biologist 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 additional onsite meeting to discuss the streambed restoration with the Geomorphologist and respective parties from MassDOT. The Geomorphologist or Wildlife Biologist 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.

The placement of streambed material under this item shall not begin without approval of the Engineer.

## **ITEMS 983.35 and 983.36** (Continued)

### **MATERIAL**

The top 12 inches excavated streambed material shall be removed and stockpiled to facilitate reinstallation and replication of the natural streambed. This streambed material shall be stockpiled on-site during construction activities and shall be protected to prevent the material from blending with other soils on the work site. The excavated streambed material below the top 12 inches shall be stockpiled and reused to fill the voids in the proposed modified rockfill placed below the top streambed restoration layer. Streambed material will be sourced from the channel under the existing structure where the existing main flow is located.

In the event that there is not enough available suitable material, additional streambed restoration material shall be locally sourced that matches the composition of the existing native streambed where the project is located. The following gradation may be used as a guide.

#### **Streambed Material Gradation**

<b>Stone Size (mm)</b>	<b>Stone Size (inches)</b>	<b>Particle*</b>	<b>% Finer</b>
1,024	40	Medium boulder	100
256	10	Very large cobble	70
64	2.5	Very coarse gravel	30
0.5	0.02	Coarse sand	9

\*(Wentworth, 1992)

The streambed material shall be approved by the Resident Engineer and Geomorphologist prior to use.

### **Related Items**

Modified rockfill Stone shall conform to the requirements of Item 986. and will be paid for under that item.

## **CONSTRUCTION**

### **Channel**

The streambed material shall be reinstalled to the limits as shown on the Streambed Restoration Plan and to an average thickness of 12 inches, with variations in thickness as necessary to replicate existing channel conditions. The initial placement of streambed material shall fill / choke the voids in the underlying modified rockfill where applicable. Fill voids by shaking stone with the teeth of an excavator bucket, hand tamping with metal tamping rods, and by spraying water to settle fines between large stones. Plate compactors shall not be used. The purpose of filling the voids is to prevent subsurface flow where surface water disappears into large voids between the stone fill below the channel bed surface during low flow conditions. The final streambed shape and appearance shall be finalized in the field as directed by the Geomorphologist.

**ITEMS 983.35 and 983.36** (Continued)

Reinstallation of the stockpiled streambed material shall be placed to restore streambed habitat and fish passage. The streambed materials shall be installed during normal low water conditions behind cofferdams in accordance with the environmental permits.

**Completion**

Once all material has been placed in the stream channel and approved by the Geomorphologist and Resident Engineer, the Contractor shall remove the cofferdams in such a way as 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 maintain the general configuration of the existing stream bedform and there shall be minimal to no subsurface flow upon final inspection by the Resident Engineer and Geomorphologist. The project must be passable by fish and other aquatic organisms following construction.

**METHOD OF MEASUREMENT**

Item 983.35 will be measured for payment by the Cubic Yard, for the restoration of the streambed within the limits shown on the Plans as approved by the Engineer and Geomorphologist.

Item 983.36 will be measured for payment by the Cubic Yard of natural streambed material as required to supplement the stockpiled material and approved by the Engineer.

**BASIS OF PAYMENT**

Items 983.35 and 983.36 will be paid for at the respective Contract unit prices per cubic yard, which prices shall include full compensation for all labor, tools, equipment, materials, and incidental costs required to excavate, stockpile and re-lay streambed material to the lines and grades shown on the Contract plans or as required by the Engineer.

The Geomorphologist will be provided by MassDOT at no cost to the Contractor.

Modified Rockfill Stone will be paid under Item 986.



**ITEM 990.11****TEMPORARY EXCAVATION SUPPORT -  
STRUCTURE NO. S-23-012 (CCL)****LUMP SUM**

Work under this item shall include shoring and bracing of excavations in accordance with all AASHTO requirements.

**DESCRIPTION**

The Contractor shall design, furnish, install, maintain, and remove Temporary Excavation Support as required based upon the actual site conditions for the maintenance of traffic and support of excavation during the demolition of the existing structure and construction of the proposed bridge. The Temporary Excavation Support is to be installed at the approximate locations shown on the Plans. Placement is designed to provide sufficient space to allow for installation of a temporary traffic barrier system and the required lane widths specified during stage construction operations.

Temporary Excavation Support may be used with or without tiebacks, as required, to satisfy the design criteria contained herein and must be capable of supporting all loads applied during all stages of construction. The assumed maximum height of retained earth along both approaches is approximately 20-feet. At both locations, the temporary earth support shall extend longitudinally such that the maximum slope of the excavated (or proposed) surface does not exceed 1 vertical to 2 horizontal. The work also includes custom temporary earth support system closures over the back of existing abutment batters used to retain the roadway excavation over existing and proposed abutment/footings during all staged construction. These custom temporary earth support system closures are shown schematically on the Stage Construction Plans. Additionally, included in the work is shoring as required below the existing abutment footings to remain during Stage I demolition to ensure there is no undermining.

**Design:**

The excavation support at locations shown on the plans or described herein shall be fully designed by the Contractor. All earth support shall be designed in accordance with the AASHTO Guide Design Specifications for Bridge Temporary Works and MassDOT LRFD Bridge Manual with all interims published as of the bid opening date.

The Contractor is responsible for determining all geotechnical criteria, lateral earth pressures, and hydrostatic pressures associated with the temporary excavation support. Additional lateral earth pressures due to surcharges caused by equipment operation and/or material storage near the top of the excavation shall be considered and incorporated into the design, but not less than 250 lb/ft<sup>2</sup>.

**Submission of Design Calculations and Drawings:**

Complete Temporary Excavation Support designs and plans shall be prepared and stamped by a Professional Engineer registered in Massachusetts. Prior to installation, the plans and calculations shall be submitted to the Engineer for his review, acceptance, and as evidence that the requirements of these provisions have been fulfilled. Furnishing such plans and calculations shall not relieve the Contractor of sole responsibility for safety of the public, personnel, equipment, and structures, as well as successful project completion.

**ITEM 990.11** (Continued)

The design documents prepared by the Contractor shall show the horizontal and vertical extents of the temporary excavation support system, the sizes and dimensions of the components of the system, its proposed method of bracing, construction notes, and any other necessary measures required to allow for the proposed construction. Design and details of the custom temporary earth support system closures at the back of each abutment and at the abutment footing shall also be included in the submission. The Temporary Excavation Support shall not be installed until the Contractor's design has been reviewed and approved by the Engineer.

**MATERIALS**

Steel sheeting shall conform to all applicable specifications of Subsection 950 and shall meet the material requirements of Subsection M8.05.4; Structural steel shapes for soldier piles shall conform to M8.05.1 and other structural steel components shall conform to M8.05.0. All materials used for Temporary Excavation Support shall be new (or used but in like-new condition), sound and free from strength-impairing defects and subject to the Engineer's approval.

**CONSTRUCTION METHODS**

Guide wales or other devices shall be used to ensure accurate driving and aligning of the piles.

All welding and the preparations and assembly of material for welding shall conform to the MassDOT Standard Specifications for Highway and Bridges, the Current Supplemental Specifications, the AASHTO LRFD Standard Specifications for Highway and Bridges and the AASHTO/AWS D1.5:2020 Bridge Welding Code and interim revisions published by AASHTO as of the bid opening date.

Any pile which becomes tilted or damaged shall be repaired, or if in the opinion of the Engineer it cannot be properly readjusted, the Contractor shall replace it with a new pile at no additional cost.

Upon completion of the construction and sufficient backfilling to maintain the stability of the adjacent roadway, the temporary excavation support may be removed or cut-off at the required elevations. Any temporary excavation support within the footing's supporting soil is required to remain in place and cut off. Supporting soil shall be defined as soil directly below the footing contained within a series of planes that originate at 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.

All materials for the temporary support systems shall remain the property of the Contractor.

**ITEM 990.11** (Continued)

**BASIS OF PAYMENT**

Item 990.11 will be paid at the contract lump sum bid price, which price shall include full compensation for the Contractor 's design and plans; all material and maintaining the support systems, labor, tools and equipment furnished; and driving, coring, drilling, bracing, cutting, removal, and all incidental costs required to complete the work specified, as approved, regardless of the type of system the Contractor installs.

In addition to the locations indicated on the Plans, other locations may require excavation support by temporary earth support. If the Contractor elects to install such temporary earth support, no additional measurement or payment will be made under this Item and will be considered incidental work necessary for the satisfactory completion of the various other Items of work. No direct payment will be made for any temporary earth support not indicated on the Plans or in these Special Provisions to be specifically utilized for excavation support for demolition and construction of the bridge.

**BASIS OF PARTIAL PAYMENT**

The first payment will be made at seventy-five percent (75%) of the contract Lump Sum bid price of this Item and will be paid upon completion of the temporary earth support installation, to the satisfaction and approval of the Engineer.

The second payment will be made for the remaining twenty percent (25%) of the contract Lump Sum bid price for this Item and will be paid upon completion of all work for this Item, and satisfactory removal of the temporary earth support from the project.

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**ITEM 991.1      CONTROL OF WATER - STRUCTURE NO. S-23-012      LUMP SUM**

The work under this item shall conform to the relevant provisions of Subsection 140.60E. Water Control in Foundation Area of the Standard Specifications, the Contract Drawings, and the following:

The work shall consist of installing and maintaining a temporary water control system in areas of demolition of the existing bridge and proposed bridge construction including wingwall construction and installation of modified rockfill at the face of the wingwalls as shown on the Plans. The Contractor shall furnish all labor, materials and equipment required for doing the work as described above and as shown on the Plans, in the dry. Furthermore, the operations of Control of Water neither shall cause the accumulation of siltation nor any adverse effect to the water or the environment.

Work under this item shall include all materials, equipment and labor needed to construct and install temporary control of water systems. The temporary control of water systems includes water sedimentation and erosion control. The temporary control of water systems shall be nonpermanent which does not harm the ecology of the river, land under water, and surrounding land, and shall be comprised of sand bags, cofferdams, steel sheeting or other approved impervious curtains, and dewatering to facilitate construction activities. Operations of Control of Water shall not adversely affect the quality of the required construction.

Steel sheeting or bracing necessary to complete the work shall conform to the provisions of Subsection 950 and is considered incidental to this Item.

Control of water shall include treatment to remove sedimentation and potential water contaminates in a manner which complies with the water quality requirements of the Massachusetts Department of Environmental Protection (MA DEP), the U.S. Army Corps of Engineers (ACOE) and the U.S. Environmental Protection Agency (EPA). **Direct discharge from the settling basin into the river/brook shall not be permitted.**

Water pumps and hoses used shall be in good working condition and of adequate power and size to handle the dewatering operation(s). Before installing the dewatering settling basin, all other erosion control measures shall be installed. Dewatering settling basin operations shall be maintained in working condition including periodic removal of accumulated sediment within the basin. Additional erosion control measures shall be employed as required by the Engineer to prevent erosion and sedimentation of the streambed.

**Submittal**

Prior to the commencement of any work at the site, the Contractor shall submit to the Engineer and for review and approval, a detailed plan for water control, including the design of steel sheeting, the construction of the water control system for bridge and retaining wall work. The submittal shall include working drawings and calculations detailing the methods and materials proposed to account for all anticipated loads and construction conditions while maintaining a safe work area.

**ITEM 991.1** (Continued)

The Water Control Plan shall include a Sedimentation and Erosion Control Plan and Containment Plan. The plans shall be adequate in detail to define specifics regarding materials, sizes, connections and incidental items associated with the work. The furnishing of such plans shall not serve to relieve the Contractor's responsibility for the safety of the work or his responsibility for the successful completion of the project. The proposed plans submitted shall be designed and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts.

Upon completion of water control, the materials and equipment used to maintain the cofferdam(s) and sedimentation treatment basin(s) shall become the property of the Contractor and shall be removed by the Contractor from the site. The area affected shall be restored to its natural condition in a manner subject to the Engineer's approval.

**BASIS OF PAYMENT**

Control of Water – Structure No. S-23-012 will be paid for at the Contract lump sum price, which shall include, but not be limited to, the design of the water control systems, as well as all equipment, materials and labor needed for the installation, maintenance, cutting, removal, disposal of the materials used for water control, and disposal of any siltation materials caused by the pumping operation. All costs required for transport, special handling, inspection, testing, etc., shall be included in the Contract bid price, which shall also include all labor, materials, equipment, tools, and incidental costs required to complete the work.

Progressive payment of the Lump Sum will be as follows. Twenty-five (25%) percent of the Lump Sum Price Bid for this Item will be paid after the approved installation of the water control system for Stage I Construction. Twenty-five (25%) percent of the Lump Sum Price Bid for this Item will be paid after the approved installation of the water control system for Stage II Construction. The final fifty (50%) percent of the Lump Sum Price Bid for this Item will be paid upon the complete removal of the water control system from the project site at the completion of the work. No separate payment will be made for the removal and disposal of the sediment material collected from the dewatering systems, but all costs in connection therewith shall be included in the Contract unit price bid.

**ITEM 994.01****TEMPORARY PROTECTIVE SHIELDING**  
**BRIDGE NO. S-23-012****LUMP SUM**

The work to be done under this Item shall provide for protection of Sevenmile River from falling debris during removal of the existing bridge, which includes all work under Item 114.1. Keeping all construction material out of the river must be accomplished by installation of adequate shielding placed beneath the existing superstructure prior to demolition of the bridge as directed by the Engineer.

All shielding shall meet the following requirements:

The Contractor is responsible for designing, furnishing, installing, maintaining, removing, and disposing of shielding to the satisfaction of the Engineer.

1. The Contractor shall submit for review Plans of proposed shielding stamped by a Professional Engineer registered in the Commonwealth of Massachusetts, for conformance to the Contract Documents, prior to installation of shielding. The drawings shall include details of all connections, brackets and fasteners and shall be submitted at the pre-construction conference.
2. Protective shielding shall not be installed until the Engineer's review is completed and the Contractor has approval to proceed. No portion of the bridge, railing, or other portion of the existing structure shall be removed until Protective Shielding is completely in place.
3. The shielding shall extend the full length of the bridge span and a sufficient distance above and beyond the girders as required to protect debris from entering the river below. The Contractor may use the existing abutments as supports for the protective shielding. All spaces along the perimeter of the shielding and at the seams shall be sealed to prevent dust and debris from escaping and falling into the river. Shielding should be sealed using polyurethane sheets to contain fine debris.
4. Shielding shall be designed to safely withstand all loads it will be subjected to during construction. The design stresses shall be in accordance with AASHTO LRFD Bridge Design Specifications. The design shall also include a complete description of the equipment and construction methods proposed for the superstructure removal. The shielding shall also be designed to withstand impact loads from the maximum size of concrete should it fall during removal.
5. The shielding shall be maintained and remain in place until the superstructure is completely removed, and concrete excavation is complete. Shielding shall be removed only upon approval of the Engineer. After demolition is complete, the shielding shall be removed and disposed of to the satisfaction of the Engineer.

All materials used in the shielding systems shall become the property of the Contractor and shall be removed from the site at the completion of the project.

If the Contractor's operations damage any existing portions of previously installed shielding, such damage(s) shall be repaired at the Contractor's expense.

**ITEM 994.01** (Continued)

**BASIS OF PAYMENT**

Item 994.01 will be paid for at the contract unit bid price lump sum, which price shall include all design costs, labor, materials, tools, equipment and incidentals required for the satisfactory installation and subsequent removal of the Temporary Protective Shielding. Payment of 75% of the Lump Sum Bid Price for this Item will be made upon complete installation to the satisfaction and approval of the Engineer. The remaining 25% of the Lump Sum Bid Price for this Item will be paid following proper removal and disposal of the shielding. If only half of the shielding is installed due to stage construction, then the Contractor will receive half of the 75% upon complete installation of each half of the shielding.

**ITEM 995.01      BRIDGE STRUCTURE, BRIDGE NO. S-23-012 (CCL)      LUMP SUM**

The work under this Item shall conform to the relevant provisions of Subsection 995 of the Standard Specifications and the specific requirements stipulated below for component parts of the subject Item. For those component parts where no specific requirement is stipulated, the Standard Specifications shall apply, except for payment.

Work under this Item shall include all materials, equipment and labor needed for the following:

- Precast Concrete 3-sided Box
- Precast Concrete Pedestal Walls
- Precast Concrete Approach Slabs
- Precast Concrete Wingwalls
- Precast Concrete Footings
- Precast Highway Guardrail Transitions
- Epoxy coated steel reinforcement
- Sawing and Sealing Joints in Asphalt Pavement
- Metal Bridge Railing (3 Rail), Steel (Type S3-TL4)
- Cast-in-place Concrete Transition Wall
- Membrane Waterproofing for Bridge Decks
- Damp-Proofing

Payment for materials shown on the Plans as being part of the bridge structure or which may be incidental to its construction and are not specifically included for payment under another Item shall be considered incidental to the work performed under this Item and shall be included in the unit price of the component of which they are a part. Incidental Items include, but not limited to, vertical assembly devices, fasteners, grout, fillers, waterstops, membrane waterproofing protective course and crushed stone for weep holes. Additionally, an existing CMP drain pipe, protruding from the southeast embankment, shall be cut and capped, as directed by the Engineer, such that the pipe is no longer visible. Payment for this work is considered incidental to this item.

**PRECAST CONCRETE 3-SIDED BOX**  
**PRECAST CONCRETE PEDESTAL WALLS**  
**PRECAST CONCRETE APPROACH SLABS**  
**PRECAST CONCRETE WINGWALLS**  
**PRECAST CONCRETE FOOTINGS**  
**PRECAST HIGHWAY GUARDRAIL TRANSITION**

**General.**

The work under these headings consists of fabricating, transporting and installing Precast Concrete 3-sided Box, Precast Concrete Pedestal Walls, Precast Concrete Approach Slabs, Precast Concrete Wingwalls, Precast Concrete Footings and Precast Highway Guardrail Transitions and includes all necessary labor, materials, and equipment to complete the work as shown on the Plans. The work shall conform with the MassDOT Standard Specifications and the requirements of the current AASHTO LRFD Bridge Construction Specifications, supplemented by the current relevant provisions of the latest edition of PCI MNL-116 (The Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products), except as noted herein.



**ITEM 995.01** (Continued)**QUALITY ASSURANCE****A. General.**

Quality Assurance includes all the planned and systematic actions necessary to provide confidence that a product or facility will perform satisfactorily in service. It is an all-encompassing term that includes Quality Control (performed by the Fabricator) and Acceptance (performed by MassDOT). Quality Control is the system used by the Contractor and Fabricator to monitor and assess their production processes at the plant facility and installation activities at the project site to ensure that the final product will meet the specified level of quality. Acceptance includes all factors used by MassDOT to determine the corresponding value for the product. MassDOT Acceptance inspection at the plant facility is intended as a means of evaluation of compliance with contract requirements. Contractor and Fabricator Quality Control activities and MassDOT Acceptance activities shall remain independent from one another. MassDOT Acceptance activities shall not replace Fabricator Quality Control activities.

**B. Fabricator Quality Control.**

Quality Control shall be performed by the Fabricator to ensure that the product is fabricated in conformance with the specifications herein. The Fabricator shall maintain a Quality Control system to monitor, assess, and adjust placement and fabrication processes to ensure the Precast Concrete Bridge Element(s) meet the specified level of quality, through sufficient Quality Control sampling, testing, inspection, and corrective action (where required). The Fabricator's Quality Control system shall address all key activities during the placement and fabrication and shall be performed in conformance with the Fabricator's NPCA or PCI Certification. Quality Control documentation shall meet the requirements of the *Fabricator Quality Control – Documentation* section below. Upon request, Fabricator Quality Control documentation shall be provided to the MassDOT Plant Inspector.

**1. Plant.**

Prior to the fabrication of Precast Concrete Bridge Elements, the Fabricator's precast concrete plant shall obtain the following:

- (a) Certification by the National Precast Concrete Association (NPCA) Plant Certification Program or Precast/Prestressed Concrete Institute (PCI) Plant Certification Program, for the applicable types of Precast Concrete Bridge Element(s) being fabricated
- (b) MassDOT Prequalification
- (c) MassDOT Mix Design Approval

All concrete for a given Precast Concrete Bridge Element shall be produced by a single company and plant, unless otherwise approved by the Engineer.

**ITEM 995.01** (Continued)**2. Personnel.**

The Fabricator shall provide adequate training for all QC personnel in accordance with NPCA or PCI certification. There shall be sufficient personnel trained and certified to perform the tests listed under Subsection M4.02.13, Part D. At a minimum, the Fabricator's Quality Control Personnel shall maintain the following qualifications and certifications:

- (a) QC Manager with an active NETTCP Field Technician or ACI Concrete Field Testing Technician – Grade I certification or higher, and a minimum of 4 years continuous experience in the manufacture of Precast Concrete Bridge Elements for state transportation departments. The QC Manager shall be on site while the batch plant is producing and placing concrete for MassDOT projects.
- (b) A Technician/Inspector having the Precast/Prestressed Concrete Institute (PCI) Technician/Inspector Level I or NorthEast Transportation Training and Certification Program (NETTCP) Precast Concrete Inspector, or higher.

The Contractor shall submit to the Engineer a copy of the Fabricator's Quality Control Personnel required qualifications, as specified above.

**3. Laboratory.**

The Fabricator shall provide a room of sufficient size to house all equipment and to adequately perform all testing. The room shall have either a separate moisture storage room or curing box for concrete cylinders, and it shall be thermostatically controlled to maintain temperatures consistent with AASHTO T 23. It shall include a desk and file cabinet for proper record keeping, and have good lighting and ventilation. This room shall be kept for testing and quality control and not used for any other purpose. An additional desk and file cabinet shall be provided for exclusive use of the Engineer. No exception from these requirements will be allowed without the express written permission of the Engineer.

**4. Testing Equipment.**

At a minimum, the Fabricator's plant facility shall have the following testing equipment:

- (a) Air Content Meter Type A or B: AASHTO T 152
- (b) Air Content Meter Volumetric Method: AASHTO T 196 (Required for Lightweight Concrete)
- (c) Slump Cone: AASHTO T 119
- (d) Cylinder Molds AASHTO M 205
- (e) Concrete Testing Machine: AASHTO T 22
- (f) Screening Sieve: AASHTO T 27, AASHTO T 11
- (g) Curing Box: AASHTO T 23
- (h) Spread Test Base Plate for Self-Consolidating Concrete (SCC): ASTM C1611
- (i) All other equipment prescribed by AASHTO and ASTM standards for the tests to be performed by the Fabricator as specified

**5. Inspection.**

Quality Control personnel shall monitor and inspect the fabrication of each Precast Concrete Bridge Element. Quality Control personnel shall report all inspection activities on Quality Control Inspection Reports and non-conformances on Non-Conformance Reports (NCRs) throughout the entire fabrication process, as specified herein.

**ITEM 995.01** (Continued)**6. Temperature Monitoring.**

At a minimum, the Fabricator shall monitor, record, and report the temperatures of the form, ambient temperatures surrounding the concrete, and temperatures of the concrete continuously, without interruption as specified below:

- (a) Prior to placement of concrete to verify that  $T_i \geq 50^\circ\text{F}$ .
- (b) Immediately after placement to verify that  $T_i \geq 50^\circ\text{F}$  is maintained.
- (c) Throughout the entire duration of the curing cycle, at regular intervals not to exceed one hour until 100% Design Strength ( $f'_c$ ) is attained and concrete has cooled to within  $40^\circ\text{F}$  of the ambient temperature surrounding the Precast Concrete Bridge Element.

At a minimum, the temperature measuring devices shall record and report the temperature of the concrete to the nearest  $2^\circ\text{F}$ . At least two temperature sensors (thermocouples) shall be positioned to record the maximum and minimum anticipated concrete temperatures. The anticipated minimum temperature shall be measured with one or more thermocouples at a distance no greater than 2 inches from the surface of the thinnest section. The anticipated maximum temperature shall be measured with one or more thermocouples at the center of the thickest section. Proposed temperature measurement locations shall be submitted to the Engineer for approval. Temperature recording devices shall be located within the curing enclosure and calibrated as required by PCI MNL-116 Section 4.18.4. Maximum heat increase and cool down rates shall comply with PCI MNL-116, Section 4.19. The Contractor shall furnish temperature logs recorded at a minimum frequency of once per hour to the Inspector as required, with each post-pour QC inspection report.

**7. Sampling and Testing.**

At a minimum, the Fabricator shall perform random Quality Control sampling and testing as specified in *Table 1: Quality Control Sampling and Testing*. The Fabricator shall perform additional Quality Control sampling and testing on concrete that has been retempered with admixtures or hold-back water during fabrication. Test Specimens shall conform to the requirements of Section M4.02.13 of the MassDOT Standard and Supplemental Specifications and AASHTO R 60, with the exception of the Stripping (80%  $f'_c$ ) set of cylinders. Stripping (80 %  $f'_c$ ) cylinders shall be cured in the same location and environment as the Precast Bridge Elements they represent. If approved by the Engineer, compressive strength cylinder match curing equipment, that maintains the same concrete conditions that the corresponding Precast Bridge Element is exposed to, may be utilized in lieu of Stripping (80 %  $f'_c$ ) field cured cylinders, with the use of thermocouples, controllers, and heaters.

**ITEM 995.01** (Continued)

**Table 1: Quality Control Sampling and Testing**

Quality Characteristic	Test Method	Sample Size	Specification Limit	Lot Size <sup>(c)</sup>	Sublot Size <sup>(d)</sup>	Frequency	Point of Sampling
Slump (in.) <sup>(a)</sup>	AASHTO T 119	Per AASHTO	≤ 8 in. or as approved by the Engineer				
Air Content (%)	AASHTO T 152	Per AASHTO	5% ≤ % ≤ 8%				
Temperature (°F)	AASHTO T 309	Per AASHTO	50°F ≤ °F ≤ 90°F				
Compressive Strength (psi)	AASHTO T 22	Stripping Cylinders: One (1) set of Three (3) 4 x 8 in.	≥ 80% f <sub>c</sub> at Stripping				
		7-day Cylinders: One (1) set of Three (3) 4 x 8 in.	For Information at 7 days				
		28-day Cylinders: One (1) set of Three (3) 4 x 8 in.	≥ 100% f <sub>c</sub> at 28 days				
		56-day Cylinders: One (1) set of Three (3) 4 x 8 in.	≥ 100% f <sub>c</sub> at 56 days <sup>(b)</sup>				

**Notes:**

- a) Self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.
- b) 56-day Compressive Strength test specimens shall require testing only when 28-day Compressive Strength test specimens have failed to meet Design Strength (f<sub>c</sub>).
- c) Lot shall be defined as a specific quantity of material from a single source, produced or placed by the same controlled process.
- d) Sublot shall be defined as an equal division or part of a Lot from which a sample of material is obtained in order to assess the Quality Characteristics of the Lot.

**ITEM 995.01** (Continued)**8. Certificate of Compliance.**

The Fabricator shall provide a Certificate of Compliance in accordance with Standard Specifications, Division I, Section 6.01, stating that QC test cylinders have achieved the design strength,  $f'_c$ . A Certificate of Compliance shall accompany each shipment and shall be presented to the MassDOT Resident Engineer or designee upon delivery to the site.

**9. Documentation.**

At a minimum, the Fabricator shall maintain a filing system for the following QC records and documentation. All QC records and documentation shall be made available to MassDOT upon the request of the Department.

- (a) Current MassDOT Approved Mix Design Sheet(s) and Approval Letter(s)
- (b) PCI or NPCA Certification
- (c) Current Qualifications and Certifications for QC Manager(s) and QC Technician(s)
- (d) Most current set of Approved Shop Drawings
- (e) Approved Placement, Finishing and Curing Plan
- (f) Approved Dunnage Plan
- (g) Fabricator Certificate of Compliance for each fabricated Precast Concrete Bridge Element
- (h) Admixture Manufacturer's Certification of Compliance for each approved Admixture
- (i) Completed QC Inspection Report for each fabricated Precast Concrete Bridge Element
- (j) Identification Number for each fabricated Precast Concrete Bridge Element
- (k) Time and date of casting of each fabricated Precast Concrete Bridge Element
- (l) Date of stripping of each fabricated Precast Concrete Bridge Element
- (m) Batch Ticket Printout reporting the quantity of concrete produced for each batch of concrete produced
- (n) Concrete temperature records for each Precast Concrete Bridge Element fabricated
- (o) QC Test Report Forms for each subplot of concrete produced
- (p) Non-Conformance Reports (NCRs)
- (q) Documentation of Repairs (if applicable)

**C. Acceptance.**

MassDOT will perform Acceptance inspection, sampling, and testing during fabrication and installation, to evaluate the quality and degree of compliance of the fabricated Precast Concrete Bridge Element to MassDOT specifications. Additionally, MassDOT Inspectors will monitor the Fabricator's Quality Control activities to ensure the Fabricator is properly administering Quality Control in conformance with the Fabricator's NPCA or PCI Certification. Acceptance inspection and test results not meeting MassDOT specifications will result in Non-conformance Reports (NCR) being issued by MassDOT to the Fabricator or Contractor for corrective action. Final Acceptance for the fabricated Precast Concrete Bridge Elements shall be determined by MassDOT.

**ITEM 995.01** (Continued)**1. Inspection.**

A MassDOT MassDOT Inspector will be assigned to perform Acceptance activities during fabrication, which includes the inspection of the materials, work procedures, and Precast Concrete Bridge Elements. At least seven (7) days prior to the scheduled start of fabrication, the Fabricator shall contact the MassDOT Research and Materials Section (RMS) to provide notice of the scheduled fabrication start date. The Fabricator shall complete the following activities prior to notifying MassDOT RMS of the scheduled start date:

- (a) Receive approval for all submitted Fabricator cement concrete mix designs from the MassDOT Research and Materials Section for the current year, as specified under the *Mix Design* section and *Table 3: Trial Batch Sampling Testing for New Mix Designs*. Self-consolidating concrete shall meet the requirements of M4.02.17.
- (b) Receive approval for the submitted Fabricator Placement, Finishing, and Curing Plan from the MassDOT Research and Materials Section, as specified under the *Placement, Finishing, and Curing Plan* section.
- (c) Receive Engineer of Record approved shop drawings from the MassDOT Research and Materials Section as specified under the *Shop Drawings* section.
- (d) Participate in the pre-production meeting, as described under the *Pre-Production Meeting* section (if required).

Prior to the start of fabrication, the Fabricator shall review the fabrication schedule with the MassDOT Inspector. Fabrication shall only proceed when:

- (a) The QC Inspector and MassDOT Inspector are present to inspect the Precast Concrete Bridge Element(s) being fabricated.
- (b) The QC Manager is present at the Fabricator's plant.

The Fabricator shall grant access to all required areas of the Fabricator's plant to the MassDOT Inspector, during the hours of fabrication. Fabrication without MassDOT Inspector access to required areas is prohibited, and will result in the rejection of the fabricated Precast Concrete Bridge Element(s).

Additionally, the MassDOT Inspector will monitor the adequacy of the Fabricator's Quality Control activities. MassDOT Inspector Acceptance activities performed at the Fabricator's plant shall remain independent from the Fabricator, and does not replace the Fabricator's required Quality Control activities.

**2. Sampling and Testing.**

At a minimum, the MassDOT Inspector will perform random Acceptance sampling and testing for each Sublot of concrete produced as specified in *Table 2: Acceptance Sampling and Testing*. The MassDOT Inspector will also perform Acceptance sampling and testing on concrete that has been retempered with admixtures or hold-back water during production. Test Specimens will conform to the requirements of Section M4.02.13 of the MassDOT Standard and Supplemental Specifications and AASHTO R 60.

**ITEM 995.01 (Continued)****Table 2: Acceptance Sampling and Testing**

Quality Characteristic	Test Method	Sample Size	Specification Limit	Lot Size <sup>(c)</sup>	Sublot Size <sup>(d)</sup>	Frequency	Point of Sampling
Slump (in.) <sup>(a)</sup>	AASHTO T 119	Per AASHTO	≤ 8 in. or as approved by the Engineer	Total Quantity of Concrete (cy) produced on a Contract, per Type of Element fabricated, per Mix Design	20 cy	One (1) per Sublot or fraction thereof	Point of Discharge
Air Content (%)	AASHTO T 152	Per AASHTO	5% ≤ % ≤ 8%				
Temperature (°F)	AASHTO T 309	Per AASHTO	50°F ≤ °F ≤ 90°F				
Compressive Strength (psi)	AASHTO T 22 AASHTO T 23	7-day Cylinders: One (1) set of Three (3) 4 x 8 in.	For Information at 7 days				
		28-day Cylinders: One (1) set of Three (3) 4 x 8 in.	≥ 100% $f'_c$ at 28 days				
		56-day Cylinders: One (1) set of Three (3) 4 x 8 in.	≥ 100% $f'_c$ at 56 days <sup>(b)</sup>				

**Notes:**

- (a) Self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.
- (b) 56-day Compressive Strength test specimens shall require testing only when 28-day Compressive Strength test specimens have failed to meet Design Strength ( $f'_c$ ).
- (c) Lot shall be defined as a specific quantity of material from a single source, produced or placed by the same controlled process.
- (d) Sublot shall be defined as an equal division or part of a Lot from which a sample of material is obtained in order to assess the Quality Characteristics of the Lot.

**ITEM 995.01** (Continued)**MATERIALS****A. Materials.**

Materials shall meet the following specifications (if applicable):

General	M4.00.00
Portland Cement	M4.01.0
Blended Hydraulic Cements	M4.01.1
Fly Ash	M4.01.2
Cement Concrete	M4.02.00
Cement	M4.02.01
Cement Mortar	M4.02.15
Aggregates	M4.02.02
Lightweight Aggregates	M4.02.03
Water	M4.02.04
Cement Concrete Additives	M4.02.05
Proportioning	M4.02.06
Mixing and Delivery	M4.02.10
Test Specimens	M4.02.13
Mortar for Filling Keyways	M4.04.0
Slag	AASHTO M 302
High Performance Cement Concrete	M4.06.1
Self-Consolidating Concrete (SCC)	M4.02.17
Controlled Density Fill – Non-Excavatable	M4.08.0
Reinforcing Bars	M8.01.0
Epoxy Coated Reinforcing Bars	M8.01.7
Galvanized Reinforcing Bars	M8.01.8
Welded Wire Reinforcement	M8.01.2
Mechanical Reinforcing Bar Splicer	M8.01.9
Lifting Devices	PCI MNL-116
Corrugated Metal Pipe	AASHTO M 36



**ITEM 995.01** (Continued)**1. Cement Concrete Mix Design.**

The cement concrete shall be comprised of specified proportions of water and MassDOT approved aggregates, cement, supplementary cementitious materials (SCMs), and admixtures to form a homogenous composition. Cement concrete for Precast Concrete Bridge Elements shall meet the requirements of M4.06.1 High Performance Cement Concrete, with the exception that the “Total Cementitious Content” specified shall be considered the “Maximum Allowable Cementitious Content”. When used, self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.

Prior to production of cement concrete, the Fabricator shall report and submit all proposed mix design formulations and its constituent materials onto the MassDOT Cement Concrete Mix Design Sheet to the MassDOT Research and Materials Section for review and approval. All mix design yields shall be designed for 1.0 cubic yards of concrete, with an allowable tolerance of +/- 1.0 %. All liquids incorporated into the proposed mix design(s) shall include both water and admixtures in the liquid mass calculation.

During production of cement concrete, the Fabricator shall not alter the previously approved mix design formulation or its constituent materials. Proposed alterations in source, type, batch quantity, or gradation to any of the constituent materials of the previously approved mix design formulation shall require a new MassDOT Mix Design Sheet submission to the MassDOT Research and materials Section for review and approval. Fabrication shall not occur without prior MassDOT mix design approval.

The Fabricator shall notify MassDOT RMS to schedule trial batch testing for the new mix design(s). Trial batch testing shall meet the following requirements:

- (a) Performed by a qualified laboratory and/or AASHTO accredited laboratory.
- (b) Performed and/or sampled in the presence of a MassDOT Inspector.
- (c) Meet the requirements as specified in *Table 3: Trial Batch Sampling Testing for New Mix Designs*. Self-consolidating concrete (SCC) shall meet M4.02.17.

Failure to perform all of the required trial batch testing or provide MassDOT RMS trial batch test results within the Specification Limits (as specified in Table 3) will result in the disqualification of the Fabricator’s proposed mix design(s).

**ITEM 995.01** (Continued)**Table 3: Trial Batch Sampling and Testing for New Mix Designs**

Quality Characteristic	Test Method	Sample Size	Specification Limit	Performed By
Slump <sup>(a)</sup>	AASHTO T 119	Per AASHTO	Max. 8 inches or as approved by the Engineer	Quality Control
Air Content (AC)	AASHTO T 152	Per AASHTO	$5\% \leq AC \leq 8\%$	Quality Control
Temperature (°F)	AASHTO T 309	Per AASHTO	$50^{\circ}\text{F} \leq ^{\circ}\text{F} \leq 90^{\circ}\text{F}$	Quality Control
Compressive Strength <sup>(b)</sup>	AASHTO T 22 AASHTO T 23	28-day Cylinders: One (1) set of Three (3) 4 x 8 in.	Lab Mixed $f'_{cr} = 1.3 f'_c$ at 28 days	MassDOT
			Batch Mixed $f'_{cr} = 1.2 f'_c$ at 28 days	
Alkali-Silica Reaction (ASR) <sup>(d)</sup>	ASTM C 1567	Per ASTM	M4.02.00	Quality Control
Resistance to Chloride Ion Penetration Chloride Ion Penetration <sup>(e)</sup>	AASHTO T 358 <sup>(f)</sup>	28-day Cylinders: One (1) set of Three (3) 4 x 8 in.	Resistivity $\geq 21 \text{ k}\Omega\text{-cm}$ at 28 days	MassDOT
Freeze/Thaw Durability <sup>(e)</sup>	AASHTO T 161 (Procedure A)	Per AASHTO	Relative Dynamic Modulus of Elasticity after 300 cycles $\geq 80\%$	Quality Control

**Notes:**

- (a) Self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.
- (b) Trial batch compressive strength testing shall be performed by MassDOT. Laboratory mixed trial batch compressive strength results shall achieve 130% Design Strength ( $f'_c$ ). Batch-mixed trial batch compressive results shall achieve 120%  $f'_c$ . Acceptance will be based on compressive strength testing performed by MassDOT.
- (c) If an AASHTO accredited laboratory is preparing the trial batch test specimens, MassDOT Acceptance presence is not required. If the Fabricator is preparing the trial batch test specimens, MassDOT Acceptance presence is required during trial batch test specimen preparation.
- (d) Alkali Silica Reaction (ASR) testing shall meet the requirements of M4.02.00. Independent laboratories performing ASR testing shall be listed on the MassDOT Quality Construction Materials List (QCML).
- (e) Calcium nitrite shall be removed from mix designs containing the admixture and replaced by an equivalent quantity of water when preparing Chloride Ion Penetration resistance trial batch test specimens.
- (f) The Wenner probe tip spacing “a” shall be 1.5.

**ITEM 995.01** (Continued)**2. 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.

**3. Grout.**

Grout used for shear keys, vertical adjustment assembly voids, and hand holes shall be in accordance with M4.04.0.

**4. Reinforcement.**

All reinforcing steel shall be coated Grade 60 unless otherwise noted on the plans. Mechanical reinforcing bar splicers shall be epoxy coated.

**5. 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.

**6. 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. Shop Drawings.**

Prior to performing any work under this Section, the Contractor shall receive approval for all shop drawings for the Precast Concrete Bridge Element being worked on and any special Contract requirements, provided that a complete shop drawing package is provided. The Contractor shall not order materials or begin work before receiving approved shop drawings. MassDOT will reject Precast Concrete Bridge Elements that deviate from the approved drawings or are fabricated prior to receiving written approval of the shop drawings. The Contractor shall bear full responsibility and costs for all materials ordered or work performed prior to the approval of the shop drawings or written authorization from MassDOT.

The Contractor shall submit scaled shop drawings to the Engineer of Record for review and approval. Upon approval, the Engineer of Record will forward two (2) sets of scaled, full size (minimum 24x36") paper copies of the Approved (or Approved As Noted) shop drawings to the MassDOT Director of Research and Materials. Calculations are not to be included in any submittal to the Research and Materials Section. An approval stamp shall appear on every shop drawing sheet. Wet-stamping or wet-signing is not required, provided that the stamp and reviewer name are legible. The Fabricator's name and address shall appear on each sheet.

**ITEM 995.01** (Continued)

Resubmittal of “Approved as Noted” shop drawings is not necessary for minor revisions, provided that the correction can be clearly understood and is unambiguous without possibility of misinterpretation. Shop drawings with questions or comments that require a response and/or additional information from the Fabricator must be resubmitted.

Detailed shop drawings shall be prepared in accordance with the relevant provisions of Subsection 5.02 and shall, at a minimum, contain the following:

- (a) Number and type and/or piece mark of the precast concrete bridge element including overall length, width and height.
- (b) Skew angle.
- (c) Location, size and geometry of all steel reinforcement, including mechanical reinforcing bar splicers to be used for connecting Precast Concrete Bridge Elements together in the field. Include steel reinforcement size, grade, and coating on the plans.
- (d) Location and details of all inserts, anchors, Vertical Adjustment Assemblies, and any other items required to be cast into the Precast Concrete Bridge Elements (whether detailed on the plans by the Engineer of Record or provided for the Contractor's convenience). Precast Concrete Bridge Elements shall not be fired or drilled into for attachment purposes. All hardware shall be galvanized except as noted.
- (e) Locations and details of the lifting devices, including supporting calculations, type and amount of any additional reinforcing required for lifting. The Fabricator shall design all lifting devices based on the no cracking criteria in Chapter 8 of the PCI Design Handbook (7th edition).
- (f) The minimum compressive strength required prior to handling the precast concrete bridge element.

The shop drawings shall not include procedures for placement, finishing, and curing of concrete. These details shall be included in the Placement, Finishing and Curing Plan that is to be submitted to MassDOT Research and Materials Section as described under *Placement, Finishing, and Curing Plan*.

**B. Fabrication.**

All Precast Concrete Bridge Elements shall be fabricated in accordance with the latest edition of PCI MNL-116 as modified herein.

**ITEM 995.01** (Continued)**C. Placement, Finishing and Curing Plan.**

At least 30 days prior to start of fabrication, the Contractor shall submit the Fabricator's proposed Placement, Finishing and Curing Plan to the Engineer for approval by MassDOT Research and Materials Section. This shall be an independent submittal, separate from the fabrication shop drawings. The Placement, Finishing and Curing Plan shall include the following:

- (a) Method of Mixing
- (b) Method of Placement
- (c) Method of Consolidation
- (d) Method of Finishing
- (e) Method of Initial Curing
- (f) Method of Intermediate Curing
- (g) Method of Final Curing
- (h) Moisture Retention Materials and Equipment (water spray equipment, saturated covers, sheet materials, liquid membrane-forming compounds, accelerated curing equipment, etc.)
- (i) Cylinder Curing Methods, Location, and Environmental Control (temperature, humidity, etc.)
- (j) Temperature Monitoring, Recording, and Reporting

**D. Dunnage Plan Shop Drawings.**

At least 30 days prior to the start of fabrication, the Contractor shall submit proposed Dunnage Plan Shop Drawings to the Engineer of Record for review and approval. This shall be an independent submittal, separate from the fabrication shop drawings. Upon approval, the Engineer of Record will forward two (2) sets of scaled, full size (minimum 24"x36") paper copies of the Approved (or Approved As Noted) Dunnage Plan to the MassDOT Director of Research and Materials. Calculations are not to be included in any submittal to the Research and Materials Section. The Dunnage Plan shall include the following:

- (a) Proposed layout of the Precast Concrete Bridge Elements for storage in yard and during shipping
- (b) Support and blocking point locations
- (c) Support and blocking materials

**E. Three-Sided Box.****1. Joints.**

The precast reinforced concrete three-sided frame shall be produced with grout-filled keyways per the details on the plans, the manufacturer's recommendations, and as approved by the Engineer. The ends shall be manufactured such that when the sections are laid together they will make a continuous line of frames with a smooth interior surface free of appreciable irregularities, and in compliance with the permissible variations.

**ITEM 995.01** (Continued)**2. Marking.**

The following information shall be clearly marked on the interior of each frame by indentation, waterproof paint, or other approved means:

- (a) Frame span and rise
- (b) Date of manufacture and lot number
- (c) Name and trademark of the manufacturer

**F. Pre-Production Meeting.**

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 Section *Quality Assurance – Precast Concrete, C. Acceptance, A. Inspection*), 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.

**G. Reinforcement.**

The reinforcing bars shall be installed in accordance with Section 901.62 of the Supplemental 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.

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.

**H. Tolerances.**

Fabrication shall comply with tolerances specified on the plans. Tolerances for steel reinforcement placement shall be in accordance with 901.62. In the absence of specifications on the plans, tolerances shall comply with the latest version of the PCI MNL 135, Precast Tolerance Manual.

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**ITEM 995.01** (Continued)**I. 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. Any defects or damage of more than “Category 2, Minor Defects” made to the concrete, due to form work, stripping or handling, shall be subject to repair or rejection, as defined in the *Repairs and Replacement* section. 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.

**J. Mixing of Concrete.**

The concrete shall be proportioned and mixed in conformance with the Fabricator’s MassDOT approved mix design and M4.02.10 Mixing and Delivery Fabrication shall not occur without prior MassDOT mix design approval. The Fabricator shall provide copies of batch tickets to the MassDOT Plant Inspector. The MassDOT Plant Inspector will verify if the batch ticket quantities are within the tolerances of the Fabricator’s MassDOT approved mix design.

**K. Placement of Concrete.**

Prior to the placement of concrete, the temperature of the forms shall be greater than or equal to 50°F. Quality Control inspection shall be performed by the Fabricator as specified in the *Fabricator Quality Control* section. Placement of the concrete shall not proceed until the MassDOT Plant Inspector is present to perform inspection and begin monitoring Fabricator Quality Control inspection activities, and is in compliance with specifications. The MassDOT Plant Inspector shall inspect and accept the placement of the reinforcing steel prior to the placement of concrete into the forms. The Fabricator shall verify all materials and equipment required for protecting and curing the concrete are readily available and meet the requirements of the *Final Curing Methods* section below. All items encased in the concrete shall be accurately placed in the position shown on the Plans and firmly held during the placing and setting of the concrete. Clearance from the forms shall be maintained by supports, spacers, or hangers and shall be of approved shape and dimension.

During placement, the concrete shall maintain a concrete temperature range between 50°F and 90°F. The Fabricator shall minimize the time to concrete placement (measured from start of mixing to completion of placement). In no event shall time to placement exceed 90 minutes. The Fabricator shall perform additional Quality Control sampling and testing on concrete that has been retempered with admixtures or hold-back water during the placement of the concrete as specified in the *Fabricator Quality Control* section above. Delays or shutdowns of over 30 minutes shall not be allowed during the continuous filling of individual forms.

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**ITEM 995.01** (Continued)**L. Consolidation of Concrete.**

Suitable means shall be used for placing concrete to prevent segregation or displacement of reinforcing steel or forms. The concrete shall be thoroughly consolidated by external or internal vibrators or a combination of both. Vibrators shall not be used to move concrete within the forms. Vibrators shall be used as specified in 901.63C and as directed by the Engineer. Concrete shall be placed and consolidated in a way that minimizes the presence of surface voids or bug holes on the formed surfaces. When used, self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.

**M. Finishing of Concrete.**

The finish of the Precast Concrete Bridge Elements shall be as indicated on the plans. Where Precast Concrete Bridge Elements have keyways for grout or closure pours, the surfaces of these shear keys shall be abrasive blasted prior to shipment. The Fabricator may utilize a surface retarder with water blast, sandblast, or a combination of both to achieve the desired keyway finish. At a minimum, the profile of the keyway surfaces shall be similar to that of 60 grit sand paper. The exposed reinforcing steel in the precast slab 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 Fabricator shall permanently mark each precast concrete bridge element with its type and/or piece mark, date of casting, and supplier identification either by stamp markings in fresh concrete, waterproof paint, or other approved means on a surface that will not be exposed after assembly.

**N. Exposed Surfaces of Precast Concrete Bridge Elements.**

As soon as conditions permit, before the concrete has fully hardened, all dirt, laitance, and loose aggregate shall be removed from the exposed concrete surfaces. Contractor shall not allow foot traffic on the uncured concrete until it has reached sufficient strength to prevent damage.

**O. Exposed Surfaces of Closure Pour Shear Keys.**

The closure pour shear key cast in the sides of the beam flanges shall have an exposed aggregate finish. The closure pour reinforcing steel and its coating shall not be damaged by the process for creating the exposed aggregate surface. Fabricator may utilize a surface retarder with water blast, abrasive blast, or a combination of both to achieve the desired shear key finish. The abrasive blast shall use oil free compressed air. The profile of the shear key surfaces shall be similar to that of 60 grit sand paper.

**P. Initial Curing Methods.**

After the placement of concrete and prior to concrete finishing, the Fabricator shall initiate initial curing methods when the concrete surface begins to dry, to reduce moisture loss from the surface. Application of one or more of the following initial curing methods shall occur immediately after the bleed water sheen has disappeared.

**1. Fogging.**

Fogging nozzles shall atomize water into a fog-like mist. The fog spray shall be directed and remain visibly suspended above the concrete surface, to increase the humidity of the air and reduce the rate of evaporation. Water from fogging shall not be worked into the surface during finishing operations and shall be removed or allowed to evaporate prior to finishing.



**ITEM 995.01** (Continued)**2. Liquid-applied Evaporation Reducers**

Evaporation reducers shall be sprayed onto the freshly placed concrete surface to produce an effective monomolecular film that reduces the risk of plastic-shrinkage cracking and rate of evaporation of the bleed water from the concrete surface. Evaporation reducers shall be applied in accordance with manufacturer's recommendations.

**Q. Intermediate Curing Methods.**

The Fabricator shall initiate intermediate curing methods if concrete finishing has taken place prior to the concrete reaching final set. The freshly finished concrete surface shall be protected from moisture loss, by the continuation of initial curing methods (fogging and evaporation reducers) until final curing methods are applied or by the use of liquid membrane-forming curing compounds (see *Liquid Membrane-Forming Compounds for Curing* section).

**R. Final Curing Methods.**

The Fabricator shall initiate and apply final curing methods to the concrete immediately after the following conditions are met:

- (a) Completion of concrete finishing
- (b) Final set of concrete
- (c) Concrete has hardened sufficiently enough to prevent surface damage

During fabrication of Precast Concrete Bridge Elements, the Fabricator shall maintain the required concrete temperature ranges throughout the entire duration of the final curing method cycle as specified herein. Controlled and gradual termination of the final curing method shall occur after all specified conditions are met. The concrete temperature shall be reduced at a rate not to exceed 36°F per hour until the concrete temperature is within 20°F of the ambient temperature outside of the final curing method enclosure. The Fabricator shall maintain a minimum concrete temperature of 40°F until 100% f'c is attained (see *Handling and Storage* section below).

**1. Water Spray Curing.**

All exposed concrete surfaces shall remain moist with a continuous fine spray of water throughout the entire duration of the final curing method cycle (see *Table 4: Final Curing Method Cycle for Water Spray*).

**Table 4: Final Curing Method Cycle for Water Spray**

Sustained Concrete Temperature	Final Curing Method Cycle Duration	Compressive Strength
50°F ≤ °F ≤ 90°F	≥ Five (5) days	≥ 80% f'c

**ITEM 995.01** (Continued)**2. Saturated Covers for Curing.**

All exposed concrete surfaces shall remain moist with a continuous application of saturated covers throughout the entire duration of the final curing method cycle (see *Table 5: Final Curing Method Cycle for Saturated Covers*). Saturated covers shall be allowed to dry thoroughly before removal to provide uniform, slow drying of the concrete surface.

**Table 5: Final Curing Method Cycle for Saturated Covers**

Sustained Concrete Temperature	Final Curing Method Cycle Duration	Compressive Strength
50°F ≤ °F ≤ 90°F	≥ Three (3) days	≥ 80% f <sub>c</sub>

Saturated covers, such as burlap, cotton mats, and other coverings of absorbent materials shall meet the requirements of AASHTO M 182, Class 3. Saturated covers shall be in good condition, free from holes, tears, or other defects that would render it unsuitable for curing concrete. Saturated covers shall be dried to prevent mildew when storing. Prior to application, saturated covers shall be thoroughly rinsed in water and free of harmful substances that are deleterious or cause discoloration to the concrete. Saturated covers shall have sufficient thickness and proper positioning onto the concrete surface to maximize moisture retention.

Saturated covers shall contain a sufficient amount of moisture to prevent moisture loss from the surface of the concrete. Saturated covers shall be kept continuously moist so that a film of water remains on the concrete surface throughout the entire duration of the final curing method cycle. The Fabricator shall not permit the saturated covers to dry and absorb water from the concrete. Use of polyethylene film (see *Polyethylene Film* section) may be applied over the saturated cover to potentially decrease the need for continuous watering.

**3. Sheet Materials for Curing.**

All exposed concrete surfaces shall remain moist with a continuous application of curing sheet materials throughout the entire duration of the final curing method cycle (see *Table 6: Final Curing Method Cycle for Curing Sheet Materials*).

**Table 6: Final Curing Method Cycle for Sheet Materials**

Sustained Concrete Temperature	Final Curing Method Cycle Duration	Compressive Strength
50°F ≤ °F ≤ 90°F	≥ Three (3) days	≥ 80% f <sub>c</sub>

**ITEM 995.01** (Continued)

Sheet Materials used for curing, such as polyethylene film, white burlap-polyethylene sheeting, and reinforced paper shall meet the requirements of ASTM C171 and the specifications herein. Sheet materials shall inhibit moisture loss and reduce temperature rise in concrete exposed to radiation from the sun during the final curing method cycle. Adjoining covers shall overlap not less than 12 inches. All edges of the covers shall be secured to maintain a moist environment.

**(a) Polyethylene Film.**

Polyethylene film shall meet the requirements of ASTM C171, consist of a single sheet manufactured from polyethylene resins, be free of visible defects, and have a uniform appearance. Careful considerations shall be taken by the Fabricator to prevent the film from tearing during storage and application, so as to not disrupt the continuity of the film (polyethylene film reinforced with glass or other fibers is more durable and less likely to be torn). The Fabricator shall monitor the application of the film to prevent uneven spots from appearing (mottling) on the concrete surface, due to variations in temperature, moisture content, or both. The Fabricator shall prevent mottling from occurring on the concrete surface by applying additional water under the film or applying a combination of polyethylene film bonded to absorbent fabric to the concrete surface to retain and evenly distribute the moisture.

Immediately following final finishing, polyethylene film shall be placed over the surface of the fresh concrete surface, so as to not damage the surface of the concrete and shall be placed and weighted so that it remains in contact with the concrete throughout the entire duration of the final curing method cycle. The film shall extend beyond the edges of the concrete surface. The film shall be placed flat on the concrete surface, avoiding wrinkles, to minimize mottling. Edges of adjacent polyethylene film shall overlap a minimum of 6 inches and be tightly sealed with the use of sand, wood planks, pressure-sensitive tape, mastic, or glue to maintain close contact with the concrete surface, retain moisture, and prevent the formation of air pockets throughout the entire duration of the final curing method cycle.

**(b) White Burlap-Polyethylene Sheeting**

White burlap-polyethylene sheeting shall meet the requirements of ASTM C171, be securely bonded to the burlap so to avoid separation of the materials during handling and curing of the concrete, and be applied in the same manner as the polyethylene film.

**(c) Reinforced Impervious Paper.**

Reinforced impervious paper shall meet the requirements of ASTM C171, consist of two sheets of kraft paper cemented together with a bituminous adhesive and reinforced with embedded cords or strands of fiber running in both directions, and be white in color. Reinforced impervious paper shall be treated to prevent tearing when wetted and dried.

Reinforced impervious paper can be reused so long as it is effective in retaining moisture on the concrete surface. The Fabricator shall visually inspect the reinforced impervious paper for all holes, tears, and pin holes from deterioration of the paper through repeated use by holding the paper up to the light. The paper shall be discarded and prohibited from use when the moisture is no longer retained.

After the concrete has hardened sufficiently to prevent surface damage, the concrete surface shall be thoroughly wetted prior to the application of the reinforced impervious paper, and be applied in the same manner as the polyethylene film.

**ITEM 995.01** (Continued)**4. Liquid Membrane-Forming Compounds for Curing.**

All exposed concrete surfaces shall remain moist with a continuous application of liquid membrane-forming compounds throughout the entire duration of the final curing method cycle (see *Table 7: Final Curing Method Cycle for Liquid Membrane-Forming Compounds*).

**Table 7: Final Curing Method Cycle for Liquid Membrane-Forming Compounds**

Sustained Concrete Temperature	Final Curing Method Cycle Duration	Compressive Strength
50°F ≤ °F ≤ 90°F	≥ Seven (7) days	≥ 80% f <sub>c</sub>

Liquid membrane-forming compounds shall meet the requirements of ASTM C 1315, Type I, Class A and shall exhibit specific properties, such as alkali resistance, acid resistance, adhesion-promoting quality, and resistance to degradation by ultraviolet light, in addition to moisture-retention capabilities. Liquid membrane-forming compounds shall consist of waxes, resins, chlorinated rubber, or other materials to reduce evaporation of moisture from concrete. Liquid membrane-forming compounds shall be applied in accordance with the manufacturer's recommendations.

Liquid membrane-forming compounds shall be applied immediately after the disappearance of the surface water sheen following final finishing. All exposed surfaces shall be wetted immediately after form removal and kept moist to prevent absorption of the compound, allowing the curing membrane to remain on the concrete surface for proper membrane moisture retention. The concrete shall reach a uniformly damp appearance with no free water on the surface prior to the application of the compound.

If patching or finishing repairs are to be performed prior to the application of the compound, the Precast Concrete Bridge Element shall be covered temporarily with saturated covers until the repairs are completed and the compound is applied. Only areas being repaired shall be uncovered during this period. While the saturated covers are removed to facilitate the patching process, the work shall continue uninterrupted. If for any reason the work is interrupted, saturated covers shall be placed onto the uncovered concrete surface, until the work continues and is completed, at which time the curing compound shall be applied to the repaired area.

Careful considerations shall be made by the Fabricator to determine if the evaporation rate is exceeding the rate of bleeding, thus causing the surface to appear dry even though bleeding is still occurring. Under such conditions, the application of liquid membrane-forming compounds to the concrete surface shall be delayed, in order to prevent bleed water from being sealed below the concrete surface and avert map cracking of the membrane films, reduction in moisture-retention capability, and reapplication of the compound. To diagnose and prevent this condition, the Fabricator shall place a transparent plastic sheet over a test area of the uncured and unfinished concrete surface and shall determine if any bleed water accumulates under the plastic.

**ITEM 995.01** (Continued)

The compound shall be applied in two applications at right angles to each other to ensure uniform and more complete coverage. On very deeply textured surfaces, the surface area to be treated shall be at least twice the surface area of a troweled or floated surface. In such cases, two separate applications may be needed, each at 200 ft<sup>2</sup>/gal., with the first being allowed to become tacky before the second is applied.

The curing compound shall be applied by power sprayer, using appropriate wands and nozzles with pressures between 25 and 100 psi. For very small areas such as repairs, the compound shall be applied with a wide, soft-bristled brush or paint roller. The compound shall be stirred or agitated before use and applied uniformly in accordance with the manufacturer's recommended rate. The Fabricator shall verify the application rates are in accordance with the manufacturer's recommended rate.

When the concrete surface is to receive paint, finishes, or toppings that require positive bond to the concrete, it is critical that the curing procedures and subsequent coatings, finishes, or toppings be compatible to achieve the necessary bond.

After the termination of the final curing method cycle has occurred, liquid membrane-forming compounds shall be removed by blast-cleaning from any concrete surface that is to receive paint, finishes, plastic concrete from secondary pour, grout, or any other toppings that require bonding to the concrete surface. These surfaces shall be further blast-cleaned to remove the cement matrix down to exposed aggregate to ensure proper bonding to the material. The method used to remove the curing compound shall not damage the reinforcement and coating. Compounds are prohibited on any concrete surface that will have a penetrating or coating type treatment such as a sealer, stain, or waterproofing membrane applied to it.

**5. Accelerated Curing.**

Accelerated curing shall use live steam or radiant heat with moisture in accordance with PCI MNL-116 as modified herein. The concrete temperature shall meet the maximum heat increase and cool down rates as specified herein. Concrete temperature monitoring shall meet the requirements of the *Temperature Monitoring* section. Excessive and fluctuating rates of heating and cooling shall be prohibited. The concrete temperature shall not exceed 158°F at any time. The Fabricator shall meet the following accelerated curing sequencing and requirements.

**(a) Initial Delay Period.**

The initial delay period shall be defined as the duration immediately following the placement of the concrete and the attainment of initial set of the concrete. The Fabricator shall determine the time of initial set in accordance with AASHTO T 197 specifications. Throughout the entire duration of the preset period, initial curing shall be implemented. The temperature increase period (see *Temperature Increase Period* section) shall not occur until initial set of the concrete is attained. During the initial delay period, the concrete temperature shall meet the following requirements:

- i. Concrete temperature rate of increase shall not exceed 10°F per hour.
- ii. Total concrete temperature increase shall not exceed 40°F higher than the placement concrete temperature or 100°F, whichever is less

**ITEM 995.01** (Continued)**(b) Temperature Increase Period.**

The temperature increase period shall be defined as the duration immediately following the completion of the initial delay period (after initial set) and immediately prior to the start of the constant maximum temperature period. Application of steam to the enclosure shall not occur until the initial delay period is complete. After the initial delay period is complete, all exposed concrete surfaces shall be cured in a moist environment where the concrete temperature increases at a rate not to exceed 36°F per hour.

**(c) Constant Maximum Temperature Period.**

The constant maximum temperature period shall be defined as the duration immediately following the completion of the temperature increase period and immediately prior to the start of the temperature decrease period. After the temperature increase period is complete, all exposed concrete surfaces shall be cured in a moist environment at a controlled and constant elevated temperature throughout the entire duration of the constant maximum temperature period. Termination of the constant maximum temperature period and the start of the termination decrease period shall occur after all specified conditions are met (see *Table 8: Constant Maximum Temperature Period*).

**Table 8: Constant Maximum Temperature Period**

Sustained Concrete Temperature	Constant Maximum Temperature Period	Compressive Strength
120°F ≤ °F ≤ 158°F	6 hrs ≤ Time ≤ 48 hrs	≥ 80% f <sub>c</sub>

**(d) Temperature Decrease Period.**

After the constant maximum temperature period is complete, the concrete temperature shall be cured in a moist environment at a controlled and reduced rate not to exceed 36°F per hour until the concrete temperature is within 20°F of the ambient temperature outside of the curing enclosure.

**S. Stripping.**

The Fabricator shall not strip forms or handle the Precast Concrete Bridge Element until Quality Control compressive strength cylinders attain a minimum compressive strength of 80% Design Strength (f<sub>c</sub>) or the value indicated on the approved drawings has been achieved. After removal from the form, all exposed concrete surfaces shall continue to be cured in conformance with the *Final Curing Methods* sections until completion.

**T. Handling and Storage of Precast Concrete Bridge Elements.**

Precast Concrete Bridge Elements may be exposed to temperatures below freezing (32°F) when the chosen curing cycle has been completed, provided that the following conditions are met:

- (a) Precast Concrete Bridge Elements are protected from precipitation with polyethylene curing covers until 100% f<sub>c</sub> is attained
- (b) Precast Concrete Bridge Elements maintain a minimum concrete temperature of 40°F until 100% f<sub>c</sub> is attained

**ITEM 995.01** (Continued)

Precast Concrete Bridge Elements damaged during handling and storage will be repaired or replaced at MassDOT's direction at no cost to MassDOT. Precast Concrete Bridge Elements shall be lifted at the designated points by approved lifting devices embedded in the concrete and in accordance with proper lifting and handling procedures. Storage areas shall be smooth and well compacted to prevent damage due to differential settlement. Precast Concrete Bridge Elements shall be supported on the ground by means of continuous blocking, in accordance with the approved dunnage plan.

Precast Concrete Bridge Elements shall be loaded on a trailer with blocking as described above, in accordance with the approved dunnage plan. Shock-absorbing cushioning material shall be used at all bearing points during transportation of the Precast Concrete Bridge Elements. Blocking shall be provided at all locations of tie-down straps. Precast Concrete Bridge Elements stored prior to shipment shall be inspected by the Contractor prior to being delivered to the site to identify damage that would be cause for repair or rejection.

**U. Repairs and Replacement.**

In the event defects are identified, they shall be classified in the following categories and a non-conformance report (NCR) shall be filed if required. The NCR shall be submitted to MassDOT for review. Defects in all categories shall be documented by plant Quality Control personnel and made available to MassDOT upon request. Any required repairs shall utilize materials listed on the MassDOT QCML.

Where noted, defects shall be repaired according to the PCI Northeast Region Guidelines for Resolution of Non-Conformances in Precast Concrete Bridge Elements, Report Number PCINE-18-RNPCBE. Please note that reference to PCINE-18-RNPCBE is made for repair details only. In the case of conflicts with this Special Provision, this Special Provision shall govern.

**1. Category 1, Surface Defects.**

Category 1 defects do not need to be repaired, and an NCR does not need to be filed. Surface defects are defined as the following:

- (a) Surface voids or bug holes that are less than 5/8-inch in diameter and less than 1/4-inch deep, except when classified as Category 4
- (b) Cracks less than or equal to 0.006 inches wide
- (c) Cracks less than or equal to 0.125 inches wide on surfaces that will receive a field-cast concrete overlay

**2. Category 2, Minor Defects.**

Category 2 defects shall be repaired, but an NCR does not need to be filed. Minor defects are defined as the following:

- (a) Spalls, honeycombing, surface voids that are less than 2 inches deep and have no dimension greater than 12 inches
- (b) Cracks less than or equal to 0.016 inches that will not receive a concrete overlay
- (c) Broken or spalled corners that will be covered by field-cast concrete

Minor defects shall be repaired according to PCINE-18-RNPCBE. Cracks shall be sealed according to the PCI Repair Procedure #14 in PCINE-18-RNPCBE.

**ITEM 995.01** (Continued)**3. Category 3, Major Defects.**

For Category 3 defects, the Fabricator shall prepare an NCR that documents the defect and describes the proposed repair procedure. The NCR shall be submitted to MassDOT for approval prior to performing the repair. Major defects are defined as the following:

- (a) Spalls, honeycombing and surface voids that are deeper than 2 inches or have any dimension greater than 12 inches, when measured along a straight line
- (b) Concentrated area of defects consisting of four or more Category 2 Defects within a 4-square foot area.
- (c) Exposed reinforcing steel
- (d) Cracks greater than 0.016 inches and less than or equal to 0.060 inches in width that will not receive a concrete overlay
- (e) Bearing area spalls with dimensions not exceeding 3 inches
- (f) Cracks, spalls and honeycombing that will be encased in cast in place concrete need not be repaired, but the limits and location of the defects shall be documented with an NCR

Upon MassDOT approval, defects and cracks shall be repaired according to PCINE-18-RNPCBE and this specification. All repairs shall be completed at the expense of the Contractor.

**4. Category 4, Rejectable Defects.**

Rejectable defects as determined by the MassDOT Inspector, RMS, and Engineer may be cause for rejection. Fabricator may submit an NCR with a proposed repair procedure, requesting approval. Some rejectable defects are defined as the following:

- (a) Surface defects on more than 5% of the surface area which will be exposed to view after installation
- (b) Minor defects that in total make up more than 5% of the surface area of the unit
- (c) Cracks greater than 0.060 inches in width except as noted in Category 1
- (d) Elements fabricated outside of the specified tolerances
- (e) MassDOT compressive strength testing that does not meet the specified Design Strength,  $f'_c$

**V. Loading.**

Prior to the Fabricator loading the Precast Bridge Element on to the truck for shipping, the Fabricator shall provide the MassDOT Plant Inspector and RMS a minimum seven (7) days' notice of the Fabricator's intent to load the Precast Bridge Element. Inspection by the MassDOT Plant Inspector shall take place while the element is still on dunnage in the yard. The element shall not be loaded onto the truck until the MassDOT Plant Inspector has performed the inspection.



**ITEM 995.01** (Continued)**W. Shipping.**

Prior to shipment, the Fabricator shall perform the following actions and provide the required documentation to the MassDOT Plant Inspector:

- (a) Precast Concrete Bridge Elements shall remain at the Fabricator's plant for a minimum of 7 days after cast date.
- (b) QC Inspection Reports shall be signed by the Quality Control Manager and provided to the MassDOT Plant Inspector.
- (c) QC Compressive Strength Test Report Forms attaining Design Strength,  $f'c$  for the Precast Concrete Bridge Element's representative Sublot shall be generated by the Fabricator and provided to the MassDOT Plant Inspector.
- (d) Certificate of Compliance shall be generated by the Fabricator as described under the Fabricator Quality Control section and provided to the MassDOT Plant Inspector.
- (e) All MassDOT RMS approved Corrective Actions submitted on the Non-Conformance Reports (NCR), shall be verified to have been completed by the MassDOT Plant Inspector and Quality Control Manager.
- (f) All NCRs shall be signed off by the Quality Control Manager, MassDOT Inspector and MassDOT RMS.

**X. Delivery.**

Upon Delivery, the following documentation shall be provided to 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.

The Contractor shall inspect Precast Concrete Bridge Elements upon receipt at the site. Precast Concrete Bridge Elements damaged during delivery shall be repaired or replaced at MassDOT's direction at no cost to MassDOT.

**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 and Quality Control Plan for Precast Concrete Bridge Element Assembly.

**ITEM 995.01** (Continued)

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 subplot.
- (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 and Quality Control Plan for Precast Concrete Bridge Element Assembly.**

Prior to the erection, the Contractor shall submit an Erection Procedure and a Quality Control Plan for Precast Concrete Bridge Element Assembly 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 and Quality Control Plan for Precast Concrete Bridge Element 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 Precast Concrete Bridge Element 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, Erection and the applicable sections in Chapter 8 of the PCI Design Handbook (seventh 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 Density Fill – 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 995.01** (Continued)

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.

**2. Quality Control Plan for Precast Concrete Bridge Element Assembly**

The Quality Control Plan for Precast Concrete Bridge Element 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 Precast Concrete Bridge Elements shall be submitted on full size 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. The approval of this document will serve as a guideline for setting interim concrete and grout strengths and curing procedures to allow construction to proceed without waiting for the final in-service strengths to be achieved.

The following list details the minimum criteria that should be included in the Quality Control Plan for Precast Concrete Bridge Element Assembly:

- (a) A detailed schedule showing the sequence of operations that the Contractor will follow. The schedule shall include a timeline for installation of all major elements of the bridge accounting for the installation of temporary works and cure times of grouts or closure pour concrete and other selected materials.
- (b) Calculations that support the schedule outlined above should be included verifying that the selected materials have adequate interim strength to proceed from one step to another. Final material strengths are not normally required until the bridge is opened to vehicular traffic. The minimum factor of safety of two (2) will be required for the interim strength of grouts and closure pour concrete before construction is allowed to proceed to subsequent steps. The factor of safety is applied to the service loads that are supported by the elements and materials during various stages of construction. For example, if the Contractor calculates that the grout between the precast pier cap and pier wall requires a strength of 100 psi to support the dead load of the beams in the next step, a cylinder break of 200 psi will be required prior to allowing the pier cap to be loaded with the beams. The required strength of materials for subsequent construction stages shall also be calculated and the material strength verified.
- (c) The Contractor is responsible for determining the center of gravity for all elements. Special care shall be used for unusual elements that are not symmetric. These elements may require special lifting hardware to allow for installation in a plumb or flat position.

**ITEM 995.01** (Continued)

- (d) Plan of the work area, depicting items such as temporary earth support, utilities within the immediate vicinity of the work, drainage structures, etc. The Contractor shall coordinate the various subcontractors that will need to occupy the same area and shall ensure that there are no conflicts. For example, if the Contractor is having different Subcontractors prepare and submit plans for temporary earth support and demolition, and the earth support is required to be installed prior to the demolition, it shall be the Contractor's responsibility to ensure that the Quality Control Plan for Precast Concrete Bridge Element Assembly submission allows both operations to be performed without field modification.
- (e) Details of all equipment that shall be employed for the construction of the bridge.
- (f) Methods of providing temporary support of the elements. Include methods of adjusting and securing the element after placement.
- (g) Vertical Adjustment Assemblies to be used as a means of setting precast concrete footings to the correct elevations.
- (h) Procedures for controlling the overall horizontal dimensions and the vertical elevations as each precast concrete bridge element is erected by using the tolerance limits of the joints as detailed on the plans.
- (i) Methods for curing grout.
- (j) Proposed methods for installing non-shrink grout and the sequence and equipment for the grouting operation.
- (k) Methods for sealing the keyways in preparation for filling with non-shrink grout, including the use of backer rods. The Contractor shall not assume that the backer rods will restrain the pressure from the grout in vertical grout joints. Provide additional forming to retain the backer rod.

**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 Pour Keyways.**

Immediately prior to erecting the Precast Concrete Bridge Elements, the closure pour shear keys 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 and precast concrete using a high-pressure water blast. The 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 shear keys 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 and Quality Control Plan for Precast Concrete Bridge Element Assembly. 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.

**ITEM 995.01** (Continued)

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.

Suitable spreaders shall be used during lifting so that only a vertical pull will be made on the lifting device. A non-vertical lifting force may be permitted if prior written approval is given by the Engineer. 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.

Precast components shall be pre-bed with non-shrink grout thicker than shim stacks prior to placing other precast elements on top of them.

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. Three-Sided Box.**

Backfilling operations shall not begin until the following checks have been made:

- (a) The 3-sided box to footing key joints are grouted as shown on the plans;
- (b) The joints between exterior 3-sided box bridge elements and wingwall stems are complete as shown on the plans;
- (c) All joint seals are properly placed.

Backfill shall be paid for under separate items. The backfilling procedures shall be in accordance with Sections 120, 150, and 170 of the Standard Specifications and Supplemental Specifications modified as follows:

- (a) Fill shall be placed and compacted in layers not exceeding one foot in depth;
- (b) Dumping of fill shall not be allowed any nearer to the structure than 3.25 feet from a vertical plane extending from the back of the footing;
- (c) Backfill shall be placed as symmetrically as possible around the structure with differential depths of backfill on each side of the structure not exceeding 1.5 feet with respect to each other;
- (d) Compaction shall be achieved using hand compaction equipment for all fill within one foot of the structure;
- (e) The bare structure shall not be crossed by any equipment heavier than that specified by the frame manufacturer. All damage resulting from equipment damage shall be rectified to the satisfaction of the Engineer at no cost to the Department;
- (f) Construction equipment will not be permitted atop an uncompleted structure;
- (g) Construction equipment whose weight exceeds the design capacity shall not be permitted atop the completed structure under any circumstances;
- (h) The use of vibratory rollers for compaction purposes will not be permitted.

**ITEM 995.01** (Continued)

A representative of the manufacturer shall be on site at the commencement of the installation, at no cost to the Department, to assist the Contractor. The representative shall offer advisory assistance only and shall not supplant the Contractor's representative, or the Engineer.

**G. 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 Cement Mortar (M4.02.15) or grout.

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.

**CAST-IN-PLACE CONCRETE**

The work under these headings shall conform to the relevant provisions of Subsections 901 and the relevant provisions of Materials Section M4 of the Standard Specifications and the following:

The work under the below headings include furnishing, transporting and installing cast-in-place elements as shown on the plans. The labor and materials associated with the following items shall be considered as included in the unit price per cubic yard of concrete or per each unit, as stated by the Contractor and as approved by the Engineer in the respective "Basis for Partial Payments": all preformed and pre-molded filler, all form liners, joint sealer, materials complete in place at construction joints, caulking, closed cell foam, weep holes and all other work considered as incidental to the work involved in furnishing and placing the concrete to the lines and grades on the plans and all other work not covered in the schedule of basis for Partial Payments or for which payment is not provided elsewhere in the Contract.

**Compressive Strength**

Minimum 28 Day design compressive strength shall be as noted on the plans or these provisions.

**4000 PSI, 3/4 INCH, 585 HP CEMENT CONCRETE**

- Transition Wall – between three-sided box and wingwall

**5000 PSI, 3/4 INCH, 685 HP CEMENT CONCRETE**

- Safety Curb Extension – between three-sided box and highway guardrail transition

The work does not include any items listed separately in the proposal. Joint fillers, joint sealers, and construction joints shall be considered as incidental to the work involved in the furnishing and placing of concrete.

**ITEM 995.01** (Continued)**REINFORCEMENT**

Steel reinforcement shall conform to the requirements of AASHTO M31 Grade 60 and Standard Specifications Section M8.01.7. All reinforcing steel shall be epoxy coated. Mechanical splices shall conform to the requirements of Standard Specifications Section M8.01.9. and reinforcing supports shall be considered as included in the price per pound of Steel Reinforcement for Structures - Epoxy Coated, as stated by the Contractor, and approved by the Engineer in the "Basis for Partial Payments".

**SAWING AND SEALING JOINTS IN ASPHALT PAVEMENT AT BRIDGES**

The work to be done under this heading consists of making a sealed kerf across the full width of the finished asphalt pavement at bridge abutments where indicated 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 M3.05.3 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.

**BASIS OF PAYMENT**

Item 995.01 will be paid for at the Contract Lump Sum price, which price shall include all labor, equipment, materials, engineering services, submittal, and all incidental costs required to complete the work. Lump Sum breakdown quantities are estimated but not guaranteed, as clarified in the following Schedule of Basis for Partial Payment below.

**ITEM 995.01** (Continued)**SCHEDULE OF BASIS FOR PARTIAL PAYMENT**

Within 10 days of the Notice to Proceed, the Contractor shall submit on his/her proposal form a schedule of unit prices for the major component Sub-Items that make up Item 995.01. as well as his/her total bridge structure Lump Sum cost for Bridge Structure, Bridge No. S-23-012 (CCL). The bridge structure Lump Sum breakdown quantities provided in the proposal form 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 on the proposal form applies only to Bridge Structure, Bridge No. S-23-012 (CCL). 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 995.01 BRIDGE STRUCTURE, BRIDGE NO. S-23-012 (CCL)**

<u>SUB-ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>QTY.</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
482.31	SAWING AND SEALING JOINT IN ASPHALT PAVEMENT AT BRIDGES	85	FT		
904.3	5000 PSI, 3/4 INCH, 685 HP CEMENT CONCRETE	2.5	CY		
904.4	4000 PSI, 3/4 INCH, 585 HP CEMENT CONCRETE	4.5	CY		
910.1	STEEL REINFORCEMENT FOR STRUCTURES – EPOXY COATED	1,335	LB		
916.002	PRECAST HIGHWAY GUARDRAIL TRANSITION	4	EA		
931.16	PRECAST CONCRETE 3-SIDED BOX	8	EA		
931.17	PRECAST CONCRTE PEDESTAL WALL	4	EA		
931.18	PRECAST CONCRETE APPROACH SLAB	10	EA		
931.19	PRECAST CONCRETE WINGWALL	4	EA		
931.20	PRECAST CONCRETE FOOTING	8	EA		
965	MEMBRANE WATERPROOFING FOR BRIDGE DECKS	1,350	SF		
970	DAMP-PROOFING	3,175	SF		
975.1	METAL BRIDGE RAIL (3 RAIL), STEEL (TYPE S3-TL4)	60	FT		

TOTAL LUMP SUM FOR ITEM 995.01 =

\*\*\*END OF DOCUMENT A00801\*\*\*



DOCUMENT A00802

# **DETAIL SHEETS**

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**THE COMMONWEALTH OF MASSACHUSETTS  
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
10 PARK PLAZA, BOSTON MA**

**-PRELIMINARY ESTIMATE OF QUANTITIES – DETAIL SHEET**

**Town:** SPENCER **Road:** North Spencer Road (Route 31)  
Bridge S-23-012

**Stations:** **Type:** Major Collector

STA. 0+30.00 TO STA. 4+85.00 North Spencer Rd

STA. 200+15.00 TO STA. 201+42.99 Hastings Rd

**Date:** March 11, 2024

Unclassified Excavation	1,595 CY	Gravel Borrow	800 CY
Class B Rock Excavation	85 CY	Loam For Roadsides	350 CY
Ordinary Borrow	5 CY		

**PAVEMENT NOTES:**

**PROPOSED FULL DEPTH CONSTRUCTION  
(NORTH SPENCER ROAD AND HASTINGS ROAD):**

**AREA = 11,697 S.F.**

**SURFACE:** 1-1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER

**INTERMEDIATE:** 2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER

**BASE:** 4" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER

**SUBBASE:** 12" GRAVEL BORROW

**PROPOSED PAVEMENT MILLING AND OVERLAY  
(NORTH SPENCER ROAD AND HASTINGS ROAD):**

**AREA = 2,057 S.F.**

**SURFACE:**

1-1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER  
(SSC-B-9.5-P) OVER

ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/SY OVER  
EXISTING PAVEMENT

FINE MILL VARIABLE DEPTH (0.0" TO 2.5") TO MEET PROPOSED

**GRADING**

**PROPOSED HMA BRIDGE WEARING COURSE  
(NORTH SPENCER ROAD):**

**AREA = 1,010 S.F.**

**SURFACE:**

1-1/2" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER  
(SSC-B-9.5-P) OVER

**PROTECTIVE:**

VARIABLES 1-1/2" TO 8" SUPERPAVE PROTECTIVE COURSE - 9.5  
(SPC-B-9.5) OVER

MEMBRANE WATERPROOFING FOR BRIDGE DECKS

**PROPOSED LAWNS AND SLOPES**

**AREA = 8,556 S.F.**

**SURFACE:**

4" LOAM AND NATIVE SEED

**ITEM 101. CLEARING AND GRUBBING**

<u>STATION</u>	<u>LT/RT</u>	<u>STATION</u>	<u>(SF) *AREA</u>
1+05	RT	2+21	1,355
1+23	LT	2+43	2,124
2+63	LT	4+01	1,999
200+15	RT	4+31	2,404
200+15	LT	201+47	1,853

**ITEM 102.1 TREE TRIMMING**

<u>BASELINE</u>	<u>STATION</u>	<u>LT/RT</u>	<u>(FT) QUANTITY</u>
N Spencer	0+30	RT	169
	1+65	LT	82
	2+74	LT	73
	3+93	LT	103
Hastings	200+57	LT	65
	200+96	RT	46

**ITEM 102.511 TREE PROTECTION – ARMORING & PRUNING**

As necessary for protection of trees adjacent to work areas.

**ITEM 150. ORDINARY BORROW**

Based on the Earthwork Quantity Worksheet, this job has an abundant amount of waste material which can be assumed to be used for new fill.

**ITEM 452 ASPHALT EMULSION FOR TACK COAT**

From Proposed Full Depth Const. Areas (Over Base Course)  
 From Proposed Full Depth Const. Areas (Over Intermediate Course)  
 From Mill and Overlay Areas

**ITEM 453. HMA JOINT ADHESIVE**

At Project Limits &amp; Longitudinal Joints:

N Spencer Rd		STA	LENGTH (FT)
	Start Mill and Overlay	1+22.8	27.8
	Start Full Depth	1+47.8	28.8
	Start Mill and Overlay	4+00.0	34.1
	End Mill and Overlay	4+25.0	<u>33.5</u>
	Sub Total:		124.2 FT
Hastings Rd			
	Start Mill and Overlay	200+15.0	21.1
	Start Full Depth	200+37.9	<u>22.8</u>
	Sub Total:		43.9 FT
	Total		168.1 FT

**ITEM 505. GRANITE CURB TYPE VA5 - STRAIGHT****N SPENCER ROAD**

<u>STATION</u>	<u>STATION</u>	<u>LT/RT</u>
2+16	2+33	LT
1+97	2+14	RT
2+74	2+92	LT
2+55	2+68	RT

**ITEM 570.1 HOT MIX ASPHALT CURB TYPE 1**

<u>BASELINE</u>	<u>STATION TO</u>	<u>BASELINE</u>	<u>STATION</u>	<u>LT/RT</u>
Hastings	201+02.0	N Spencer	04+00.0	RT

**ITEM 620.13 GUARDRAIL, TL-3 (SINGLE FACED)**

<u>STATION</u>	<u>TO</u>	<u>STATION</u>	<u>LT/RT</u>	<u>LENGTH</u>
1+56		1+84	RT	28.125
3+04		3+20	LT	15.625
201+17		201+23	LT	6.250

**ITEM 627.93**      **GUARDRAIL FLARED END TREATMENT, TL-3**

BASELINE	STATION	TO	STATION	LT/RT
N Spencer Road	1+17		1+56	RT
N Spencer Road	1+64		2+03	LT
N Spencer Road	3+20		3+59	LT
Hastings Road	200+85		201+17	LT

**ITEM 628.24**      **TRANSITION TO BRIDGE RAIL**

BASELINE	STATION	LT/RT	BASELINE	STATION	LT/RT
N Spencer Road	1+56	RT	N Spencer Road	1+84	RT
N Spencer Road	2+03	LT	N Spencer Road	2+37	LT
N Spencer Road	2+70	LT	N Spencer Road	3+04	LT

**ITEM 628.26**      **CURVED TRANSITION TO BRIDGE RAIL**

N Spencer Road	2+51	RT	Hastings Road	201+23	LT
----------------	------	----	---------------	--------	----

**ITEM 628.305**      **TEMPORARY IMPACT ATTENUATOR, NON-REDIRECTIVE, TL-3**

One on each end of barricade

**ITEM 628.4**      **TEMPORARY IMPACT ATTENUATOR, REMOVED AND RESET**

To relocate Impact Attenuators when moving from Stage 1 to Stage 2 of Traffic Management Plan

**ITEM 630.2**      **HIGHWAY GUARD REMOVED AND DISCARDED**

STATION	TO	STATION	LT/RT
1+75		2+63	RT
2+25		3+09	LT

**ITEM 657.**      **TEMPORARY FENCE**

STATION	TO	STATION	LT/RT
1+46		2+63	LT
2+75		3+64	LT

And as needed for Stage 2 after Temporary Fence R&R

**ITEM 657.5      TEMPORARY FENCE REMOVED AND RESET**

For relocating Temporary Fence from Stage 1 location to Stage 2 location.

STATION	TO	STATION	LT/RT
1+46		2+09	RT
2+51		3+54	RT

**ITEM 697.2      FLOATING SILT FENCE**

STATION	TO	STATION	LT/RT
2+47		2+69	LT
2+09		2+35	RT

**ITEM 751.      LOAM FOR ROADSIDES**

BASELINE	STATION	LT/RT	BASELINE	STATION	LT/RT	AREA (SF)
N Spencer	2+23	LT	N Spencer	1+54	LT	119
N Spencer	1+67	LT	N Spencer	2+41	LT	816
N Spencer	2+75	LT	N Spencer	3+56	LT	469
N Spencer	3+69	LT	N Spencer	4+01	LT	57
N Spencer	1+31	RT	N Spencer	2+20	RT	3,246
Hastings	200+15	LT	Hastings	201+42	LT	1,195
Hastings	200+15	RT	N Spencer	4+26	RT	2,654

**ITEM 765.21      ANNUAL CROP COVER FOR NATIVE SEEDING**

BASELINE	STATION	LT/RT	BASELINE	STATION	LT/RT	AREA (SF)
N Spencer	2+23	LT	N Spencer	1+54	LT	119
N Spencer	1+67	LT	N Spencer	2+41	LT	816
N Spencer	2+75	LT	N Spencer	3+56	LT	469
N Spencer	3+69	LT	N Spencer	4+01	LT	57
N Spencer	1+31	RT	N Spencer	2+20	RT	3,246
Hastings	200+15	LT	Hastings	201+42	LT	1,195
Hastings	200+15	RT	N Spencer	4+26	RT	2,654



**ITEM 765.451 PART SHADE ROADSIDE MIX**

BASELINE	STATION	LT/RT	BASELINE	STATION	LT/RT	AREA (SF)
N Spencer	2+23	LT	N Spencer	1+54	LT	119
N Spencer	1+67	LT	N Spencer	2+41	LT	816
N Spencer	2+75	LT	N Spencer	3+56	LT	469
N Spencer	3+69	LT	N Spencer	4+01	LT	57
N Spencer	1+31	RT	N Spencer	2+20	RT	3,246
Hastings	200+15	LT	Hastings	201+42	LT	1,195
Hastings	200+15	RT	N Spencer	4+26	RT	2,654

**ITEM 765.635 NATIVE SEEDING AND ESTABLISHMENT**

BASELINE	STATION	LT/RT	BASELINE	STATION	LT/RT	AREA (SF)
N Spencer	2+23	LT	N Spencer	1+54	LT	119
N Spencer	1+67	LT	N Spencer	2+41	LT	816
N Spencer	2+75	LT	N Spencer	3+56	LT	469
N Spencer	3+69	LT	N Spencer	4+01	LT	57
N Spencer	1+31	RT	N Spencer	2+20	RT	3,246
Hastings	200+15	LT	Hastings	201+42	LT	1,195
Hastings	200+15	RT	N Spencer	4+26	RT	2,654

**ITEM 767.121 SEDIMENT CONTROL BARRIER**

**North Spencer Road**

STATION	LT/RT	TO	STATION	LT/RT
1+23	LT		2+35	LT
2+85	LT		3+66	LT
1+06	RT		2+07	RT
1+96	RT		2+07	RT
3+51	RT		4+26	RT

**Hastings Road**

200+15	LT	201+34	LT
200+15	RT	201+31	RT

**ITEM 769. PAVEMENT MILLING MULCH UNDER GUARDRAIL**

STATION	TO	STATION	RT
1+07		2+14	LT
1+54		2+33	LT
2+74		3+69	LT
Hastings 200+71		201+43	LT

**ITEM 828.06 GROUND MOUNTED SIGN PANEL - REMOVED AND STACKED**

For the removal and stacking of the following signs as noted on the plans.

BRIDGE UNDER REPAIR/W13-1	2
UNITED CHURCH OF CHRIST (PRIVATE)	1

**ITEM 832. WARNING-REGULATORY AND ROUTE MARKER - ALUMINUM PANEL (TYPE A)**

STATION	LT/RT
3+22	RT

**ITEM 847.1 SIGN SUPPORT (N/GUIDE) + ROUTE MARKER - W/ 1 BRKWAY POST ASSEMBLY -STEEL**

STATION	LT/RT
3+22	RT
3+27	RT

**ITEM 866.206 6 INCH REFLECTORIZED WHITE LINE (POLYUREA) (RECESSED)**

STATION	TO	STATION	LT/RT
1+23		4+25	LT
1+23		2+53	RT
3+55		4+25	LT

**ITEM 866.212 12 INCH REFLECTORIZED WHITE LINE (POLYUREA) (RECESSED)**

STATION	RT/LT	TO	STATION	RT/LT	TYPE
N Spencer STA 2+86	RT		3+16	LT	STOP LINE

**ITEM 867.206      6 INCH REFLECTORIZED YELLOW LINE (POLYUREA) (RECESSED)**

N Spencer	STATION	TO	STATION
	1+23		2+71
	3+20		4+25
Hastings	200+50		201+26

**ITEM 874.      STREET NAME SIGN**

STATION	LT/RT
3+27	RT

**ITEM 874.41      TRAFFIC SIGN REMOVED AND DISCARDED**

STATION	LT/RT
3+22	RT

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DOCUMENT A00808

# **PROJECT UTILITY COORDINATION FORM**

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# Project Utilities Coordination (PUC) Form

CONTACTS AND GENERAL UTILITY INFORMATION

Revision  
Date:

<b>City/Town:</b> Spencer	<b>Project File #:</b> 609179	<b>Utility Pole Set:</b> National Grid Electric
<b>Route/Street:</b> Route 31 over Seven Mile River	<b>Resident Engineer:</b> TBD	<b>Scheduled Ad Date:</b> 3/16/2024
	<b>Mass DOT PM:</b> Stephen Soma	<b>Total Poles Relocated:</b> 3 Proposed, 1 Remove, 1 R&R

12/15/2023

PRINTED

Consultant:		Contact:	Office #	Cell #	Office #	Cell #	Email								
Bayside Engineering		Brian Boucher	781-932-3201	x 605	781-932-3201 x 605		bboucher@baysideengineering.com								
Utility Company	Contact	Office #	Cell #	Email	Scope, Budget, Duration Submitted		Reimbursement		Notes	Potential for District Initiated Early Relocation *		Utilities On Bridge/Structure		Utilities Underground (UG) /Aerial (OH)	
					Yes	No	Non-Reimb'l	YES		NO	YES	NO	UG	OH	
National Grid Electric	Sandra Annis	(781) 890-5070 x6952	(413) 531-8982	sandra.annis@nationalgrid.com	X		X				X				X
Comm-Tract	Bryan Hopkins	(781) 890-5070 x6952	(617) 686-6111	bhopkins@comm-tract.com	X		X				X				X
Charter	John Yurkevicius		(508) 294-7527	john.yurkevicius@charter.com	X		X				X				X
Verizon	Paul Styspeck		(413) 575-7058	paul.m.styspeck@verizon.com	X		X				X				X
Interim Highway Superintendent	Gary Kellaheer	(508) 885-7525		gkellaheer@spencerma.gov					Contact information only						
Highway Foreman	Eben Butler	(508) 885-7515		ebutler@spencerma.gov					Contact information only						

**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 the District Construction Office. These advance notifications are to be identified in the Contractor's Schedules (Pre-Con preparation, Baseline, Subnets, and Updated/Monthly Schedules)

**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 Spencer). The information provided is the best available information prior to project advertisement.

PUC FORM - CONTINUED

Is 'enabling' (prep) work, by the Contractor, necessary prior to the start of the first series of utility relocations:	Yes X	No
Has any of the Utility work been identified to work concurrently	Yes	No X

12/15/2023  
REVISED



RESPONSIBLE PARTY	DESCRIPTION - Utility Relocation Phases, Tasks and Activities	Estimated Duration (Work Days) by Utilities (Lead time not included)	Concurrent / Exclusive Utility Work				Access Restraint & Limitations of Operations Notes	
			Exclusion of Utility on site	Concurrent Utilities with other Utility working on site	Contractor Off-Site operations on-site physical construction (While Utility is working on-site)	Contractor Concurrent Utility are working on-site same vicinity but NOT in the Utility area	Potential Access Restraint (Yes/No)	Reason/Note (optional) Contractor?
C = Contractor	Enabling work by the Contractor - Prior to overhead utility relocations contractor will need to perform any necessary clearing & grubbing, grading and tree removal as specified in Contract Documents. Schedule a utility walk-through after pre-construction meeting. Coordinate with MassDOT Survey to locate pole locations. Poles must be relocated prior to Stage 1 demolition.							
C	<b>UTILITY OPERATIONS - Overhead</b>							
Task-1	Remove Old Electric Poles (Note 7)							
U	Replace (2) poles, install (2) poles	12	X				X	No
U	Replace/install (6) anchors and remove (2) anchors.	20	X				X	No
U	Install approximately 1,877 FT. 3 Phase Primary secondary and equipment.	5	X				X	No
U	Removal of old conductors and equipment	5	X				X	No
	<b>Sub-Total</b>	<b>42</b>						
Task-2	<b>Comm-Tract</b>							
U	Pole Preparation and Framing - Fiber Cable Installation	1	X				X	No
U	Fiber Cable Installation	1	X				X	No
U	Fiber Splicing - Removal of pre-existing Fiber Cable	1	X				X	No
	<b>Sub-Total</b>	<b>3</b>						
Task-3	<b>Charter</b>							
U	Construct New Coax onto new strand	2	X				X	No
U	Rebuild or swing fiber onto new pole line	2	X				X	No
U	Splice and activate coax/fiber cable	3	X				X	No
U	Wreck out old coax and fiber	1	X				X	No
	<b>Sub-Total</b>	<b>8</b>						
Task-4	<b>Verizon</b>							
U	Verizon Line - Place new guywires and associated anchor	1	X				X	No
U	Verizon Line - Place 10M strand & new aerial CU cable	2	X				X	No
U	Verizon Line - Place new aerial CU stub cable	1	X				X	No
U	Verizon Splice - Splice new aerial CU cable & stubs	5	X				X	No
U	Verizon Splice - Conf. Test new aerial CU cable & stubs	2	X				X	No
U	Verizon Splice - Trimout aerial CU cables	2	X				X	No
U	Verizon Line - Remove aerial CU cables	2	X				X	No
U	Verizon Line - Remove Old remaining Poles & Anchors	1	X				X	No
	<b>Sub-Total</b>	<b>16</b>						
<b>IMPORTANT BASIS NOTES - FOR CONTRACTOR</b>								
1 Unless otherwise specified in the MassDOT Construction Contract, or unless specifically noted within this PUC Form, these durations (herein) are based upon the Contractor providing unimpeded access to the Utility company to perform Utility relocations (see Note 5 - Access).								
2 "Concurrent Utilities" operations noted herein, are to signify those Utility Company operations that can be worked concurrently (e.g. Utility A and Utility B work on-site together) - 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.								
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-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 any form of "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.								
9 Per National Grid Force Account: ***MATERIAL SUPPLY CHAIN DELAYS*** An initial lead time (90 days) for the first utility to begin relocations will be granted. All other lead time will run concurrent with actual work being performed on site.								





# WORK ZONE SAFETY

## *Temporary Traffic Control*

*Typical Details and  
Massachusetts Guidelines  
for MassDOT, Municipalities,  
Utilities, and Contractors*

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## INTRODUCTION

This guide has been prepared to assist in the planning and installing of temporary traffic controls in maintenance, utility, or short-term construction work areas (work lasting 10 hours or less). This guide serves to assist with the many decisions that must be made for each work site. Special planning for traffic control is necessary on a case by case basis because conditions can vary widely among work locations. **Since this guide cannot cover every situation, representative illustrations covering typical short-term construction, maintenance, and utility operations are presented.**

**All typical traffic control device setups illustrated should be considered as guides.** The traffic control devices that are shown, the arrangement or position of the devices, and the distances prescribed in the tables are based on the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) and the Massachusetts Amendments to the MUTCD (MA Amendments), but these illustrations only present minimum standards. The provision of safe work zones for all roadway users and roadway workers affected by these activities is paramount. Traffic controls may be expanded or improved upon whenever deemed necessary. Traffic movement through the work site all traffic control devices shall be periodically observed and inspected at all locations.

If necessary, Part 6 of the MUTCD and the MA Amendments, Chapter 17 (Work Zone Management) of MassDOT's Project Development & Design Guide, and the "Traffic Engineering and Safety Section" of the MassDOT web site: (<https://www.massdot.state.ma.us/highway/Departments/TrafficandSafetyEngineering.aspx>), as well as MassDOT District offices can provide additional guidance, information, and suggestions for work zone setups.

## RESPONSIBILITIES FOR TRAFFIC CONTROL

Short-term construction, maintenance, and utility work on or near the roadway creates a potentially hazardous situation, typically requiring the use of temporary traffic controls. These controls are important to protect both work crews and the road users. It is the responsibility of each maintenance foreman to establish and maintain safe and effective controls.

Usually the supervisor, working with the crew, plans the traffic control procedures for proposed work sites. The foreman is responsible for re-requesting, storing, and maintaining all traffic control devices necessary for their crews.

The foreman is responsible for placing the devices according to these guidelines. They must inspect each installation and observe traffic flow through the area. The foreman is generally authorized to make adjustments to the original installations that, in their judgment, are necessary to improve the control of traffic and establish greater safety.

All necessary traffic control devices must be installed before work begins and properly maintained during the work period. They must also be removed as soon as they are no longer relevant to the roadway conditions.

PAGE 2

In situations such as night time road or lane closures, detours, or other unusual conditions on state highways, the District Traffic Maintenance Engineer (DTME) should be advised. If the DTME is absent, the section foreman shall follow the instructions of the District Maintenance Engineer.

### **TRAFFIC CONTROL DEVICES**

Traffic control devices regulate the movement of road users, warn of unexpected or unusual roadway conditions, and inform them how to maneuver safely through or around the work area. All signs, channelizing devices, barricades, and other miscellaneous traffic control devices should work together to guide traffic safely and efficiently. Common temporary traffic control devices are outlined and described below.

#### **Signs**

Temporary traffic control zone (TTCZ) signs are the primary means of providing information and directions to roadway users. All signs must be retroreflective per MassDOT's latest standard.

Warning signs call attention to unexpected conditions and to situations that might not be readily apparent to road users on or adjacent to a roadway. Warning signs alert road users to conditions that might call for a reduction of speed or an action in the interest of safety and efficient traffic operations. Nearly all warning signs for construction and work areas have black legends and borders on a fluorescent orange background.

Regulatory signs shall be used to inform road users of selected traffic laws or regulations and indicate the applicability of the legal requirements. Regulatory signs typically have black legends and borders on a white background.

#### **Channelizing Devices**

When used properly, traffic cones, reflectorized plastic drums, and barricades guide traffic through the work area along an appropriate travel path. It takes roadway users a certain distance along the roadway to safely move away from the upcoming active work site. These transition distances are based on the following taper length (L) formulas:

$L = WS^2/60$  for speeds of 40 mph or less; or

$L = WS$  for speeds of 45 mph or more; where

- $L$  = minimum length of taper in feet,
- $S$  = posted speed limit or typical travel speed in miles per hour prior to the work, and
- $W$  = width of lane closure in feet.

The spacing of channelizing devices (in feet) is approximately equal to the existing speed of traffic (in mph).

#### **Warning Lights**

Rotating beacons and other flashing lights mounted on work vehicles, signs, or channelizing devices help alert roadway users to the work area. They may also be used to warn roadway users of hazards within the work area. The first 10 drums in any taper shall be equipped with sequential flashing lights.

### **Arrow Boards**

Arrow boards are a special type of sign that are highly visible work zone warning devices. They are particularly effective on highways, where both speed and volume are high. Arrow boards in the non-directional, CAUTION, mode (four corner flashing) may be used to indicate that a shoulder is closed. Arrow boards in the arrow mode shall only be used when a travel lane is dropped on a multi-lane road and one lane of traffic must merge with another. All arrow boards should be located at the beginning of each lane or shoulder closure taper without extending outside of it. Arrow boards shall flash at a rate of 25 to 40 flashes per minute. Arrow boards shall not be used to indicate a lane shift.

### **BASIC REQUIREMENTS**

In every work situation, the temporary traffic control setup must: Give roadway users sufficient advance warning of the work area; advise roadway users of the proper actions to take and travel paths to follow; and provide protection to roadway users, workers, and the work area. These three general requirements can be met as outlined below.

#### **Provide Advance Warning**

Warning devices along the approaches to a work area alert roadway Users to changes to road and operating conditions. Roadway users are usually alerted to these dangers via a sign or series of signs installed in the same order as the roadway user generally would expect to see them on long-term construction projects.

The initial project limit sign is usually a general warning such as "ROAD WORK 1500 FT". Other operational warning signs then provide the roadway user with more specific information about the situation. A minimum of three advance warning signs (the initial project limit sign and two operational warning signs) is recommended when work is located on the traveled way. Warning lights and flags can be used to attract attention to the signs. A highly visible work area helps reinforce the advance warnings.

#### **Advise and Direct Travelers**

Operational warning signs provide information to the road-way user such as the type of work being performed, special conditions to watch for, or actions to take. These include signs such as, SHOULDER WORK, RIGHT LANE CLOSED, DETOUR 500 FT, ROAD CLOSED to THRU TRAFFIC, POLICE OFFICER AHEAD, etc. All of these signs must be located far enough in advance of the work area that the roadway user has sufficient time to react to them appropriately. For projects in Urban Areas, see detail: Typical Device Spacing for minimum sign spacing.

#### **Protect Travelers, Workers, and the Work Area**

The primary protection of any work area is its own visibility. Traffic cones, reflectorized plastic drums, portable breakaway barricades, etc. are used to make the work area visible and separate workers from traffic.

PAGE 4

Other devices, such as flashing lights, flags, delineators, temporary lighting, and portable changeable message signs (PCMS) can be used to provide additional emphasis and visibility.

Workers must protect themselves by being alert to their work situation, wearing safety vests and hard hats, and by facing traffic whenever possible.

Work vehicles can also add protection when they are equipped with truck mounted attenuators, rotating beacons, flashing lights, flashing arrow boards, etc. and are parked between workers and oncoming traffic. However, workers should not position themselves between two closely parked vehicles. No private personal vehicles are allowed within the work site.

### PLANNING GUIDELINES

Decisions regarding selection of work area traffic control devices require a knowledge and understanding of the specifics of each work zone. As there may be vast differences between situations, three main variables need to be considered prior to determining the need for, or the selection of, traffic control devices: 1) location of work, 2) type of roadway, and 3) speed of traffic.

Compiling information about these variables will help with planning a safe work area control. Each of these variables is explained below.

#### Location of Work

The choice of traffic controls needed for a short-term construction, maintenance, or utility operation depends upon the work zone's location. As a general rule, the closer the active work site is to the roadway, the more control devices are needed. Work can take place:

- Away from the shoulder or edge of pavement. No special devices are needed if work is confined to an area 15 or more feet from the edge of the shoulder. A general warning sign, such as ROAD WORK AHEAD, should be used if workers and equipment must occasionally move closer to the roadway.
- On or near the shoulder/ edge of pavement. This area should be signed as if work were on the road itself, since it is part of the roadway users' recovery area. Advance warning and operational signs are needed, as well as channelization devices to direct traffic and keep the work area visible to roadway users.
- On the median of a divided highway. Work in this location may require traffic control in both directions of traffic. Advance warning and channelization devices should be used if the median is narrow.
- On the roadway. This condition requires detailed protection for workers and sufficient warning to roadway users. Advance warning must provide a general message that work is taking place as well as information about specific hazards and specific actions the roadway user must take.



### TYPE OF ROADWAY

The characteristics of the roadway also have an important influence on the selection of work area traffic control. The roadway, itself, may present special hazards. You should plan for maximum protection, using the worst hazard present as your guide to signing the work area. Some general considerations are described below for road conditions.

**One-way roads:** A one-way road requires signage on both sides of the road if it carries two or more lanes in one direction, ensuring roadway users in all lanes are alerted and informed.

#### Two-way roads:

- **Undivided:** Two-way, undivided roads will usually require controls for both directions of traffic. When the active work site is well off the roadway, controls for the opposite lane may be eliminated.
- **Divided:** Work on divided multi-lane roadways can often be handled as work along a one-way road (i.e. signs are provided along both sides of the roadway along the direction affected). If the work is in the median, both directions of traffic must be controlled, and both approaches should be double signed (i.e. have all 3 advance warning signs on both sides of each direction).

### EFFECTS OF SPEED ON WORK ZONES

Speed is an important consideration in the use of work area traffic control devices. As a general rule, the greater the speed of traffic approaching a work area, the greater the size, number, and spacing of control devices.

**Size.** The standard size for most warning signs is 36 x 36 inches on conventional roadways and 48 x 48 inches on freeways and expressways. Signs larger than the standard 36 x 36 inches may be desirable on high-speed conventional roads.

**Position.** Install signs far enough in advance of the work area so the roadway users have time to react to them (see charts associated with diagrams for spacing).

### OTHER FACTORS

**Sight Obstructions.** To ensure safety, work areas must be visible. Assess the placement of the temporary traffic control devices by driving through the area, and determine if the devices can be easily seen and provide sufficient time for roadway users to react in a safe manner. Extra precaution should be enacted in areas where horizontal or vertical curves may obstruct a roadway user's clear view of road activities ahead.

**Police/Flaggers.** It should be noted that the MUTCD does not require police/flaggers for stationary setups. If police/flaggers are used, a police/flagger ahead sign should be used in advance of any point where the police/flagger is stationed to control road users.

## PROCEDURES FOR WORK AREA TRAFFIC CONTROL

### 1. PLAN YOUR WORK

**Inspect** location of work area and its surroundings.

**Analyze:**

- Location of work in relation to the traveled way, intersecting road-ways, driveways, and sight distances;
- Type of roadway and traffic involved; and
- Volume and speed of traffic.

**Meet and discuss** the work and necessary traffic control with the crew.

**Study** representative illustrations in this guide to develop a temporary traffic control plan (TTCP).

**Other Considerations:**

- Base your traffic control plan on the premise that all roadway users are unfamiliar with the area.
- The closer the work area location is to traffic, the more controls are needed.
- Plan for maximum protection.
- Select and inspect the temporary control devices needed (including all warning signs), if they are not in good condition, REPLACE THEM!
- Then collect and transport them to the work site.
- Determine their proper placement.
- Install signs and other traffic control devices prior to allowing personnel or equipment onto the roadway.
- Make sure signs are reflective, accurate, clean, and meet specifications. Completely cover any existing permanent signs that will conflict with the messages of the new work area control signs.

### 2. INSTALLING/REMOVING TEMP. TRAFFIC CONTROL DEVICES

Care must be exercised when installing and removing temporary traffic control (TTC) devices. The traffic control needed to perform the operation safely is dictated by the location on the roadway the operation will occur: in a shoulder or a lane, in the left lane or right, etc. In all cases, installing TTC begins and ends as a mobile operation.

A shadow vehicle with a truck mounted attenuator (TMA) shall be used to protect workers installing and removing TTC devices on all roadways with a posted speed limit of 45 MPH or greater as directed by the engineer. TTC devices shall not be installed or removed from a shadow vehicle with a TMA. TTC devices shall be installed or removed from a work operation vehicle only and a shadow vehicle with a TMA shall be used to protect the workers installing or removing the devices.

## **PROCEDURES FOR WORK AREA TRAFFIC CONTROL (CONT.)**

### **3. INSTALL TRAFFIC CONTROL DEVICES AT WORK SITE**

#### **FOR LOWER SPEED ( $\leq 40$ MPH) ROADWAYS:**

- 1) All devices shall be installed in order with the flow of traffic.
- 2) Where one direction of traffic is being affected, the first sign installed should be the sign farthest from the work site, and on the same side as the work.
- 3) Where two directions of traffic are affected, install signs for opposing traffic first, starting with the sign farthest from the work area. When signs for opposing traffic have been installed, install signs on the same side as the work area, again beginning with the sign farthest from the active work site.
- 4) Once signs are in place, other traffic control devices shall be installed in the same manner as the signs.

#### **FOR HIGHER SPEED ( $\geq 45$ MPH) ROADWAYS:**

- 1) All devices shall be installed in order with the flow of traffic.
- 2) Install all advance warning signs, beginning with the ROAD WORK XXX (W20-1) sign and ending with the END ROAD WORK/DOUBLE FINES END (MA-R2-10E) sign.
- 3) Install all signs beginning with the opposite side which will be closed (for a right lane closure; first, install all signs on the left side (shoulder) and then install all signs on the right side (shoulder). No signs shall be erected on the roadway unless delineated by traffic control devices.
- 4) If required, install shoulder taper as the mobile operation advances.
- 5) Install arrow board on the shoulder prior to the merging taper or as close to the beginning of the merging taper as possible.
- 6) Install channelizing devices to form a merging taper. Use of a shadow vehicle with a TMA during installation is required on roads with speed limits of 45 MPH or greater or as directed by the Engineer.
- 7) Install traffic control devices along the buffer space at the appropriate spacing.
- 8) Continue placing devices along the work space at the appropriate spacing.
- 9) Install devices for the termination area as necessary.
- 10) Place the shadow vehicle with a TMA in advance of the first work crew or hazard approached by motorists. Multiple shadow vehicles may be required based on the number of lane and shoulder closures implemented.

### **4. INSPECT WORK AREA SIGNING AND CONTROL DEVICES**

- 1) Assess the placement of the temporary traffic control devices by driving through the work area. All approaches to the work zone should be checked.
- 2) Ensure roadway users will have sufficient time to read signs and react in a safe manner.

### PROCEDURES FOR WORK AREA TRAFFIC CONTROL (CONT.)

- 3) Check visibility of entire work area. If approaching roadway users can't see the work area well, or if they can't see ahead to traffic that may already be queued on the approach because of the work, additional traffic control devices should be deployed.
- 4) Check to ensure the proper temporary traffic control devices are positioned to protect workers from traffic (where possible).
- 5) Ensure all workers wear safety vests, hard hats, and all other necessary safety equipment. All worker safety gear should be in good condition. All reflective gear should be clean and highly visible in the dark.
- 6) Record in the log book the number and location of all signs and devices.

#### Considerations:

- Work area signs should never be blocked from view or obscured by vegetation, existing signs, or other obstructions.
- Flags, flashing lights, and edge line traffic cones can be used to improve visibility.

### 5. REMOVE TRAFFIC CONTROL DEVICES AT WORK SITE

**All workers and equipment should be clear from work site BEFORE removing signs and other devices.**

#### FOR LOWER SPEED ( $\leq 40$ MPH) ROADWAYS:

- 1) Remove signs and other devices within the delineated area when work is complete.
- 2) Remove other traffic control devices in the reverse order in which they were installed
- 3) Remove signs in the reverse order in which they were installed (i.e. sign closest to the work area to be removed first).
- 4) When the operation is complete, uncover any existing permanent signs covered in Step 2.
- 5) Record in the log book the time at which the signs were removed.

#### FOR HIGHER SPEED ( $\geq 45$ MPH) ROADWAYS:

All TTC devices for a stationary lane closure on a multi-lane roadway, except advance warning signs, should be removed against the flow of traffic in the following sequence:

- 1) Remove the channelizing devices starting from the end of the activity area working back to the widest part of the merging taper.
- 2) A shadow vehicle with TMA shall be positioned to protect workers removing devices and work backwards as the setup is removed from the roadway.

### PROCEDURES FOR WORK AREA TRAFFIC CONTROL (CONT.)

- 3) Place the removal vehicle on the shoulder, and remove the channelizing devices from the merging taper by hand onto the work vehicle.
- 4) Remove the arrow board once traffic is clear and it is safe to do so.
- 5) Circle back and moving with the flow of traffic, remove the advance warning signs starting with the opposite side from previous lane closure first.
- 6) At no time shall workers run across the multilane roadway to remove signs on both sides of the road simultaneously.
- 7) Record in the log book the time at which the signs were removed

### RAMP FACILITIES

At all times it is necessary to control the on and off-ramp traffic during the installation and breakdown of traffic control devices. Use of temporary traffic slow-downs or rolling roadblocks is recommended to allow for the safety of workers handing temporary traffic control devices on ramp facilities. A shadow vehicle with a TMA shall be used to protect the workers installing or removing the devices. At no time shall the work operation vehicle be used as the shadow vehicle with the TMA.

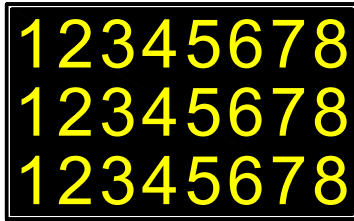
### USE OF THIS GUIDE

Illustrations showing minimum standards for short-term construction, maintenance, and utility operations are arranged in this guide by type of operation. The users of this guide should compare all illustrated examples and examine their differences. After gathering information about the work zones using the general guidelines as outlined, proceed as follows:

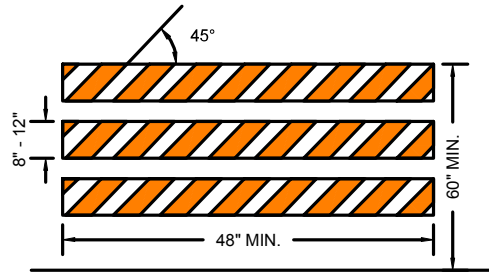
- 1) Turn to the Index. Consider the type of operations and the type of roadway upon which work will occur.
- 2) Select the figure that most closely matches the conditions where you plan to work. Remember that all diagrams represent minimum standards.
- 3) Read the title of the illustration to ensure that it is appropriate to your location. Study the layout of traffic control devices and read all notes.
- 4) Consult the appropriate tables, as directed on each illustration to determine taper length and proper spacing of signs. Notice that distances change when speeds change. Also note that these are guidelines, only, and they must be adapted to your specific work area.
- 5) Use the **“PROCEDURES FOR WORK AREA TRAFFIC CONTROL”** for assistance in completing all necessary steps to provide effective and safe work area traffic control.



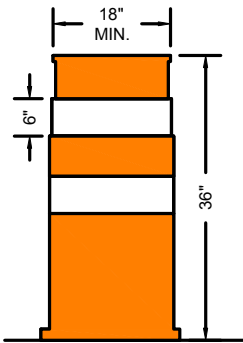
**SIGN**



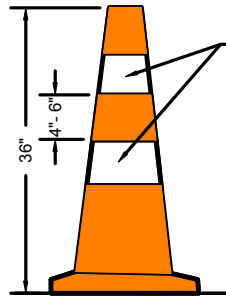
**PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)**



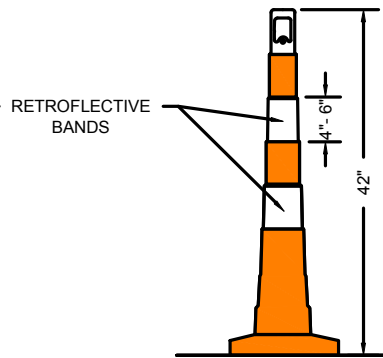
**TYPE III BARRICADE**



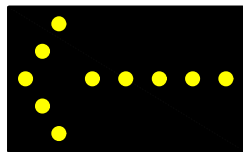
**DRUM**



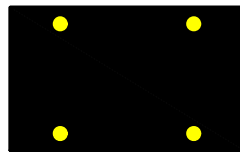
**CONES**



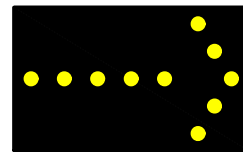
Cones may be used for all daytime operations. For night work, drums should be used to form the taper(s) and cones can be used along the tangent section of the work setup.



LEFT

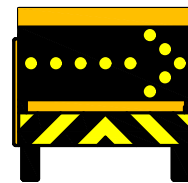


CAUTION



RIGHT

**ARROW BOARD (WITH MODE)**



**TRUCK MOUNTED ATTENUATORS**

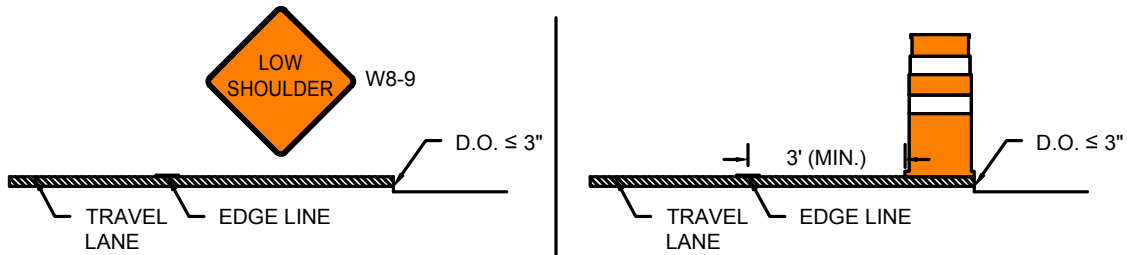
Truck Mounted Attenuators (TMA) shall be positioned between the start of the work area and the end of the designated buffer zone. The TMAs are to be positioned in each temporarily closed lane. This includes shoulders ( $\geq 8$  feet) whether combined with a travel lane closure or being closed alone. These TMA conditions are required on roadways with speeds of 45 MPH or greater. TMAs can be used on other roadways at the discretion of the engineer. TMAs shall be used for the deployment and removal of all traffic control devices, including all advance warning signs.

### SHORT-TERM PAVEMENT EDGE DROP-OFFS

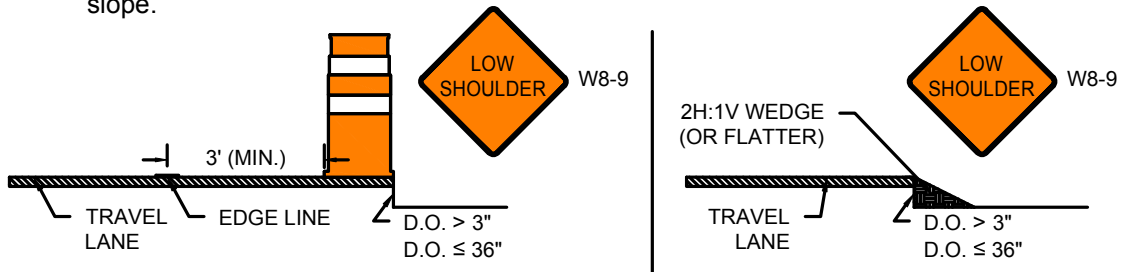
*Note that this guidance is adopted from the Roadside Design Guide, 4th Edition.*

Pavement drop-offs may occur during paving, excavation, and other construction activities. Drop-offs create hazards for vehicles if not properly mitigated. The following applies for all roads with speed limits greater than 30 mph; for roads with speed limits of 30 mph or less, treatments for pavement edge drop-offs are at the discretion of the Engineer. Drop-offs between adjacent, open travel lanes should not exceed 2", and any drop-off in excess of 3" should not be left unattended without one of these mitigation measures applied.

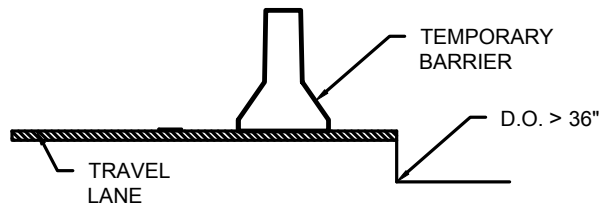
- Shoulder drop-offs 3" or less adjacent to a shoulder or active travel lane should be mitigated by:
  - ✓ A W8-9 (LOW SHOULDER) sign in advance of and at regular intervals throughout the treatment; or
  - ✓ The placement of drums on the traffic side of the drop-off.



- Shoulder drop-offs greater than 3" but less than or equal to 36" should be mitigated by:
  - ✓ A W8-9 (LOW SHOULDER) sign in advance of and at regular intervals throughout the treatment and the placement of drums on the traffic side off the drop-off, offset at least 3' from the travel lane; or
  - ✓ A W8-9 (LOW SHOULDER) sign in advance of and at regular intervals throughout the treatment and the placement of a temporary wedge of material along the face of the drop-off. The wedge should consist of stable material placed on a 2H:1V or flatter slope.



- Shoulder drop-offs greater than 36" must be protected by temporary barrier.





POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	320	305	20	55
45-55	500 / 1000 / 1000	660	495	40	40
60-65	1000 / 1600 / 2600	780	645	40	50










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

MINIMUM SPACING OF ADVANCE WARNING SIGNS FOR URBAN ROADWAYS	
ROAD TYPE	DISTANCE BETWEEN SIGNS
URBAN (LOW SPEED)	100 FT
URBAN (HIGH SPEED)	350 FT

NOTES

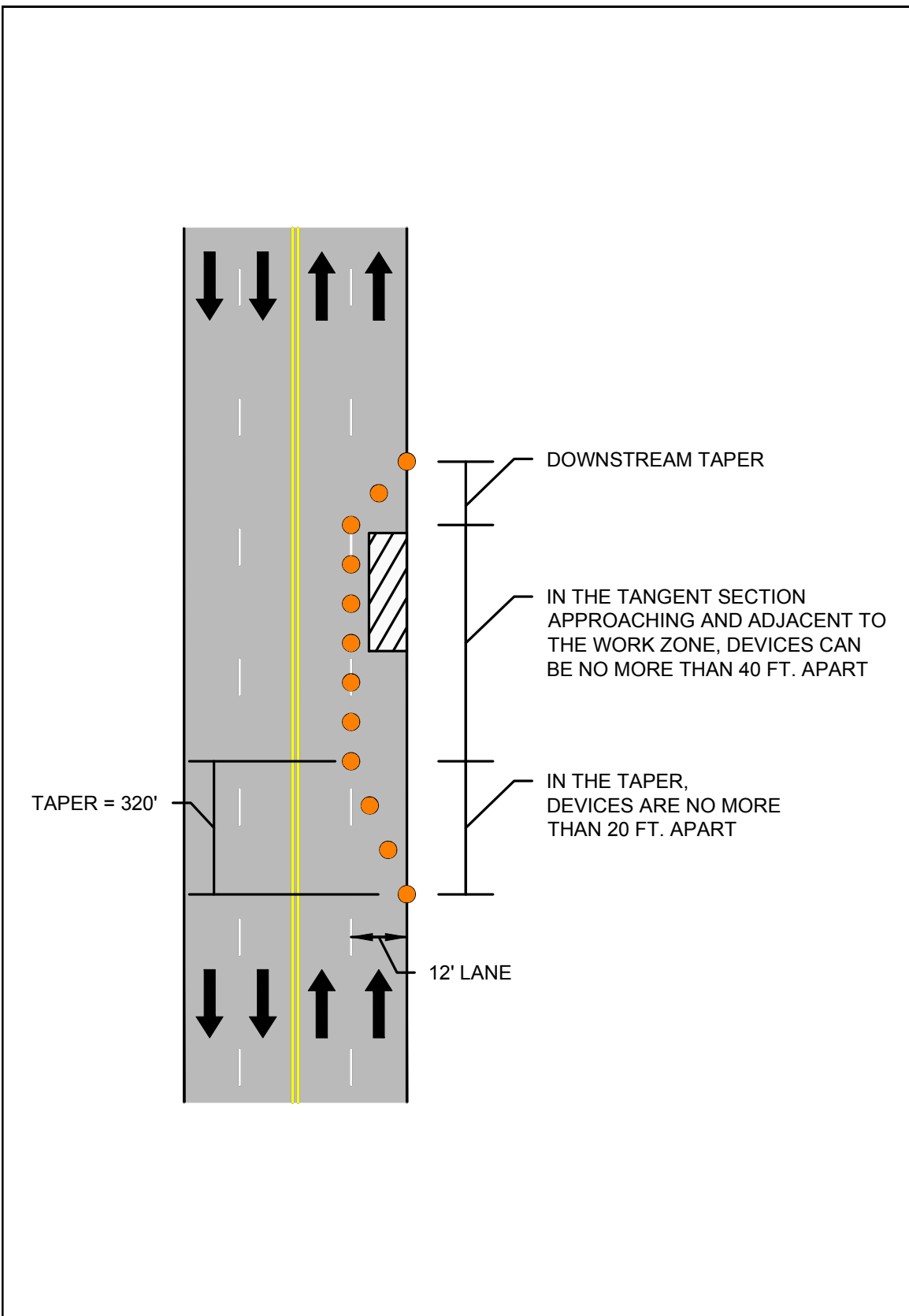
1. 40 FT = 10 FT PAVEMENT MARKING + 30 FT SKIP


LEGEND

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE





 <p>PAGE 14</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FLAGGING GUIDANCE</p>
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### Guidance for Flagging Operations

**NOTE:**

A flagger shall always be aware of their surroundings and have a good escape route. A flagger shall never be positioned directly beside or against construction equipment. When a flagger is required to direct traffic in an area where the escape route is partially blocked by a traversable obstruction such as a guardrail, the flagger shall be physically capable of traversing that obstruction. Prior to commencing a project, the supervisor in charge shall review the project, including guardrail areas, for safe flagging stations. The supervisor in charge shall clearly communicate with the flagger(s), indicating any locations where they cannot safely perform their duties.

Each flagger shall be equipped with the following high visibility clothing, signaling, and safety devices:

- 1) A white protective hard hat with a minimum level of reflectivity per the requirements of ANSI, Type I, Class E&G;
- 2) A clean, unfaded, untorn lime/yellow reflective safety vest and pants meeting the requirements of ANSI 107 Class 3 with the words "Traffic Control" on the front and rear panels in minimum two (2) inch (50 millimeter) high letters;
- 3) A 24 inch "STOP/SLOW" traffic paddle conforming to the requirements of Part 6E.03 of the Manual on Uniform Traffic Control Devices (MUTCD), a weighted, reflectorized red flag, flagger station advance warning signage, and two-way radios capable of providing clear communication within the work zone between flaggers, the Contractor, and the Engineer. The traffic paddle shall be mounted on a pole of sufficient length to be seven feet above the ground as measured from the bottom of the paddle;
- 4) A working flashlight with a minimum of 15,000 candlepower and a six inch red attachable wand, a whistle with a working lanyard, and a First Aid kit that complies with the requirements of ANSI Z308.1; and
- 5) An industrial/safety type portable air horn that complies with the requirements of the U.S. Coast Guard.

A "STOP/SLOW" paddle should be the primary hand-signaling device. It shall have an octagonal shape on a rigid handle. Flag use should be limited to emergency situations.

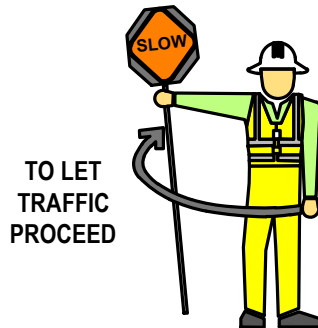


**Properly Trained Flaggers**

- Give clear messages to drivers.
- Allow distance for drivers to react.
- Coordinate with other flaggers.
- Use standard signaling methods.

**Properly Equipped Flaggers**

- Use approved stop/slow paddles.
- Use approved safety apparel.
- Use retroreflective equipment.
- Use hand held radios, as needed.
- All flaggers shall wear safety apparel that meets ANSI Class 3 requirements. The combination of vest and pants is required.



**Proper Flagging Stations**

- Good approach sight distance.
- Highly visible to traffic.
- Stand alone away from other machinery and people.
- Stand on right edge of pavement or shoulder- proceed to centerline only when first vehicle has come to stop.
- Have a good escape route.

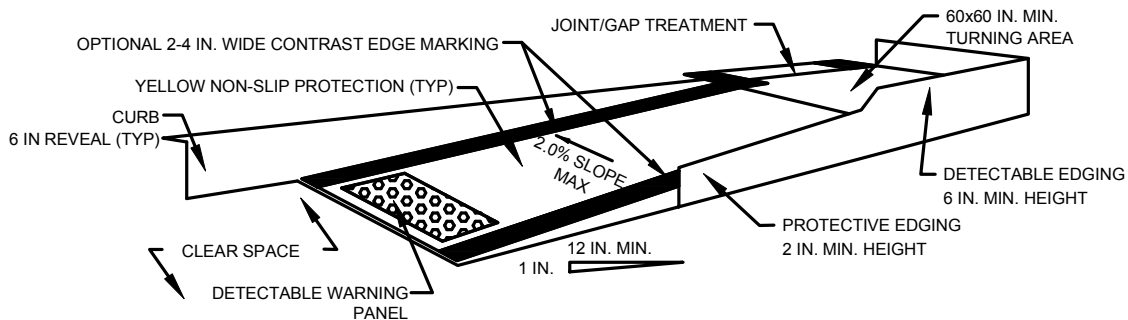


**Proper Advance Warning Signs**

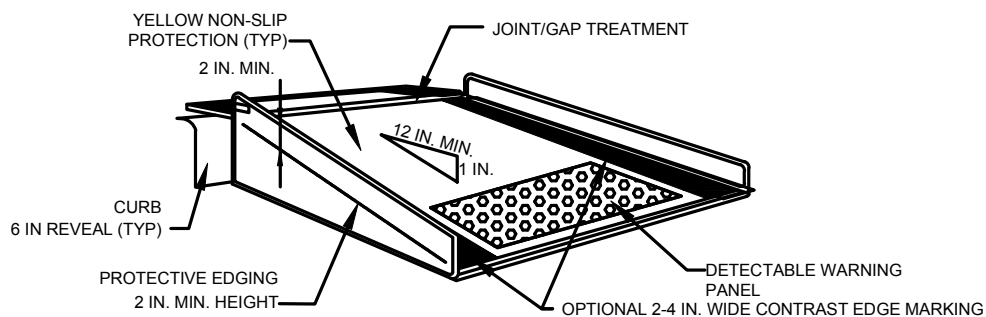
- Always use warning signs.
- Allow for reaction distance from signs.
- Remove signs if no longer necessary or not flagging.
- Use free hand in up-and-down motion to help slow traffic.



FIGURE 4  
TYPICAL PEDESTRIAN DEVICES  
(1 OF 2)  
NOT TO SCALE



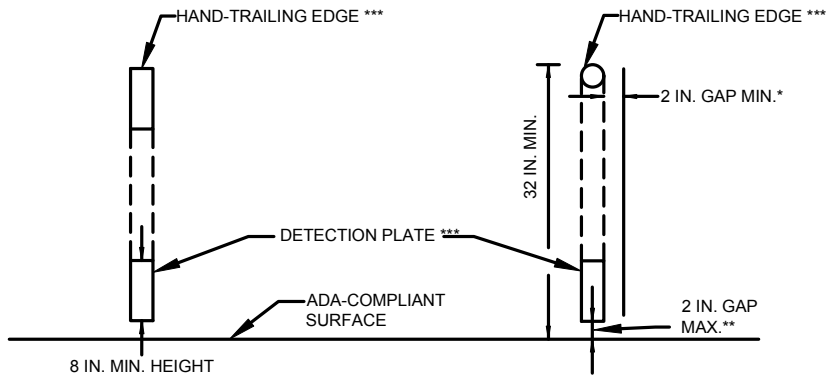
**TEMPORARY CURB RAMP-PARALLEL TO CURB**



**TEMPORARY CURB RAMP-PERPENDICULAR TO CURB**

**NOTES:**

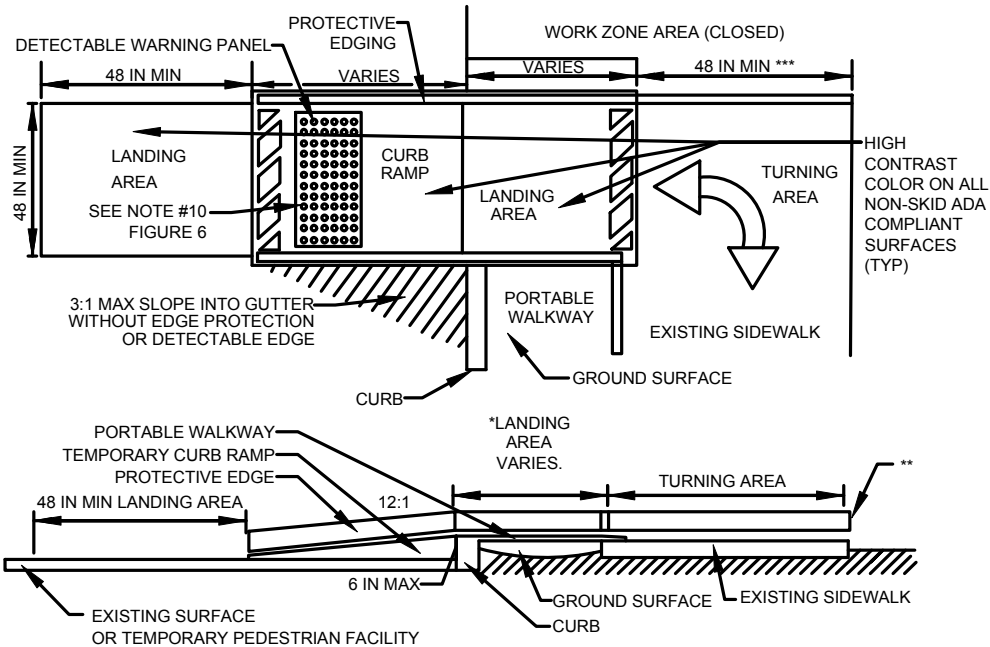
1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE, AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. PROTECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



**CROSS SECTION VIEW**


**PEDESTRIAN CHANNELIZING DEVICE**

- \* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
- \*\* A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.
- \*\*\* THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.



**TEMPORARY CURB RAMP**

- \* LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
- \*\* DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
- \*\*\* 60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK.

 <p>PAGE 17</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 5 TYPICAL PEDESTRIAN DEVICES (2 OF 2) NOT TO SCALE</p>
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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
TWO LANE UNDIVIDED ROADWAY  
HALF OF ROADWAY CLOSED  
WORK NEAR CURVE










POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	50	100	20	30
45-55	500 / 1000 / 1000	100	150	40	20

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

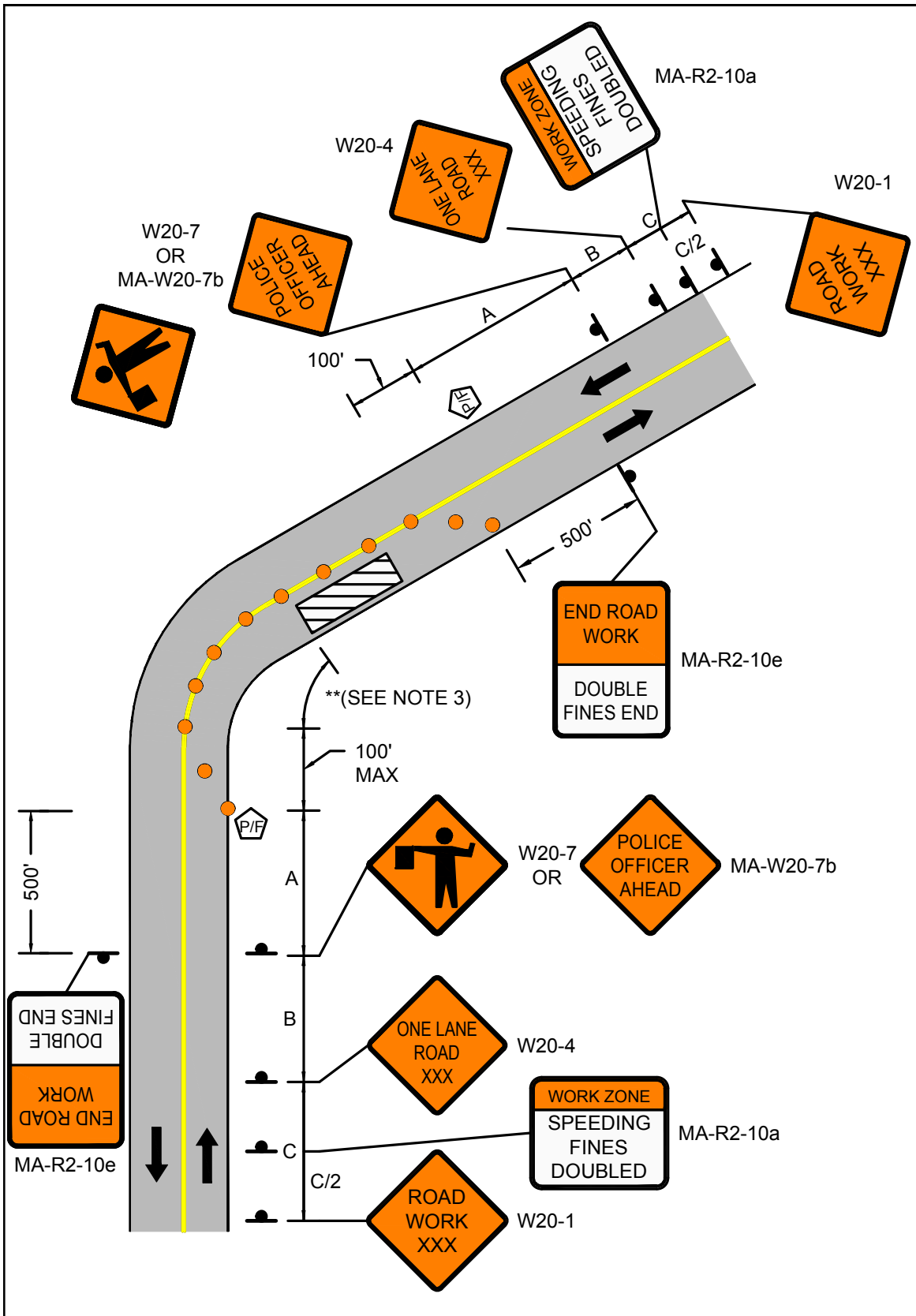
**NOTES**


1. IF POLICE DETAIL/UNIFORMED FLAGGER SUPPORT IS REQUIRED, PROVIDE TWO UNITS.
2. MA-R2-10a LOCATED AT C/2.
3. \*\* = EXTEND ENOUGH SO TAPER IS BEFORE CURVE

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 <p>PAGE 19</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 6 STATIONARY OPERATIONS TWO LANE UNDIVIDED ROADWAY HALF OF ROADWAY CLOSED WORK NEAR CURVE</p>
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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
TWO LANE UNDIVIDED ROADWAY  
HALF OF ROADWAY CLOSED

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	50	100	20	30
45-55	500 / 1000 / 1000	100	150	40	20










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED REGULATORY OR WORK ZONE SPEED	SEPARATION BETWEEN RUMBLE STRIPS
36-mph to 55-mph	15-feet
35-mph and under	10-feet

NOTES

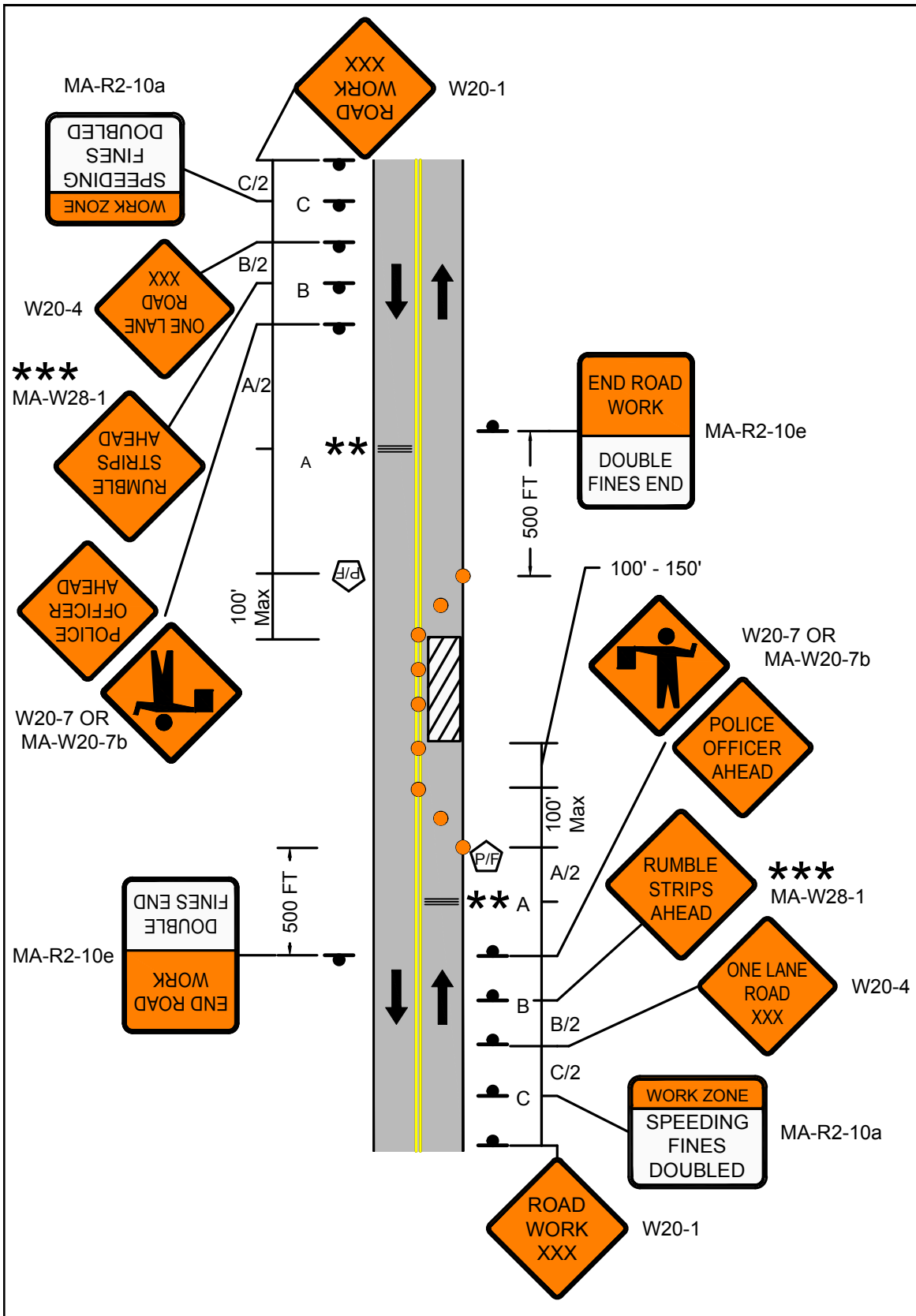
1. IF POLICE DETAIL/UNIFORMED FLAGGER SUPPORT IS REQUIRED, PROVIDE TWO UNITS.
2. MA-R2-10a LOCATED AT C/2.
3. \*\* OPTIONAL AT THE ENGINEER'S DISCRETION.
4. \*\*\* SHALL BE DEPLOYED IF RUMBLE STRIPS ARE PRESENT.


LEGEND

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE





 <p>PAGE 21</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 7 STATIONARY OPERATIONS TWO LANE UNDIVIDED ROADWAY HALF OF ROADWAY CLOSED</p>
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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
TWO LANE UNDIVIDED ROADWAY  
SHOULDER CLOSED










POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		SHOULDER TAPER LENGTH (L/3) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	110	305	20	45
45-55	500 / 1000 / 1000	220	495	40	30
60-65	1000 / 1600 / 2600	260	645	40	35

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

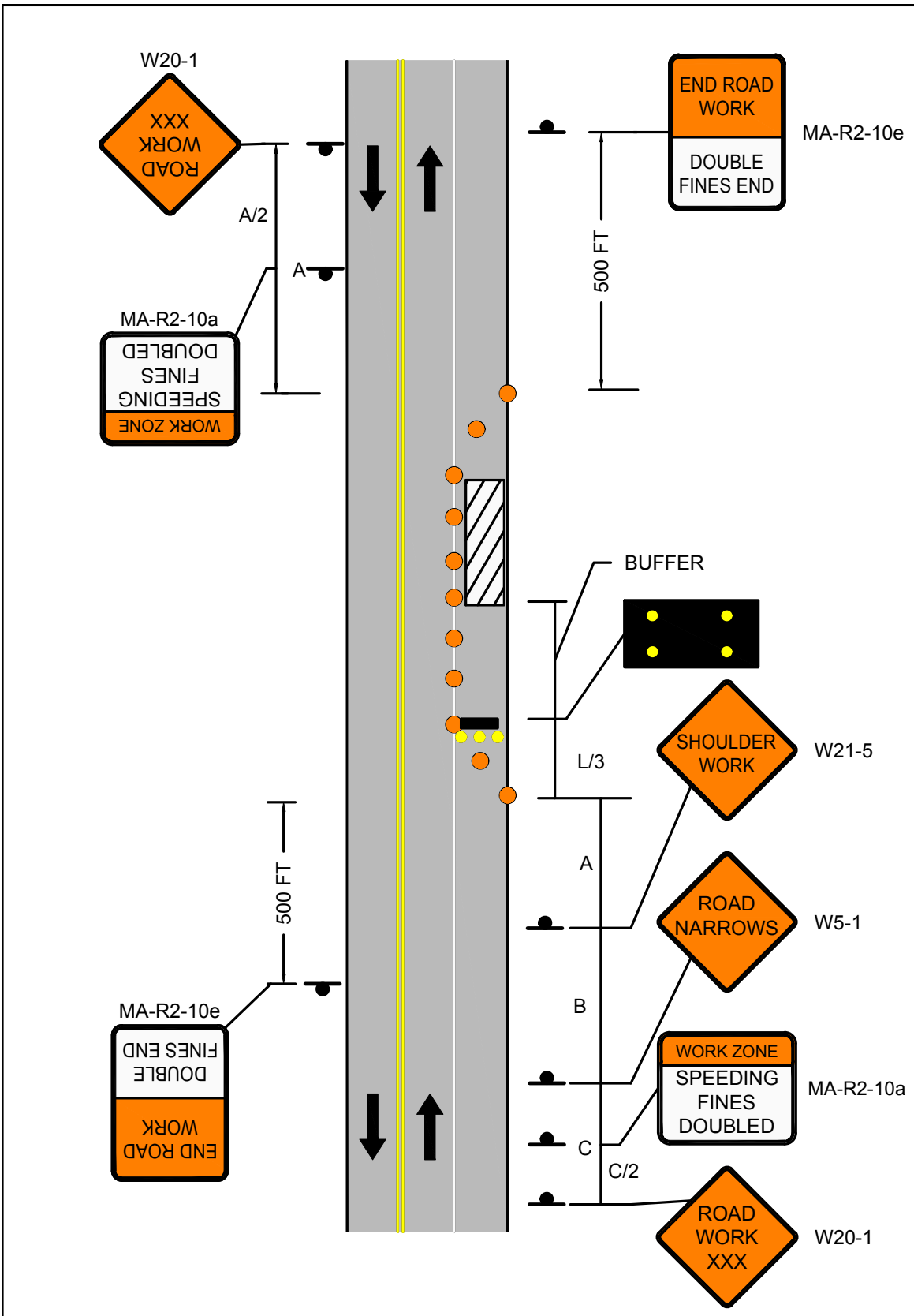
NOTES


1. MA-R2-10a at C/2 and A/2.

LEGEND

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 <p>Massachusetts Department of Transportation Highway Division</p> <p>PAGE 23</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 8 STATIONARY OPERATIONS TWO LANE UNDIVIDED ROADWAY SHOULDER CLOSED</p>
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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
TWO LANE UNDIVIDED ROADWAY  
WITH TRAVERSABLE SHOULDER  
HALF OF ROADWAY CLOSED  
MAINTAIN TWO-WAY TRAFFIC

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	160	305	20	125
45-55	220	330	495	40	100
60-65	260	390	645	40	115










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

**NOTES**

1. MA-R2-10a LOCATED AT C/2.

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE

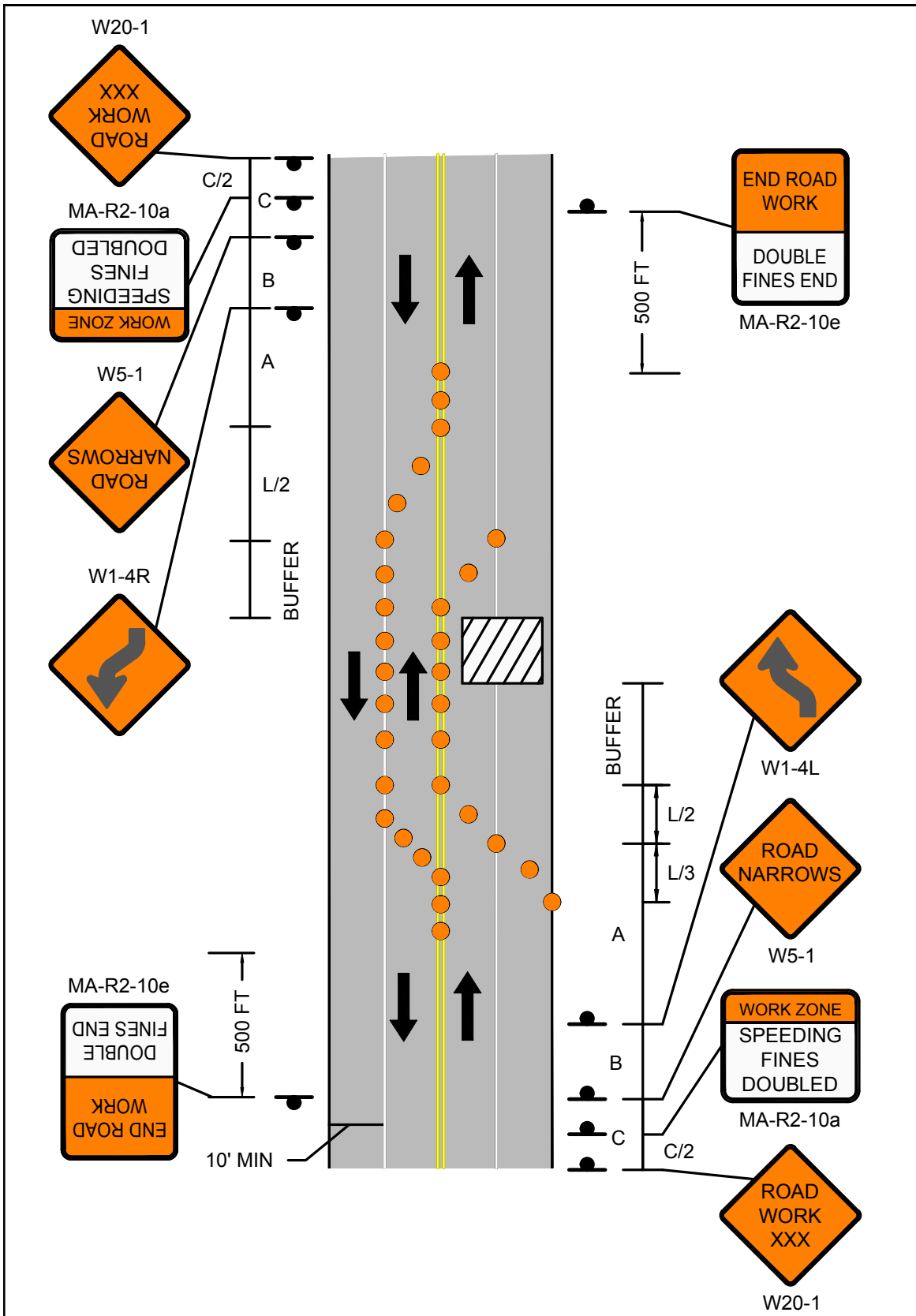


FIGURE 9  
 STATIONARY OPERATIONS  
 TWO LANE UNDIVIDED ROADWAY  
 WITH TRAVERSABLE SHOULDER  
 HALF OF ROADWAY CLOSED  
 MAINTAIN TWO-WAY TRAFFIC





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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
FOUR LANE UNDIVIDED ROADWAY  
RIGHT LANE CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	305	20	60
45-55	220	660	495	40	50
60-65	260	780	645	40	55










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

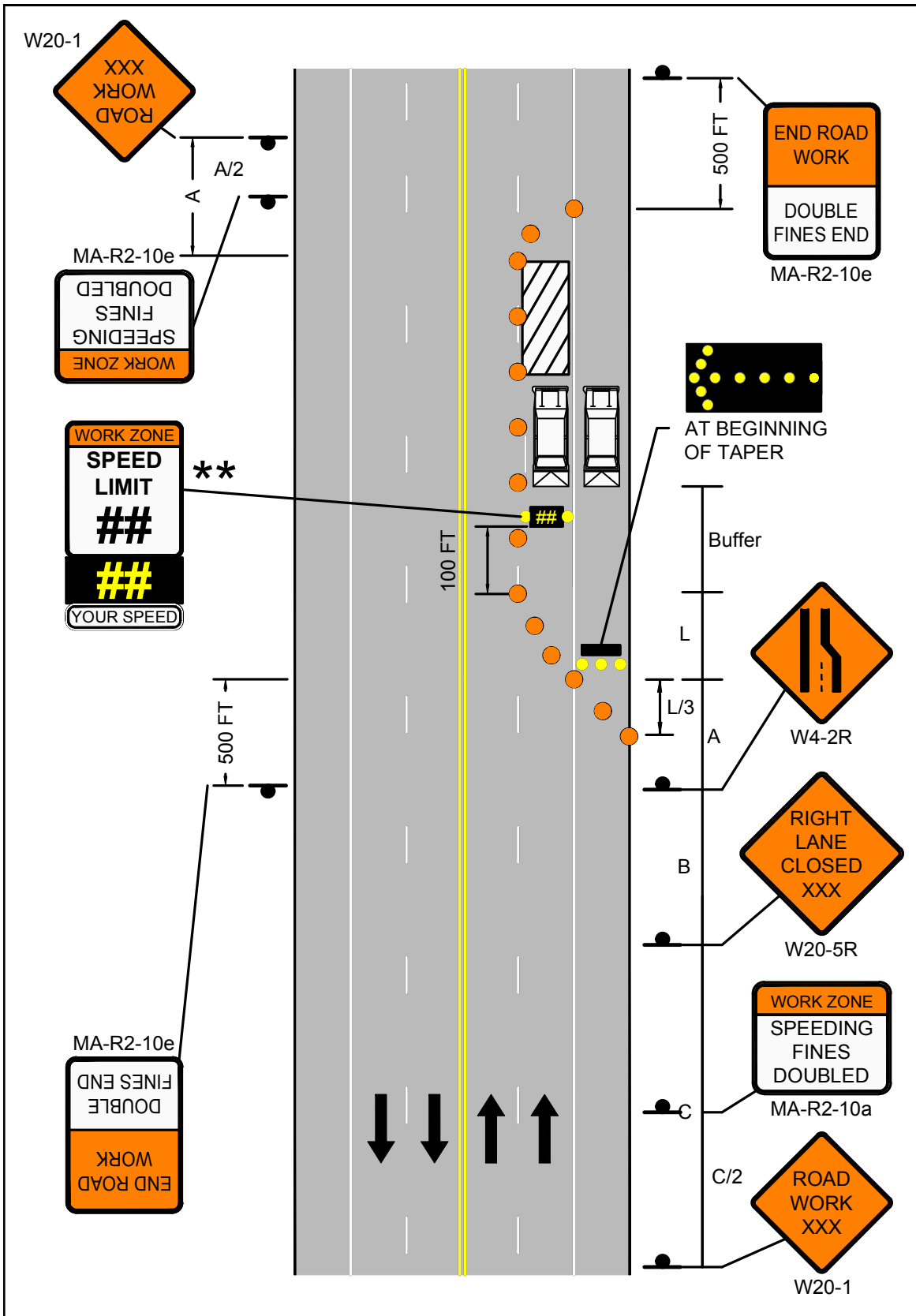
**NOTES**


1. MA-R2-10a LOCATED AT A/2 AND C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION.

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 <p>PAGE 27</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 10 STATIONARY OPERATIONS FOUR LANE UNDIVIDED ROADWAY RIGHT LANE CLOSED</p>
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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
FOUR LANE UNDIVIDED ROADWAY  
LEFT LANE CLOSED










POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	320	305	20	105
45-55	500 / 1000 / 1000	660	495	40	80
60-65	1000 / 1600 / 2600	780	645	40	100

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

**NOTES**

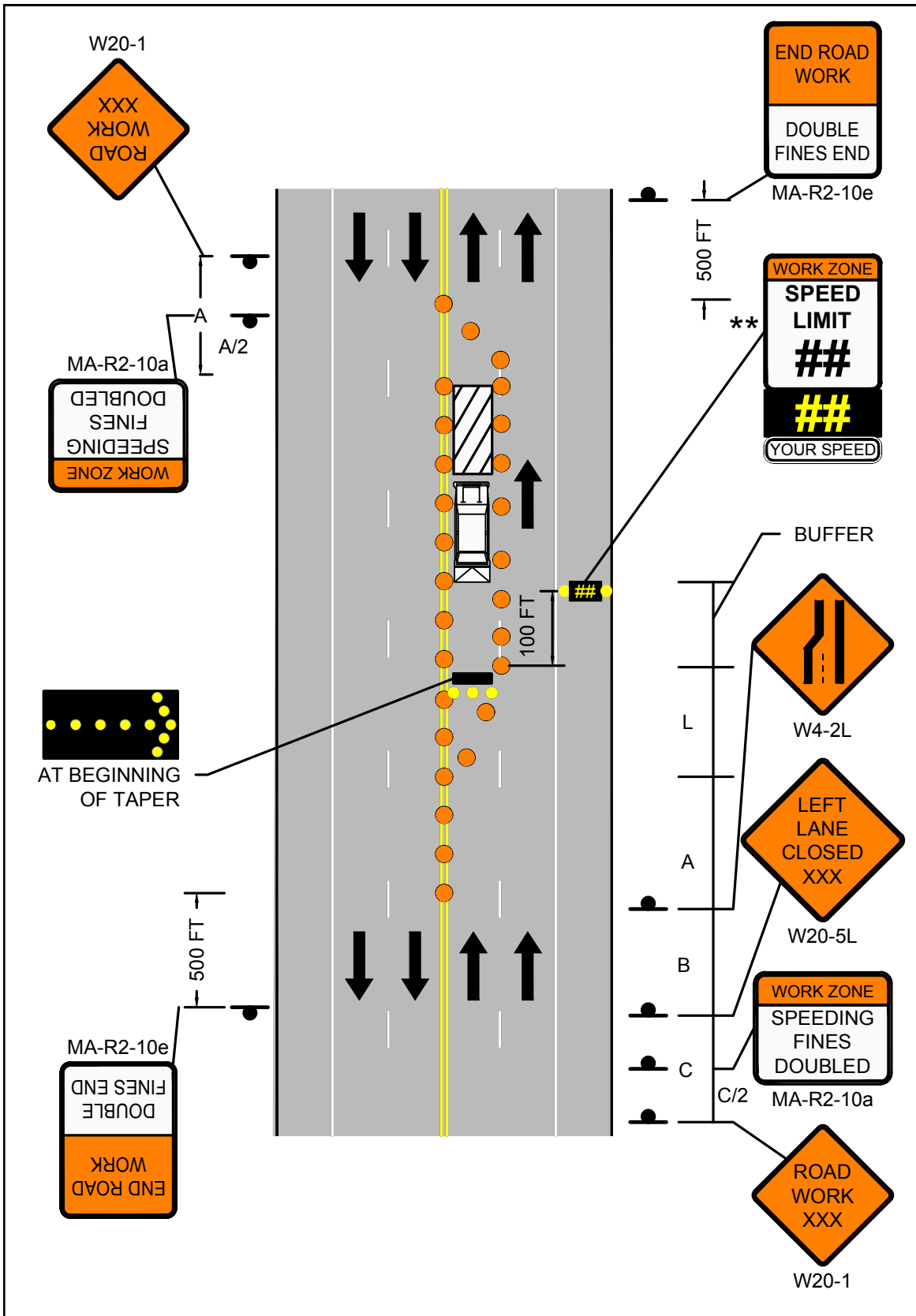
1. MA-R2-10a LOCATED AT A/2 AND C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION. 2' OFFSET FROM EDGE OF TRAVEL LANE TO RADAR SPEED FEEDBACK BOARD IS REQUIRED. BOARD MAY BE MOVED FULLY OR PARTIALLY OFF PAVED SHOULDER, IF REQUIRED.


**LEGEND**


-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE





 <p>PAGE 29</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 11 STATIONARY OPERATIONS FOUR LANE UNDIVIDED ROADWAY LEFT LANE CLOSED</p>
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 PAGE 30	Work Zone Safety Standard Details and Drawings	STATIONARY OPERATIONS FOUR LANE UNDIVIDED ROADWAY HALF OF ROADWAY CLOSED
--	--	--

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)					
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	160	305	20	140
45-55	220	660	330	495	40	120
60-65	260	780	390	645	40	140










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

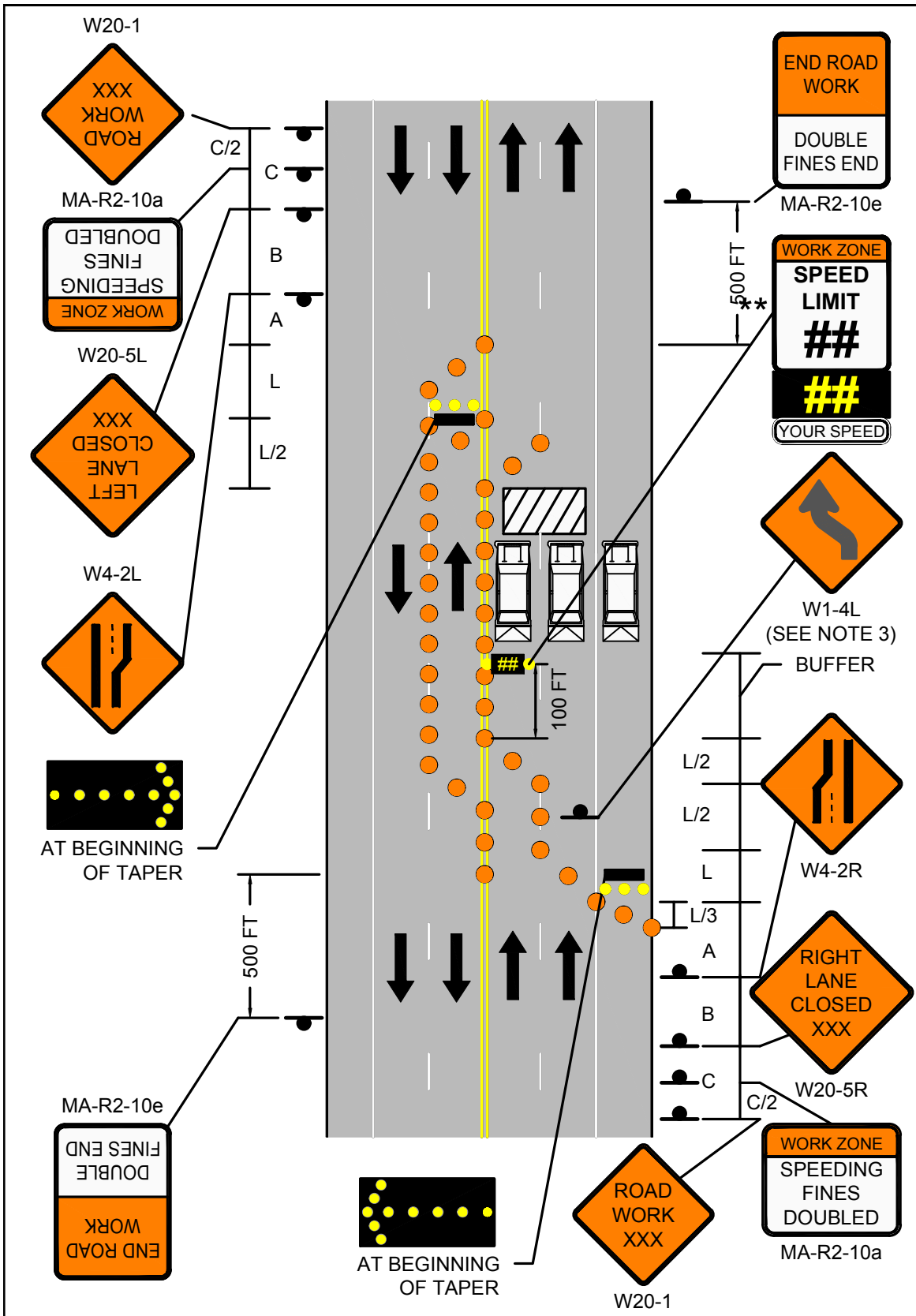
**NOTES**

1. MA-R2-10a LOCATED AT C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION.
3. W1-4L SHALL BE PLACED AT THE MIDDLE OF THE TANGENT.

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



**FIGURE 12**  
**STATIONARY OPERATIONS**  
**FOUR LANE UNDIVIDED ROADWAY**  
**HALF OF ROADWAY CLOSED**





Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
RIGHT LANE CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	305	20	60
45-55	220	660	495	40	50
60-65	260	780	645	40	55










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

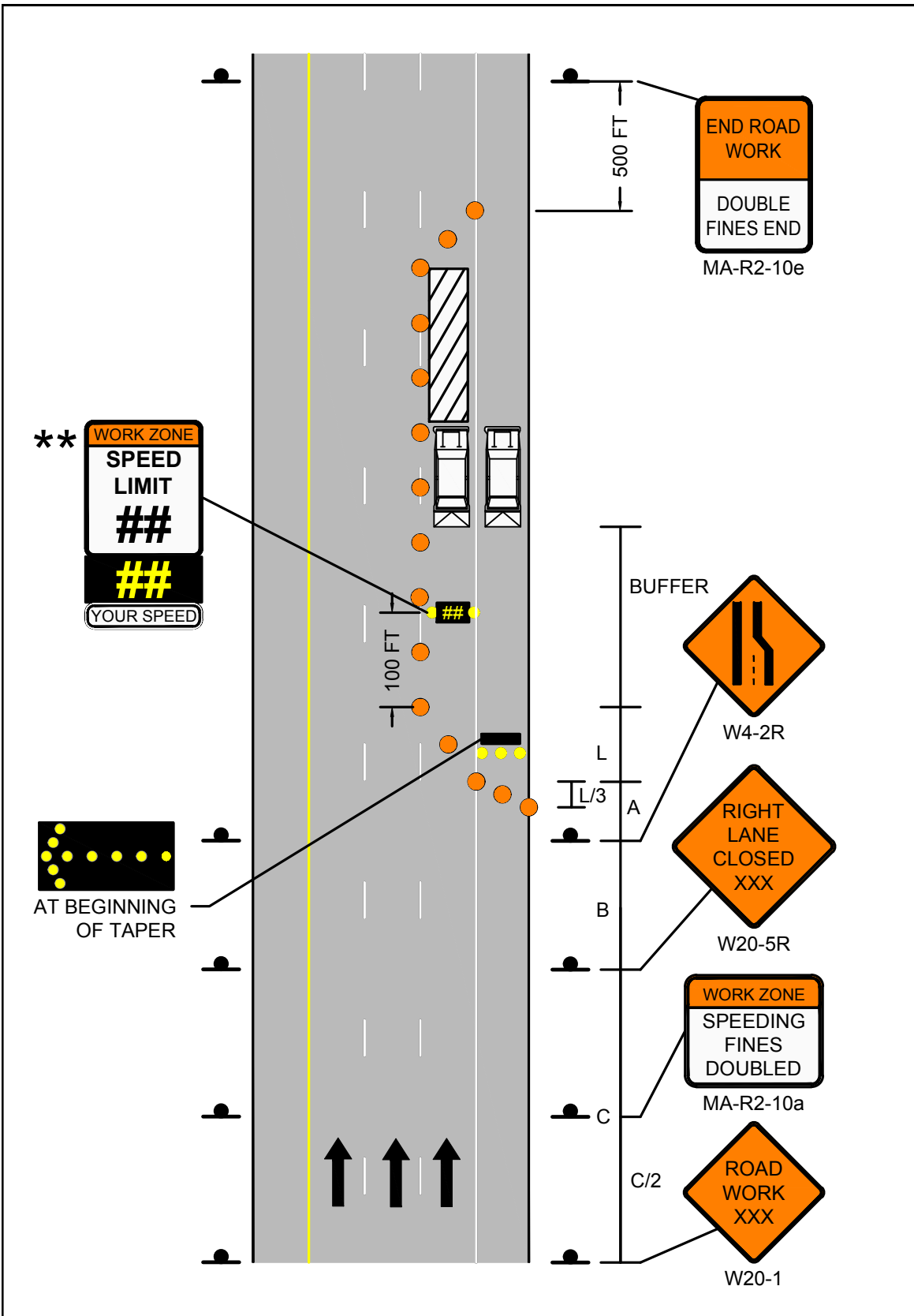
**NOTES**

1. MA-R2-10a LOCATED AT C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION.

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
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STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
LEFT LANE CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	305	20	60
45-55	220	660	495	40	50
60-65	260	780	645	40	55










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

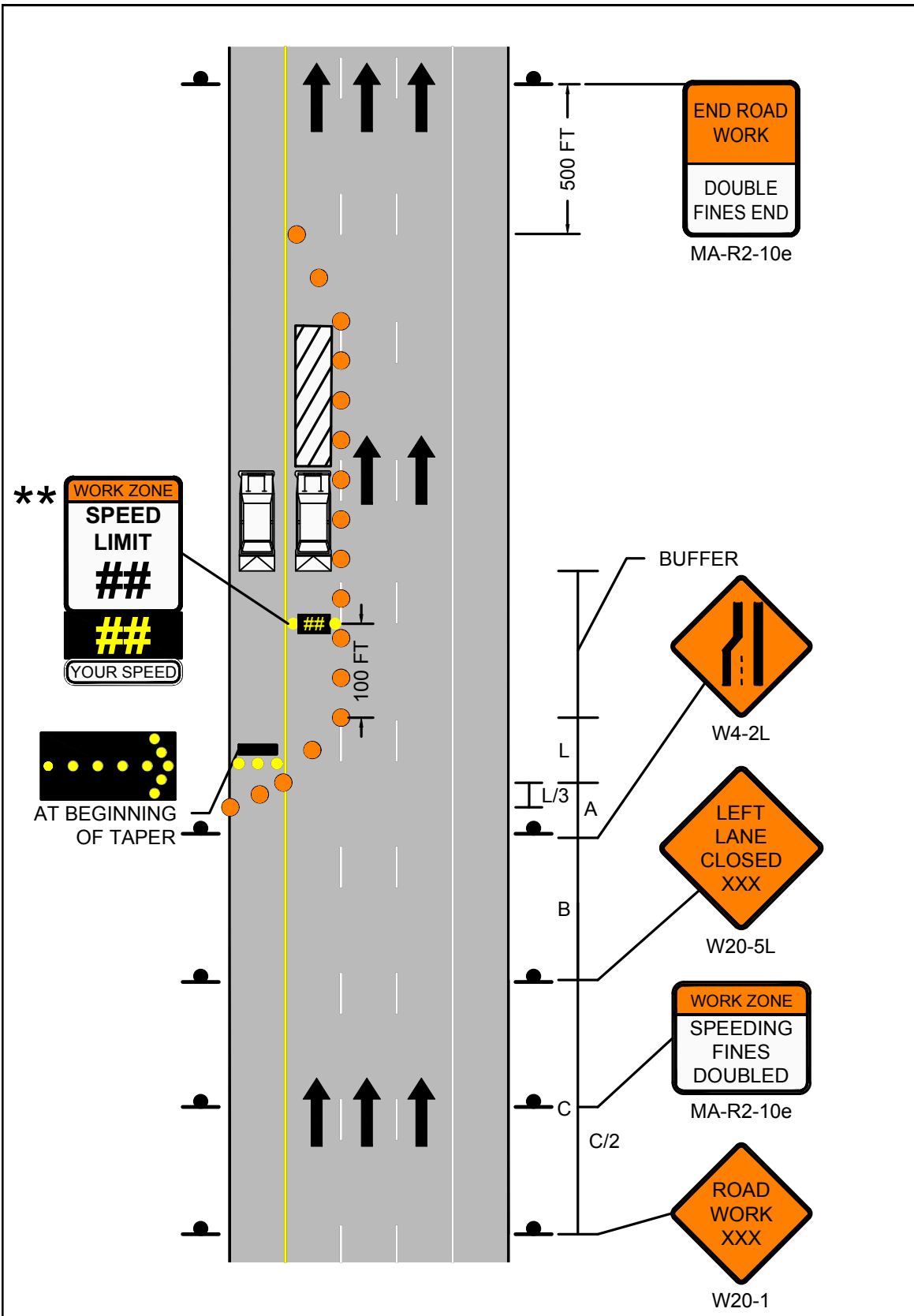
**NOTES**


1. MA-R2-10a LOCATED AT C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION.

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 MASSACHUSETTS DEPARTMENT OF TRANSPORTATION Highway Division PAGE 36	Work Zone Safety Standard Details and Drawings	STATIONARY OPERATIONS MULTILANE DIVIDED ROADWAY CENTER LANE OR RIGHT/CENTER LANES CLOSED
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POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)					
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	TANGENT LENGTH BETWEEN TAPERS T (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	640	305	20	110
45-55	220	660	1320	495	40	100
60-65	260	780	1560	645	40	115










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

**NOTES**

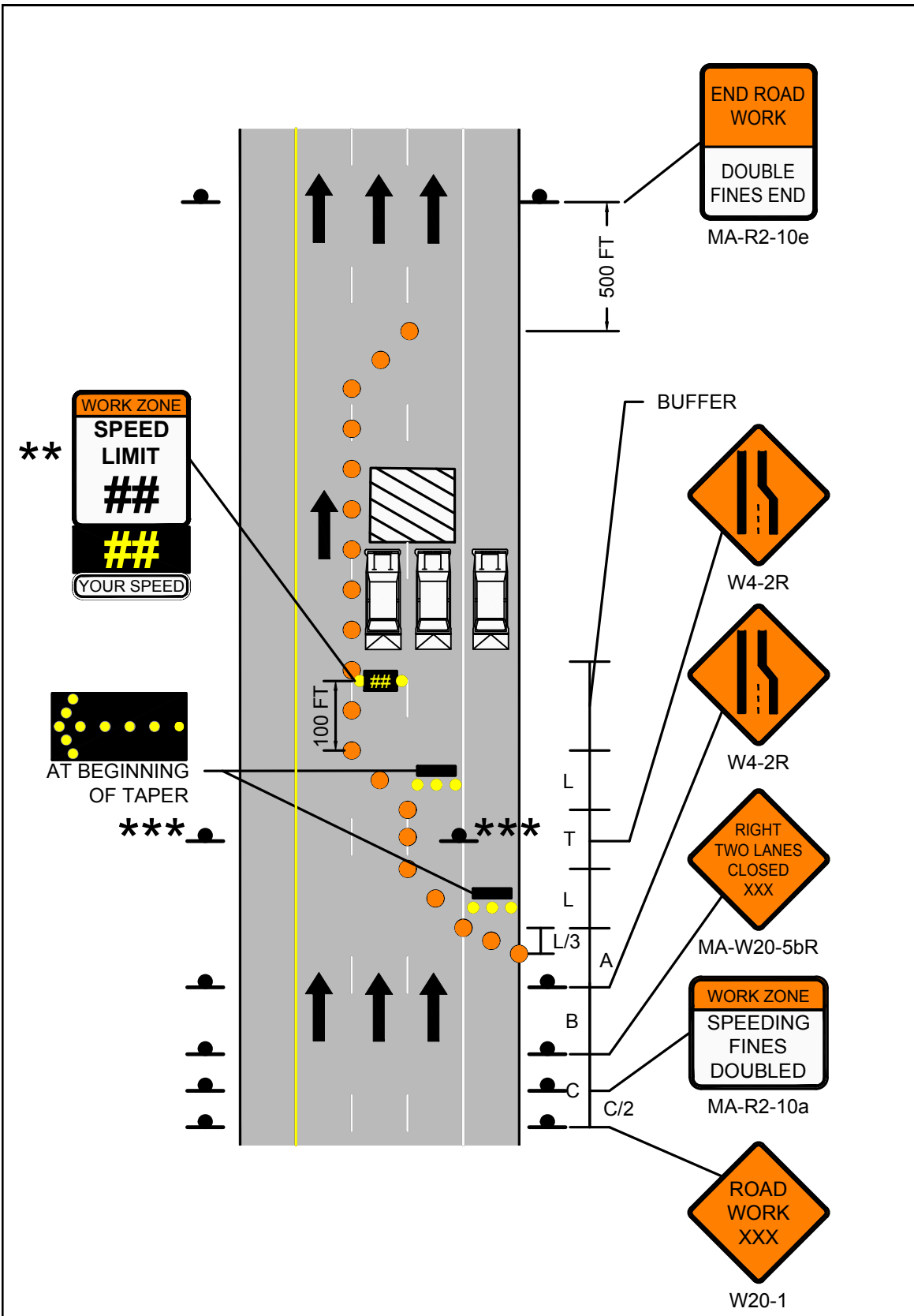
1. MA-R2-10a LOCATED AT C/2.
2. \*\*\*OPTIONAL AT THE ENGINEER'S DISCRETION.
3. \*\*\*THIS SET OF SIGNS SHALL BE LOCATED AT T/2.


**LEGEND**


-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE





 <p>PAGE 37</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 15 STATIONARY OPERATIONS MULTILANE DIVIDED ROADWAY CENTER LANE OR RIGHT/CENTER LANES CLOSED</p>
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 <p>Massachusetts Department of Transportation Highway Division</p> <p>PAGE 38</p>	Work Zone Safety Standard Details and Drawings	STATIONARY OPERATIONS MULTILANE DIVIDED ROADWAY CENTER LANE OR LEFT/CENTER LANES CLOSED
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POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)					
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	TANGENT LENGTH BETWEEN TAPERS T (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	640	305	20	110
45-55	220	660	1320	495	40	100
60-65	260	780	1560	645	40	115










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

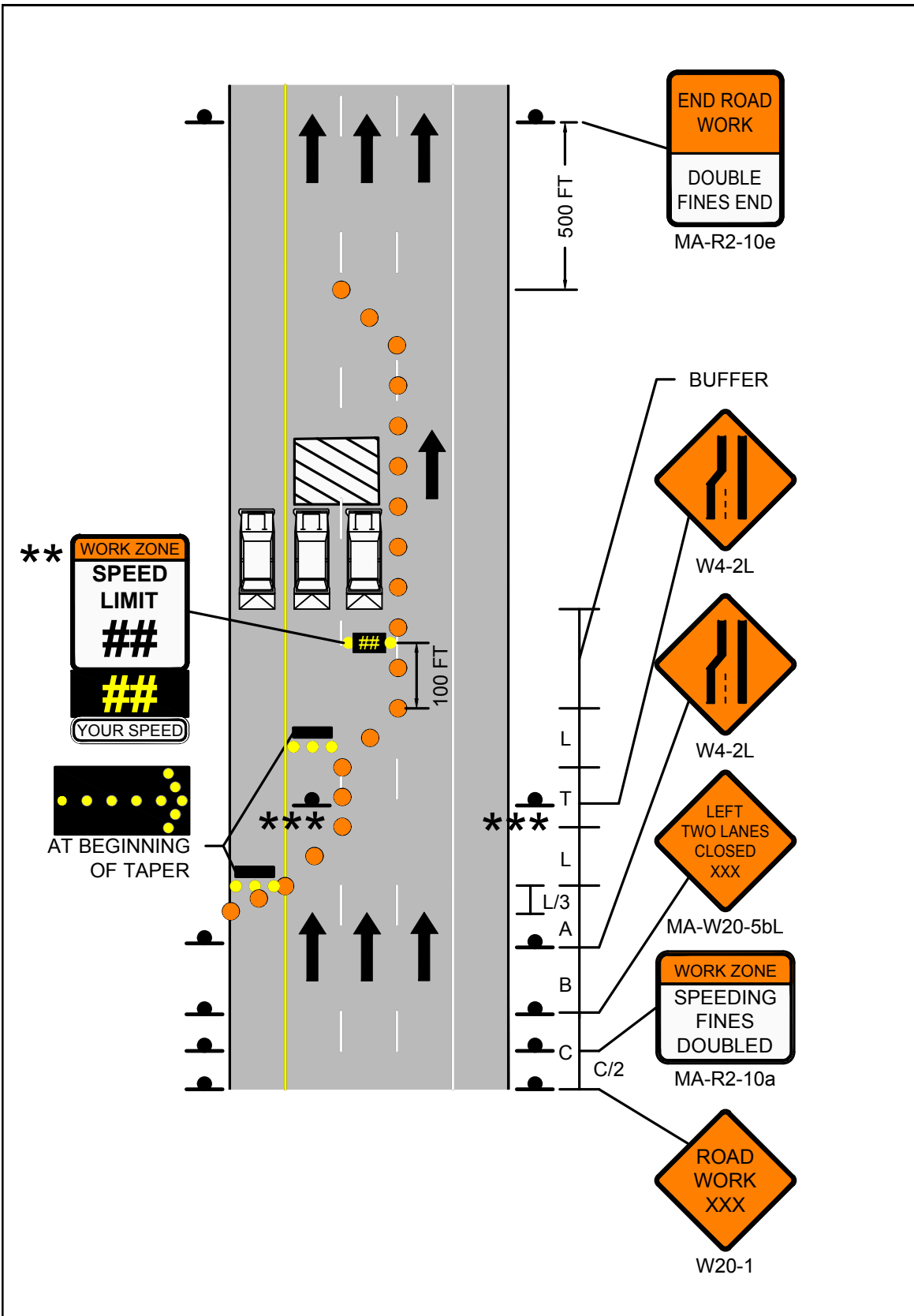
**NOTES**


1. MA-R2-10a LOCATED AT C/2.
2. \*\*\*OPTIONAL AT THE ENGINEER'S DISCRETION.
3. \*\*\*THIS SET OF SIGNS SHALL BE LOCATED AT T/2.

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 <p>Massachusetts Department of Transportation Highway Division</p> <p>PAGE 39</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 16 STATIONARY OPERATIONS MULTILANE DIVIDED ROADWAY CENTER LANE OR LEFT/CENTER LANES CLOSED</p>
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Work Zone Safety  
Standard Details  
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STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
RIGHT SIDE OF OFF RAMP CLOSED










POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	160	305	20	45
45-55	500 / 1000 / 1000	330	495	40	35

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

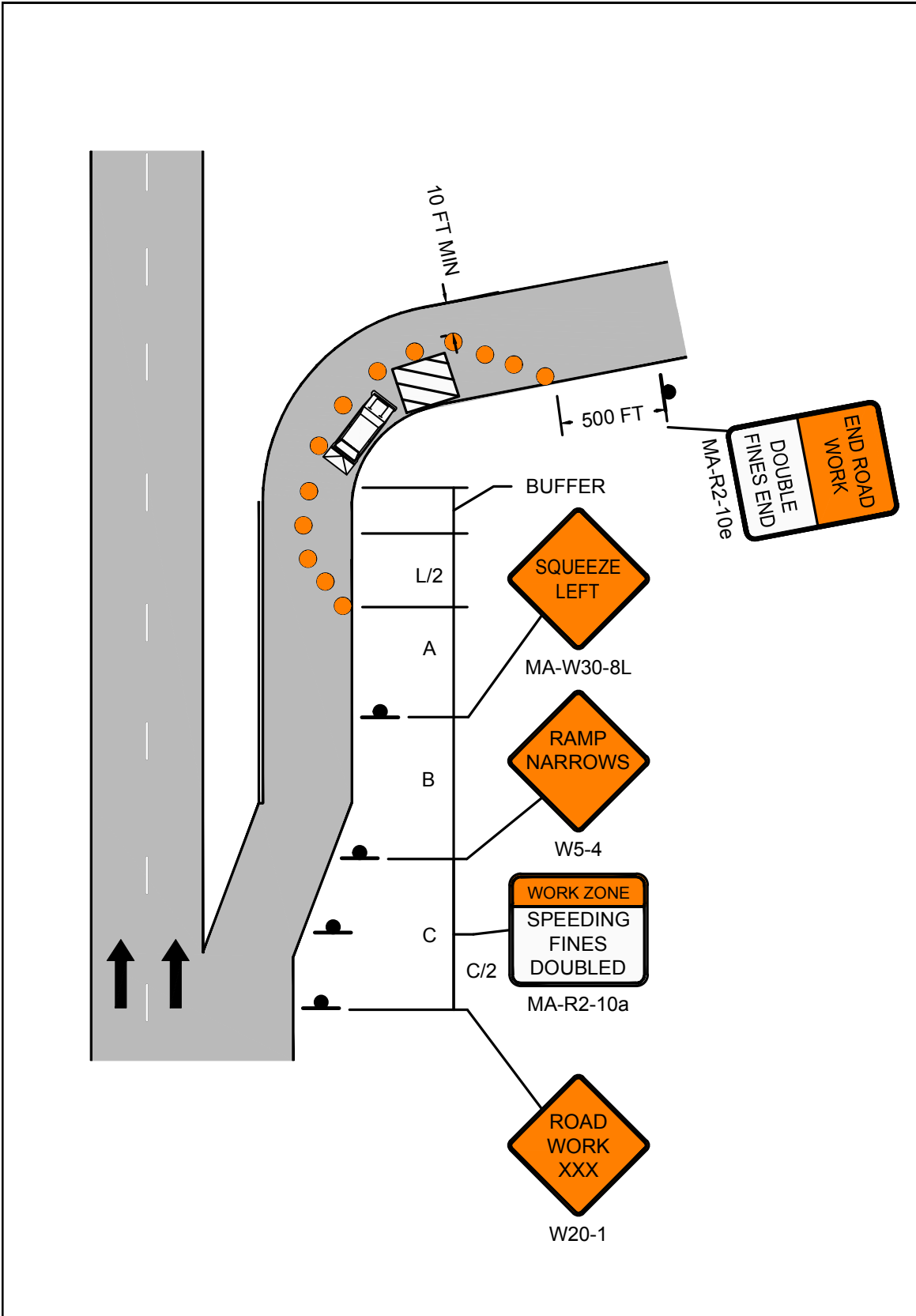
NOTES


1. MA-R2-10a LOCATED AT C/2.

LEGEND

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 <p>Massachusetts Department of Transportation Highway Division</p> <p>PAGE 41</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 17 STATIONARY OPERATIONS MULTILANE DIVIDED ROADWAY RIGHT SIDE OF OFF RAMP CLOSED</p>
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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
LEFT SIDE OF OFF RAMP CLOSED










POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	160	305	20	45
45-55	500 / 1000 / 1000	330	495	40	35

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

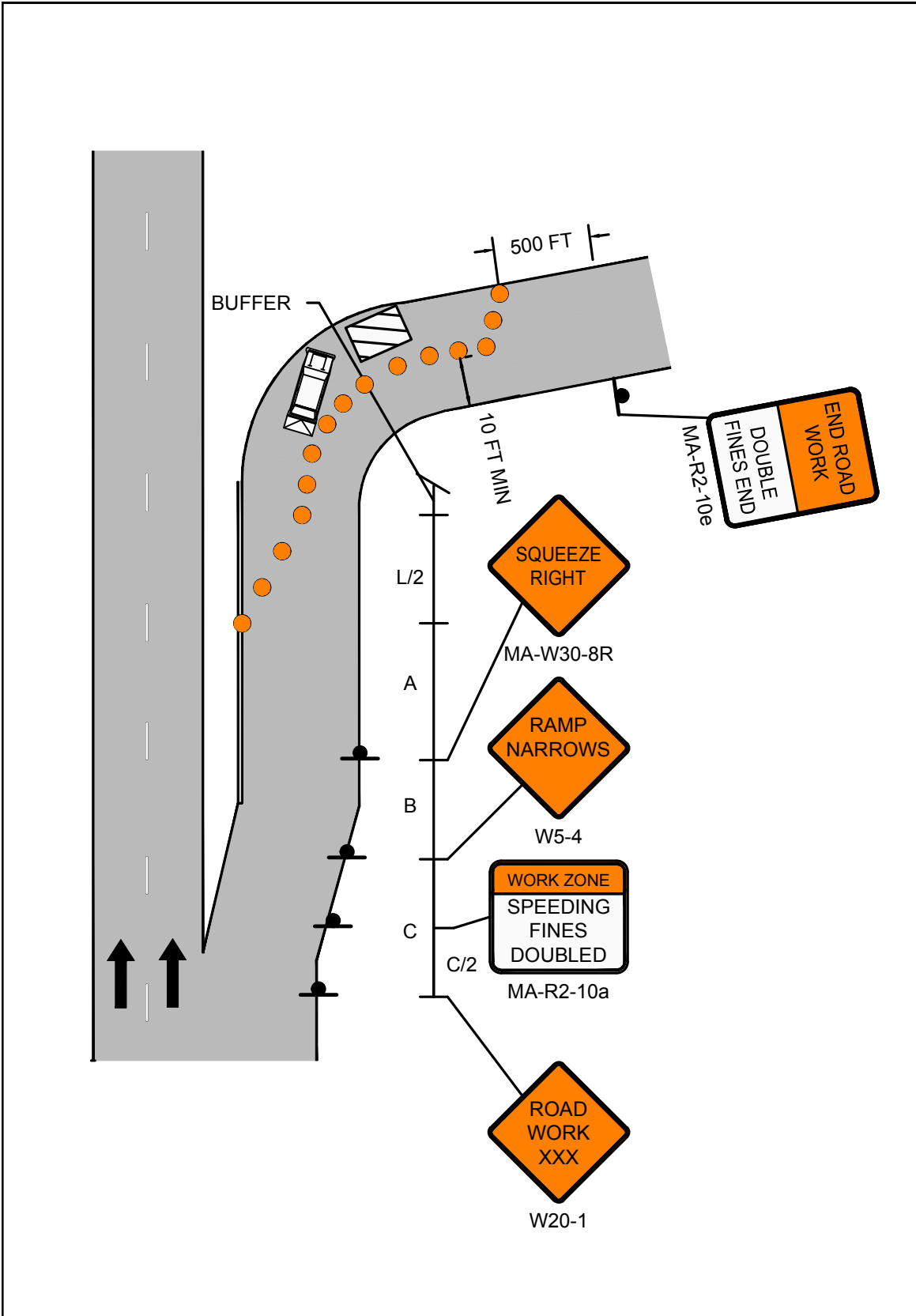
NOTES

1. MA-R2-10a LOCATED AT C/2.

LEGEND

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 18 STATIONARY OPERATIONS MULTILANE DIVIDED ROADWAY LEFT SIDE OF OFF RAMP CLOSED PAGE 43</p>
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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
ROADWORK BEYOND ON RAMP

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	305	20	175
45-55	220	660	495	40	135
60-65	260	780	645	40	155










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

**NOTES**

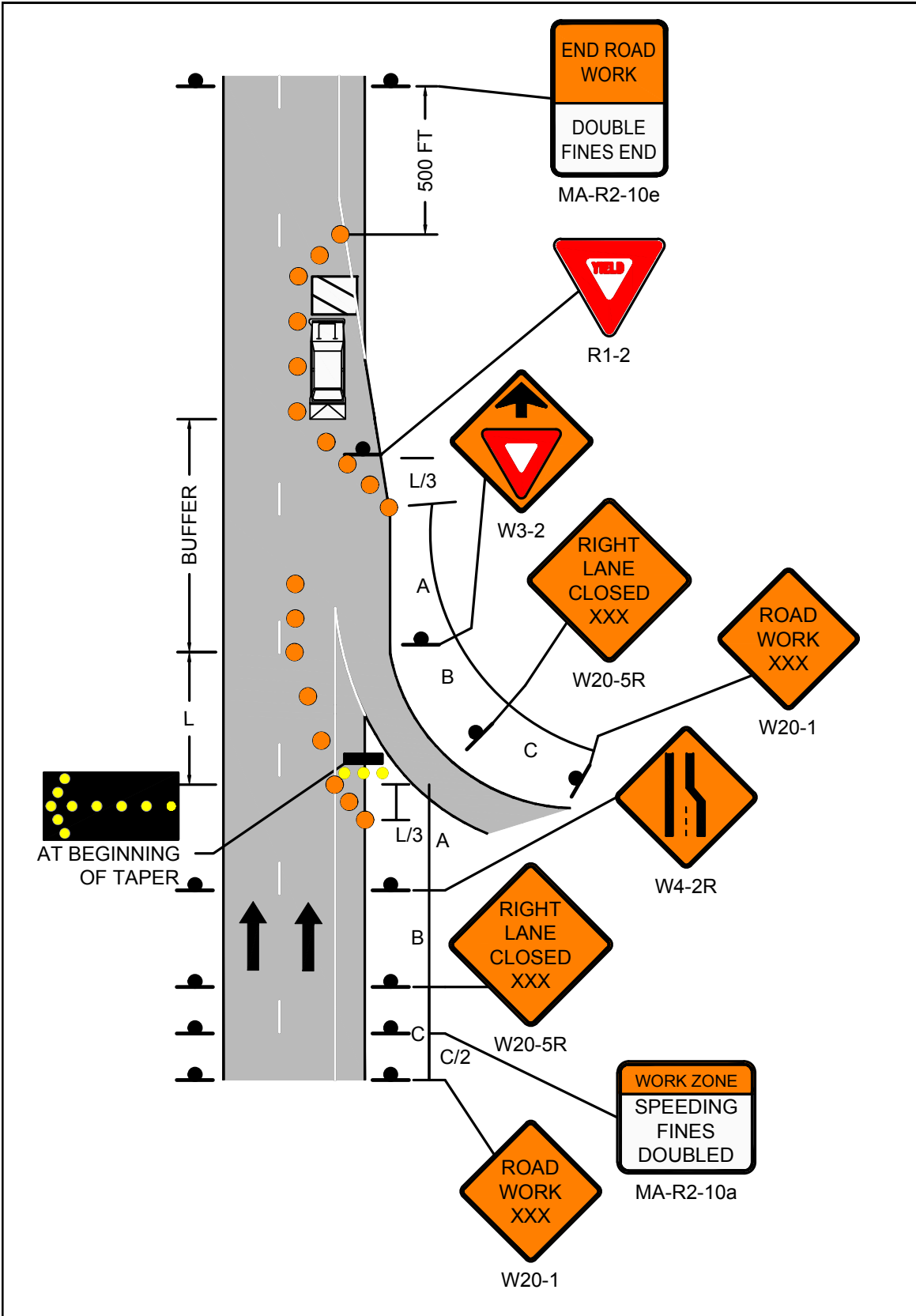
1. MA-R2-10a LOCATED AT C/2.


**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE





 <p>PAGE 45</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 19 STATIONARY OPERATIONS MULTILANE DIVIDED ROADWAY ROADWORK BEYOND ON RAMP</p>
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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
ROADWORK BEYOND OFF RAMP

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)					
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	160	305	20	70
45-55	220	660	330	495	40	55
60-65	260	780	390	645	40	65










\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

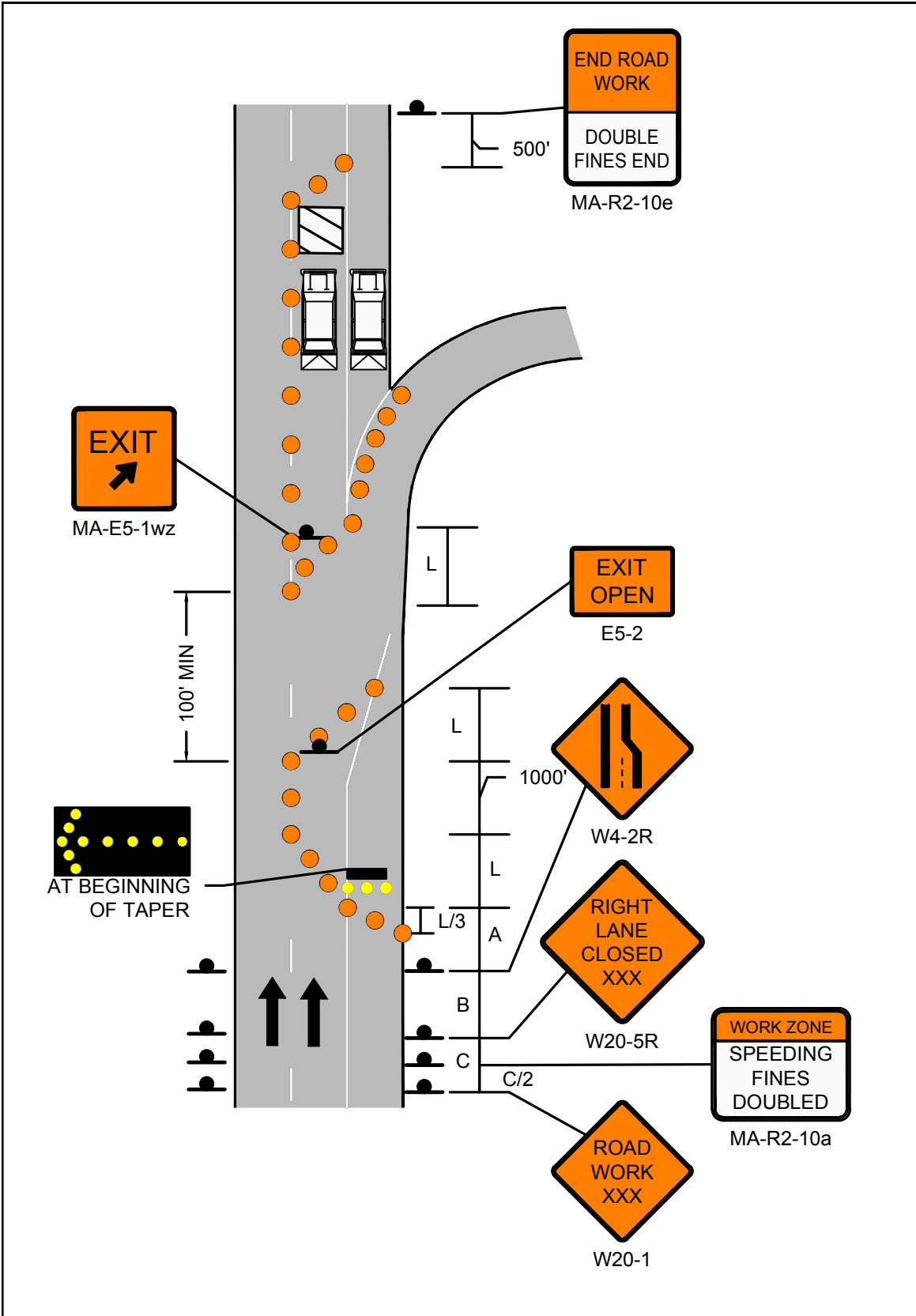
**NOTES**


1. MA-R2-10a LOCATED AT C/2.

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 <p>PAGE 47</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 20 STATIONARY OPERATIONS MULTILANE DIVIDED ROADWAY ROADWORK BEYOND OFF RAMP</p>
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Work Zone Safety  
Standard Details  
and Drawings










MULTILANE DIVIDED ROADWAY  
TYPICAL RAMP CLOSURE

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		SHOULDER TAPER LENGTH (L/3) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES
25-40	500 / 500 / 500	110	305	20	45
45-55	500 / 1000 / 1000	220	495	40	30
60-65	1000 / 1600 / 2600	260	645	40	35

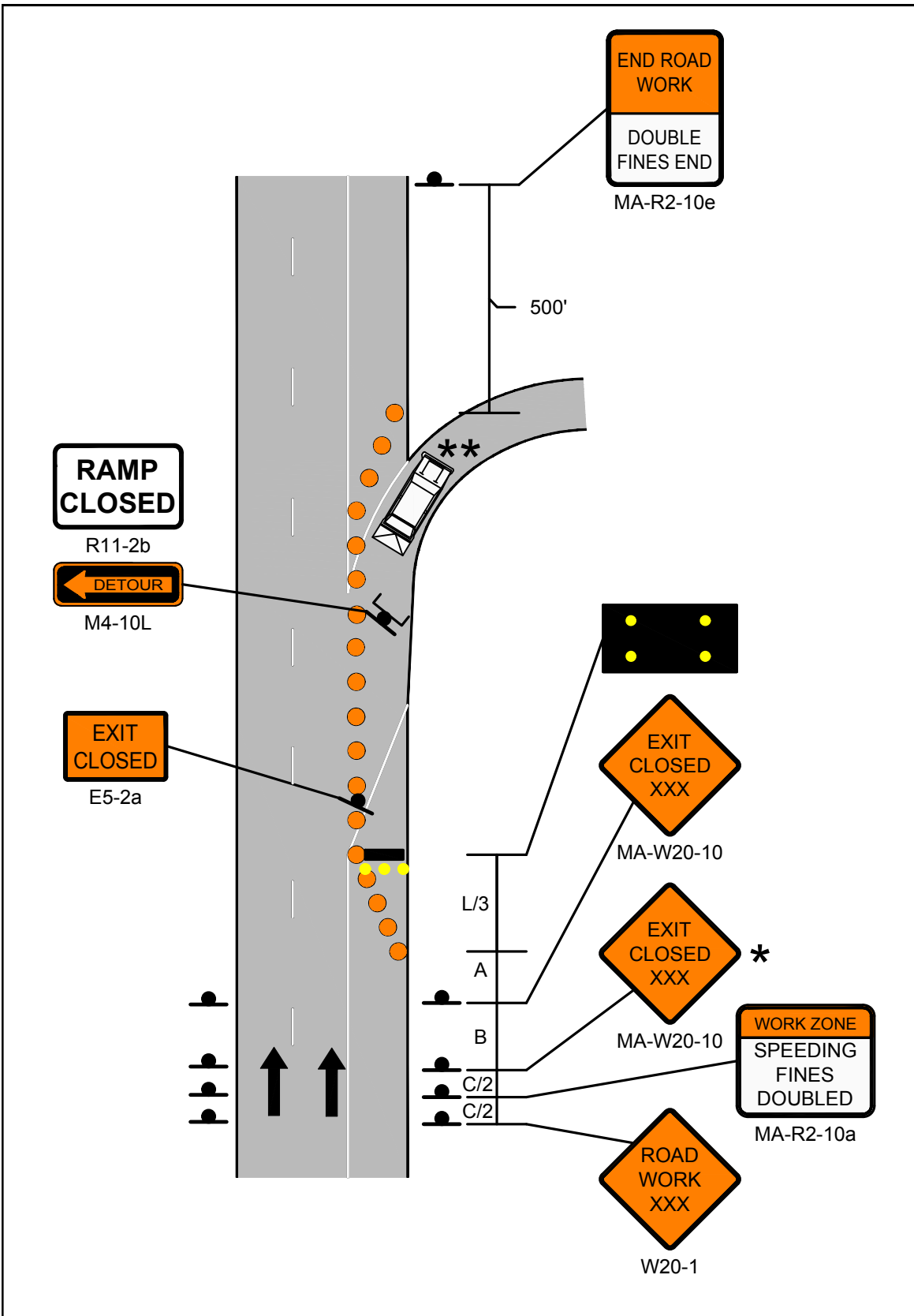
NOTES

1. MA-R2-10a LOCATED AT C/2.
2. \* NOT REQUIRED IF RIGHT LANE IS CLOSED IN ADVANCE OF EXIT.
3. \*\* OPTIONAL AT ENGINEER'S DISCRETION.

LEGEND

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
Standard Details  
and Drawings










MULTILANE DIVIDED ROADWAY  
TYPICAL CLOVERLEAF RAMP CLOSURE

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		SHOULDER TAPER LENGTH (L/3) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES
25-40	500 / 500 / 500	110	305	20	45
45-55	500 / 1000 / 1000	220	495	40	30
60-65	1000 / 1600 / 2600	260	645	40	35

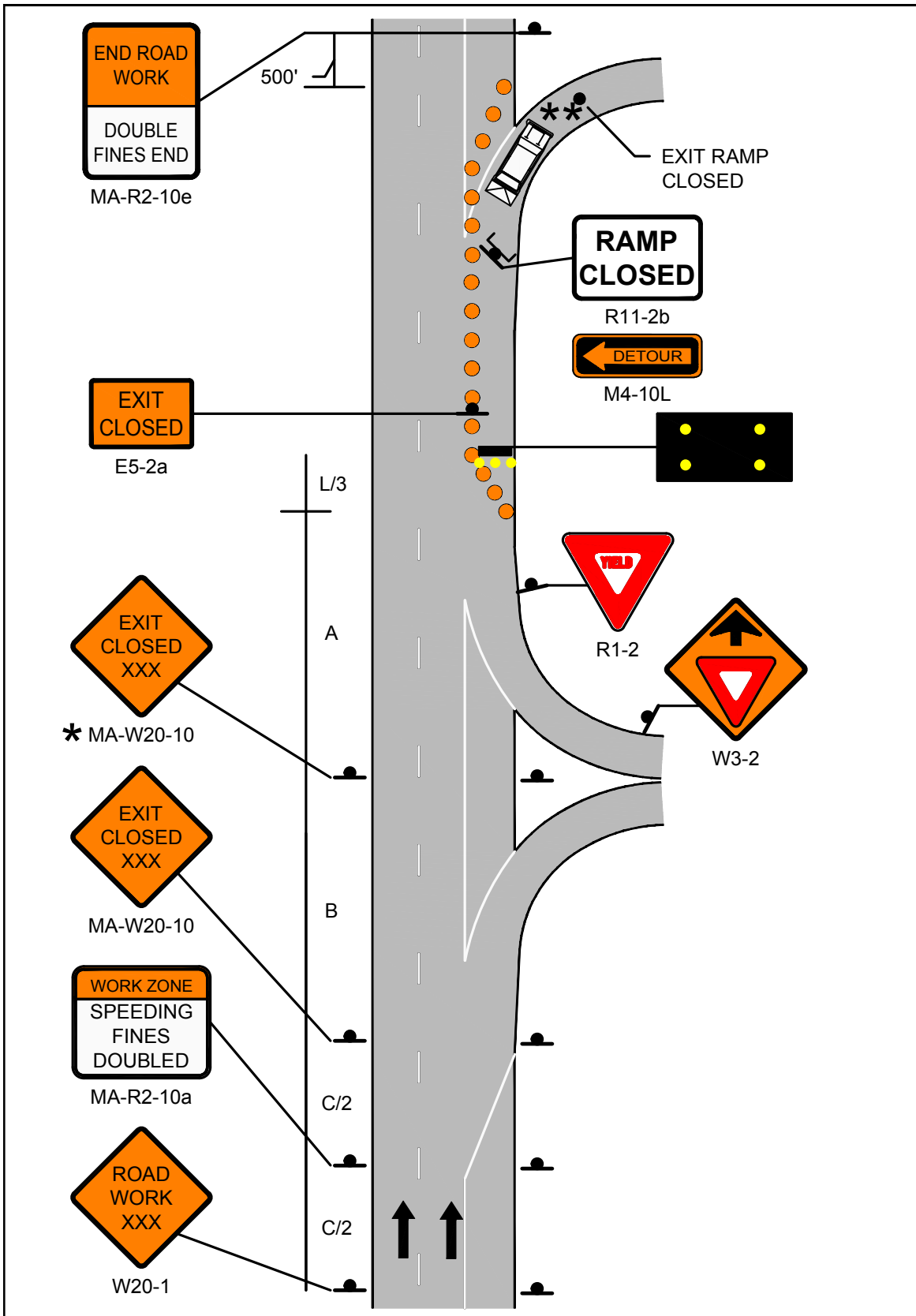
NOTES


1. MA-R2-10a LOCATED AT C/2.
2. \* NOT REQUIRED IF RIGHT LANE IS CLOSED IN ADVANCE OF EXIT.
3. \*\* OPTIONAL AT ENGINEER'S DISCRETION.

LEGEND

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 <p>Massachusetts Department of Transportation Highway Division</p> <p>PAGE 51</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 22 MULTILANE DIVIDED ROADWAY TYPICAL CLOVERLEAF RAMP CLOSURE</p>
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PAGE 52










Work Zone Safety  
Standard Details  
and Drawings

MULTILANE DIVIDED ROADWAY  
TYPICAL RAMP CLOSURE  
ADVANCE SIGNING

NOTES

1. IF THE CLOSED RAMP IS LOCATED DOWNSTREAM FROM THE PROPOSED DETOUR ROUTE/RAMP, A PCMS SHALL BE POSITIONED AT A SUFFICIENT DISTANCE IN ADVANCE OF THE DETOUR ROUTE/RAMP AND SHOULD STATE WHICH RAMP IS CLOSED AND WHICH SHALL BE USED FOR THE DETOUR.
2. IF THE CLOSED RAMP IS LOCATED UPSTREAM FROM THE PROPOSED DETOUR ROUTE/RAMP, A PCMS SHALL BE POSITIONED PRIOR TO THE CLOSED RAMP AND SHOULD STATE WHICH RAMP IS CLOSED AND WHICH SHALL BE USED FOR THE DETOUR.
3. A SUFFICIENT NUMBER OF DETOUR SIGNS (M4-9 SERIES) SHOULD BE DEPLOYED TO PROPERLY DIRECT DETOURED TRAFFIC. SIGN SPACING SHALL BE AT THE DIRECTION OF THE ENGINEER.

LEGEND

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



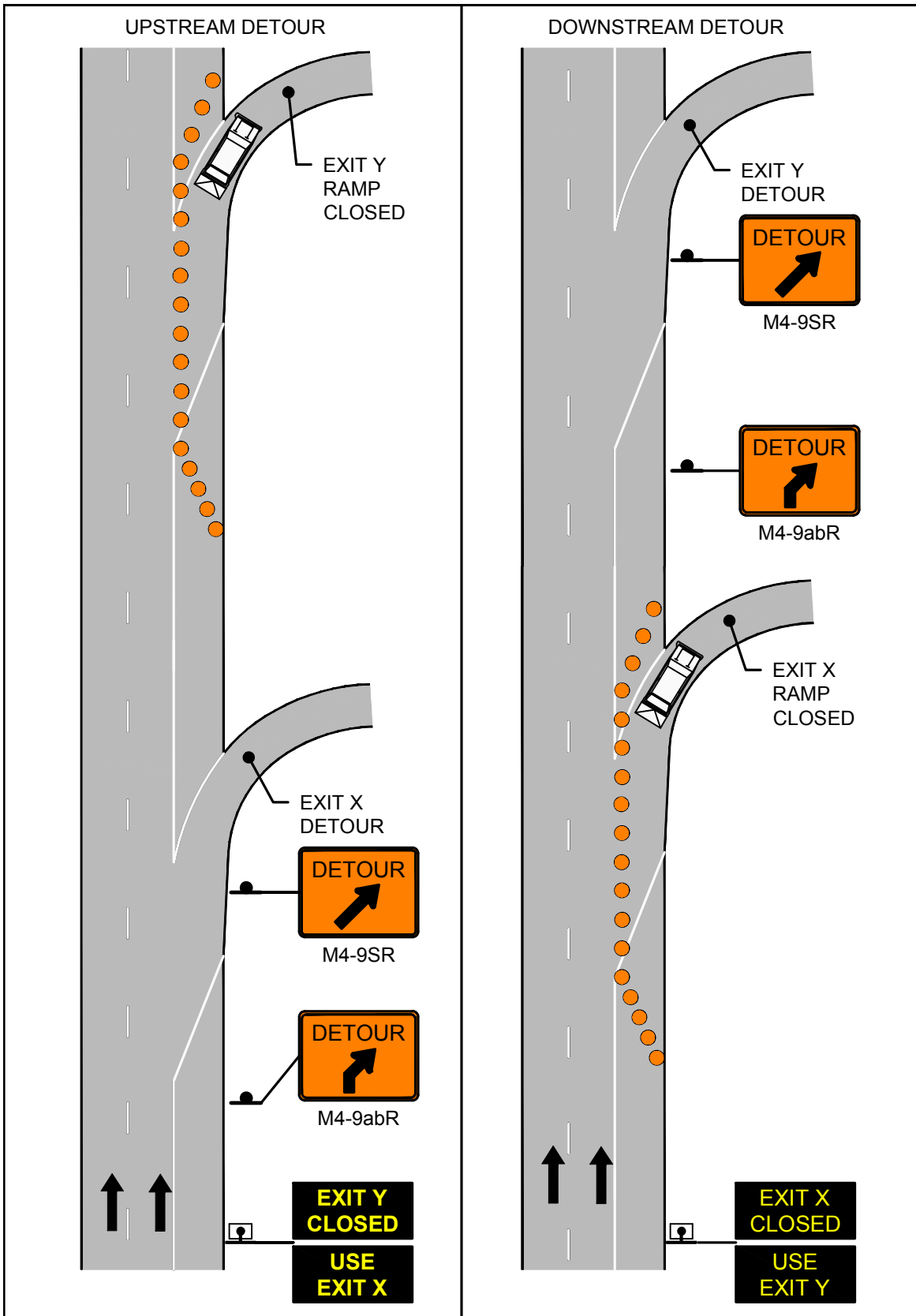


FIGURE 23  
MULTILANE DIVIDED ROADWAY  
TYPICAL RAMP CLOSURE  
ADVANCE SIGNING



FIGURE 24-1  
MULTILANE DIVIDED ROADWAY  
PLACEMENT OF TEMPORARY  
PORTABLE RUMBLE STRIPS  
SHEET 1 OF 2




POSTED REGULATORY OR WORK ZONE SPEED	SEPARATION BETWEEN RUMBLE STRIPS
Above 55-mph	20-feet
36-mph to 55-mph	15-feet
35-mph and under	10-feet

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	TANGENT LENGTH BETWEEN TAPERS (T) (FT)
25-40	500 / 500 / 500	640
45-55	500 / 1000 / 1000	1320
60-65	1000 / 1600 / 2600	1560

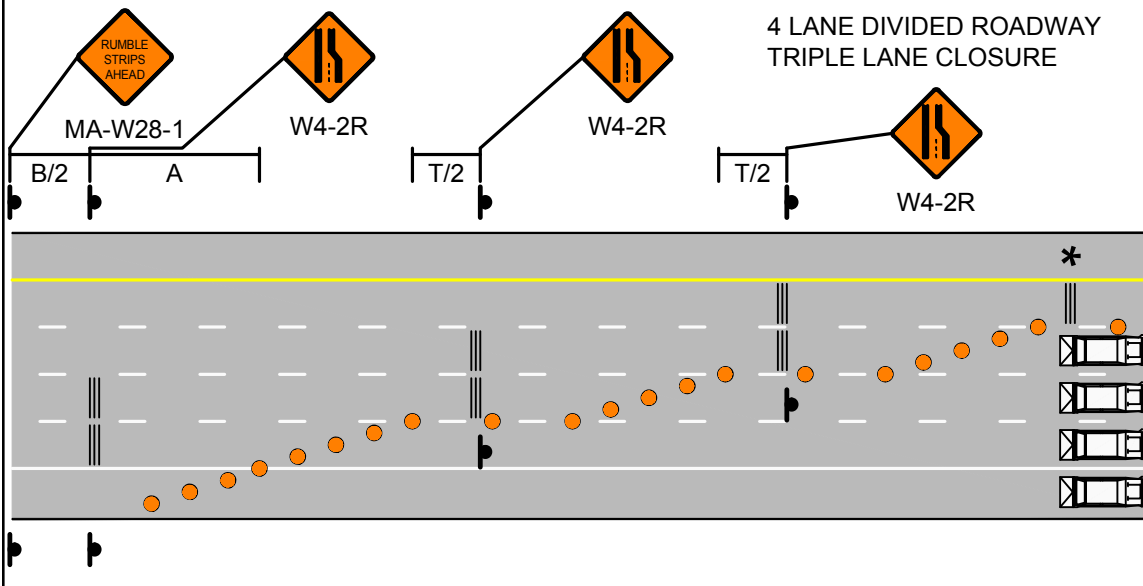
**NOTES**

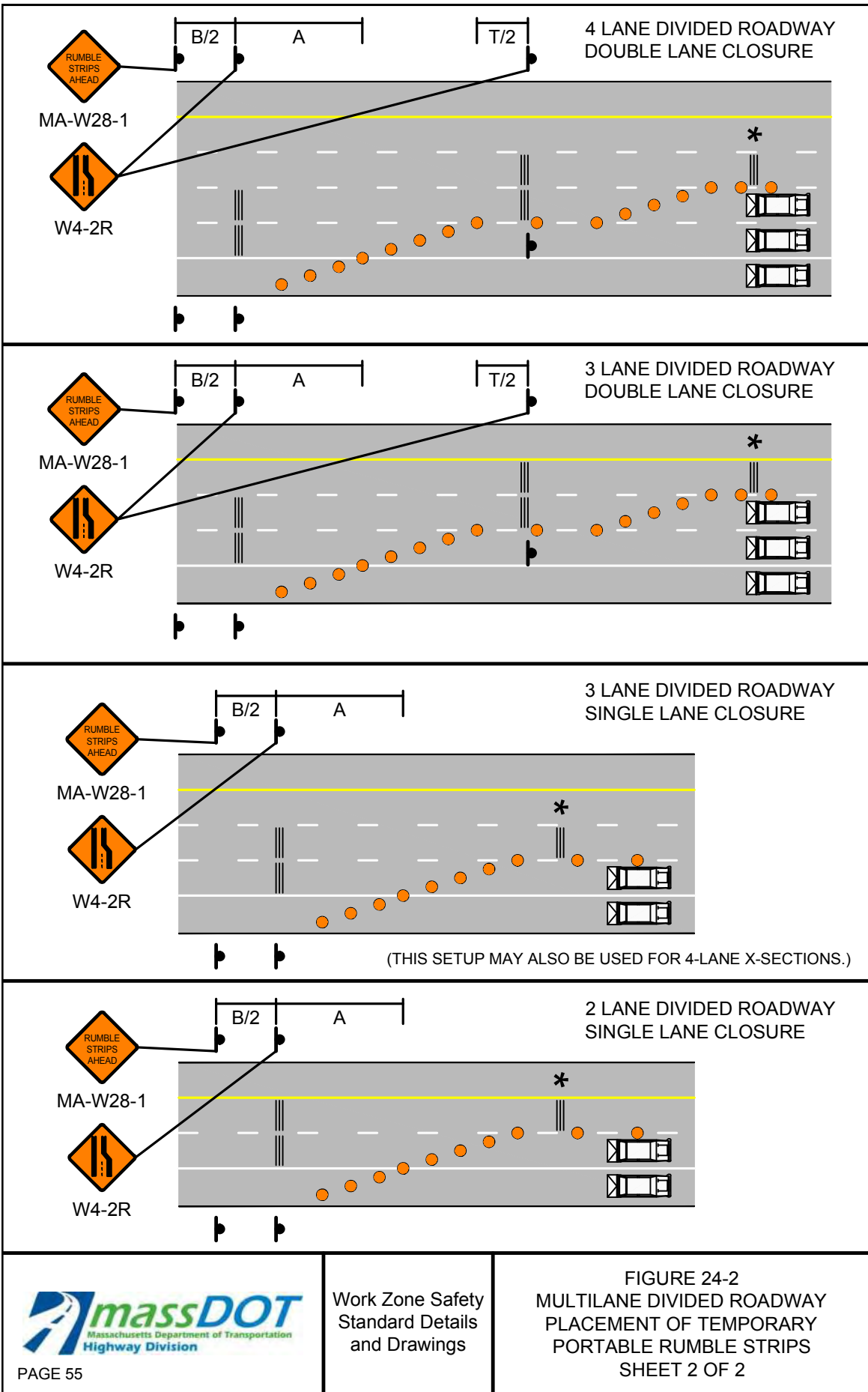
1. THE INTENTION OF THESE DETAILS IS ONLY TO DEPICT THE PLACEMENT OF TEMPORARY PORTABLE RUMBLE STRIPS (TPRS) IN RELATIONSHIP TO THE TAPER AND THE BUFFER OF A SINGLE- OR MULTI-LANE CLOSURE. THE DEPICTION OF THE NUMBER AND SPACING OF ALL OTHER TRAFFIC CONTROL DEVICES IS NOT TO SCALE. REFER TO OTHER DETAILS FOR LANE CLOSURES FOR THE PLACEMENT AND NUMBER OF ALL OTHER TRAFFIC CONTROL DEVICES.
2. THESE DETAILS ONLY DEPICT RIGHT LANE CLOSURES. LEFT LANE CLOSURES SHOULD UTILIZE A MIRROR IMAGE OF THESE SETUPS, STARTING WITH CLOSURE OF THE LEFTMOST LANE.
3. \* THIS TPRS ARRAY IS OPTIONAL AT THE ENGINEER'S DISCRETION. IF USED, IT SHOULD BE PLACED ADJACENT TO THE BUFFER.
4. DETAILS SHOW THE MINIMUM NUMBER OF TPRS REQUIRED. ADDITIONAL MAY BE USED IF CONDITIONS WARRANT.


**LEGEND**

-  CHANNELIZATION DEVICE
-  TRUCK MOUNTED ATTENUATOR
-  TEMPORARY PORTABLE RUMBLE STRIP

NOT TO SCALE

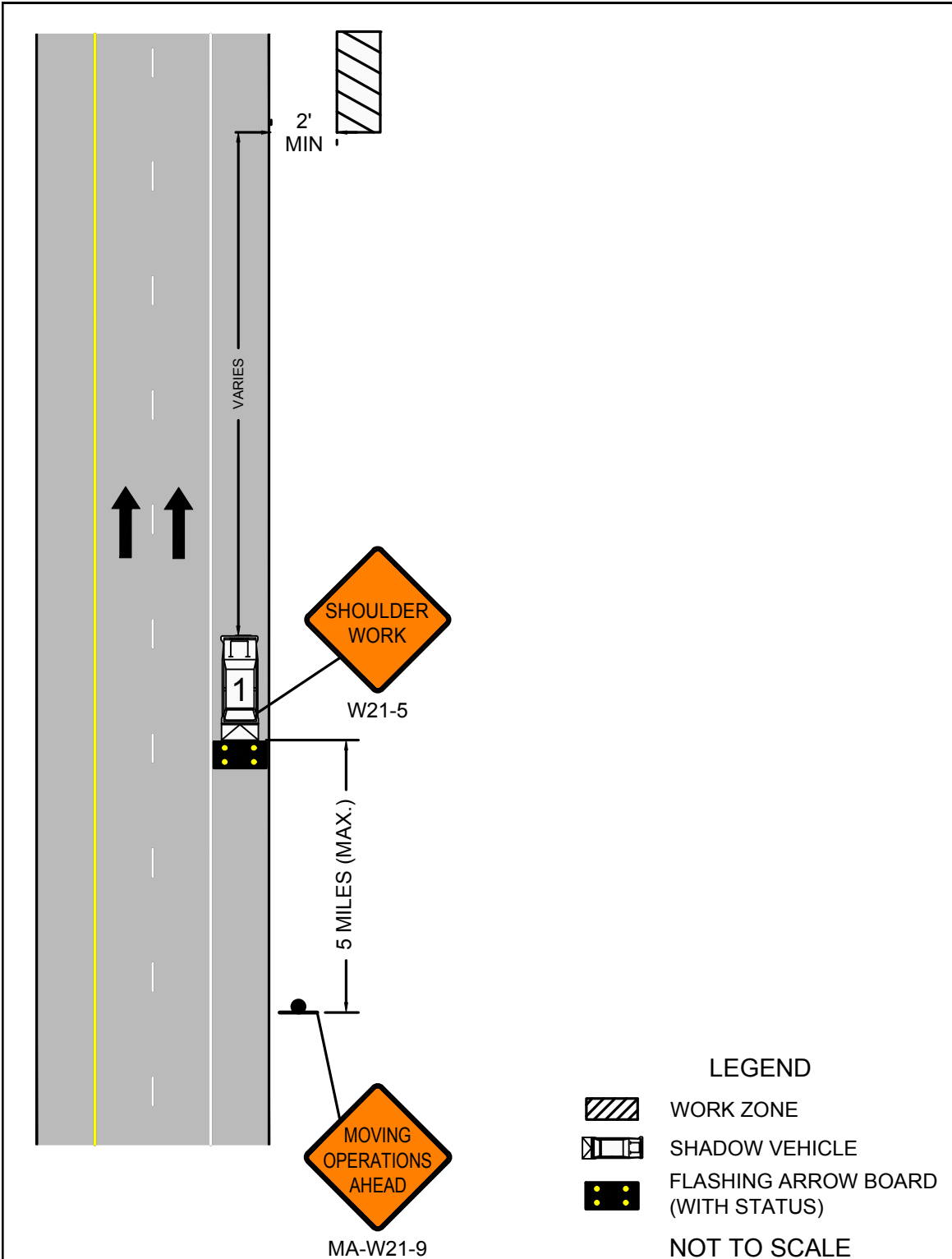




 <p>PAGE 56</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>NOTES FOR MOBILE OPERATIONS</p>
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**Notes for Mobile Operations**

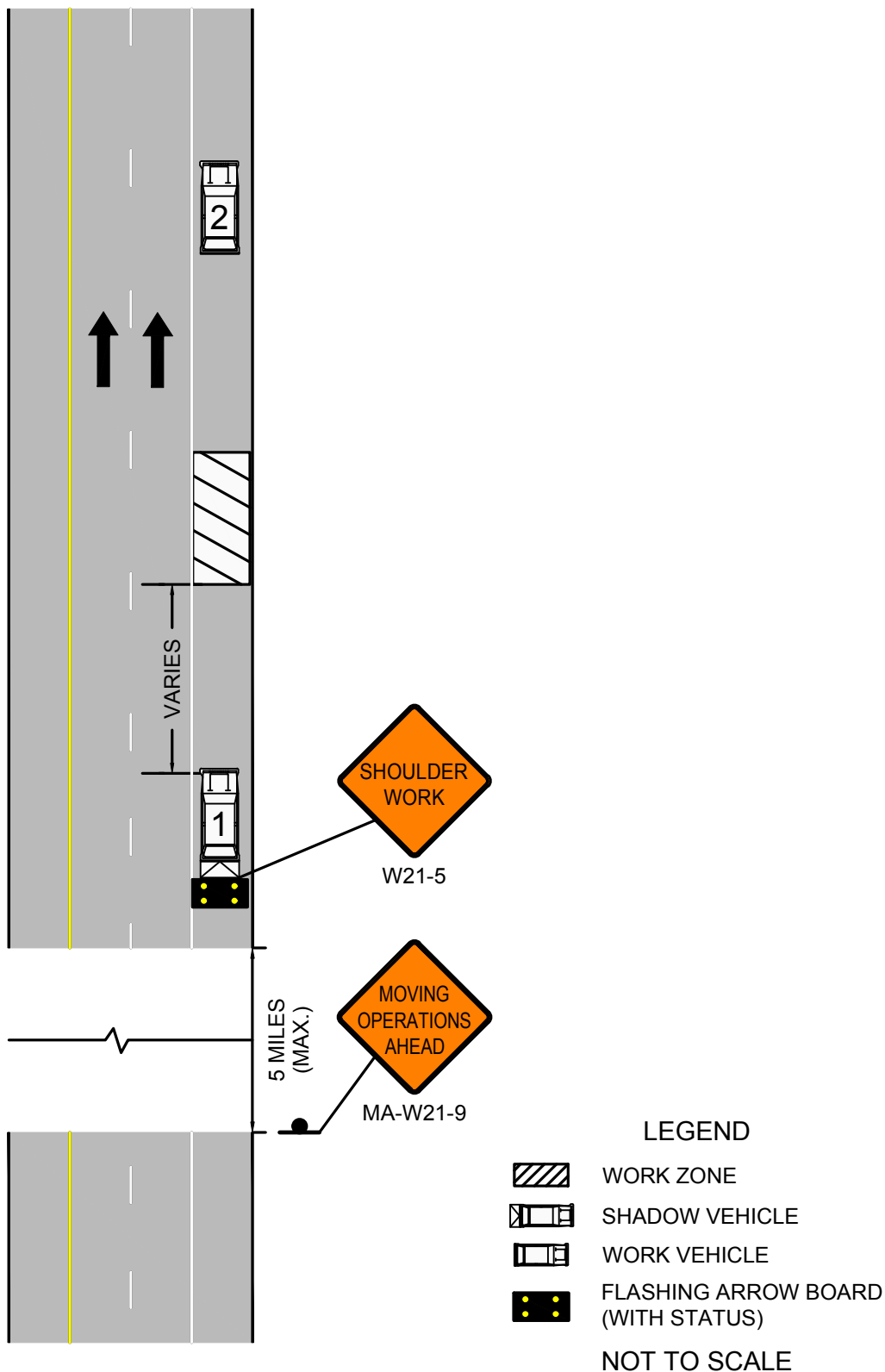
- Unless otherwise stated, these notes shall apply to all Mobile Operation setups.
  - Additional, setup-specific notes may be found on individual sheets.
1. The Supervisor shall travel the designated roadway prior to scheduling the work to ensure that sufficient and appropriate traffic control devices will be available. Special consideration shall be exercised to ensure that appropriate traffic controls be placed in areas that will have limited visibility of the work areas or any associated traffic queues.
  2. Vehicles used for these operations shall be made highly visible with appropriate equipment such as flashing lights, rotating beacons, flags, signs, flashing arrow boards, and/or portable changeable message signs. Any signs mounted to these vehicles shall not obscure the visibility of other devices.
  3. All vehicles shown may not be required based upon roadway conditions. However, when needed and practical, additional shadow vehicles and equipment to warn and protect motorists and workers should be used. Based upon roadway conditions, the addition of a police detail with cruiser may be used for additional protection or warning for the traveling public.
  4. The distance between the work and shadow vehicle(s) may vary according to the terrain and other factors. Shadow vehicles are used to warn traffic of the operations ahead. Whenever adequate sight distance exists, the shadow vehicle(s) should maintain the minimum appropriate distance and maintain the same speed to prevent non-work related vehicles from entering the work convoy. If this formation cannot be maintained then additional traffic control devices should be deployed in advance of any vertical or horizontal curves that may restrict the sight distance of an oncoming vehicle to either the work vehicle or associated traffic queue.
  5. All shadow vehicles shall be equipped with a truck or trailer mounted attenuator (TMA) and a flashing arrow board.
  6. Signs should be covered or turned from view when work is not in progress.
  7. Portable changeable message signs may be used in lieu of MA-W21-9 signs and any signs mounted directly to a shadow vehicle.



**NOTES**

1. IF THE WORK AREA IS SUFFICIENTLY AWAY FROM THE EDGE OF ROADWAY (20' MINIMUM) THEN SIGNS AND VEHICLES MAY NOT BE REQUIRED.

 <p>PAGE 57</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 25 MOBILE OPERATIONS ANY ROADWAY BEYOND RIGHT SHOULDER</p>
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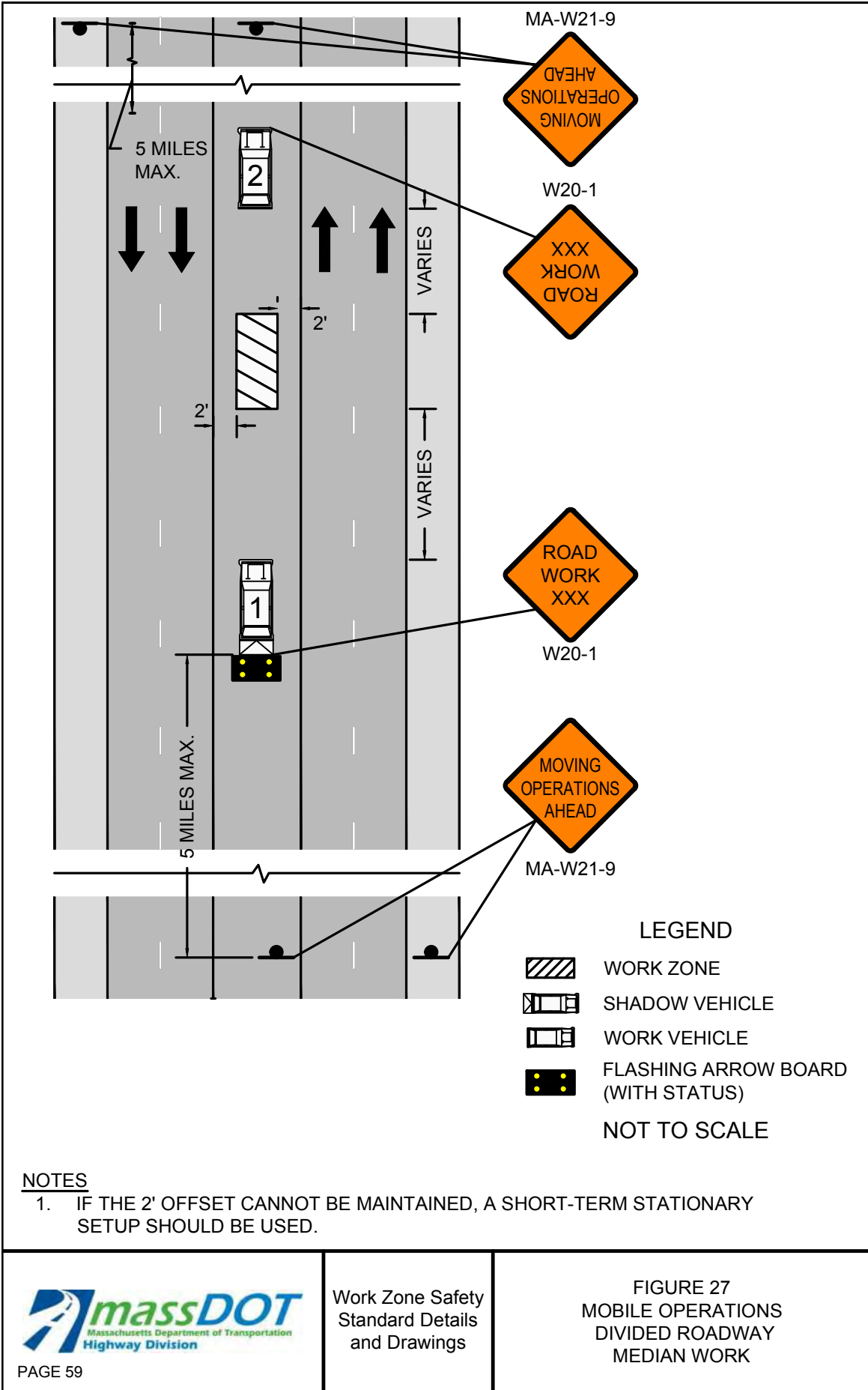
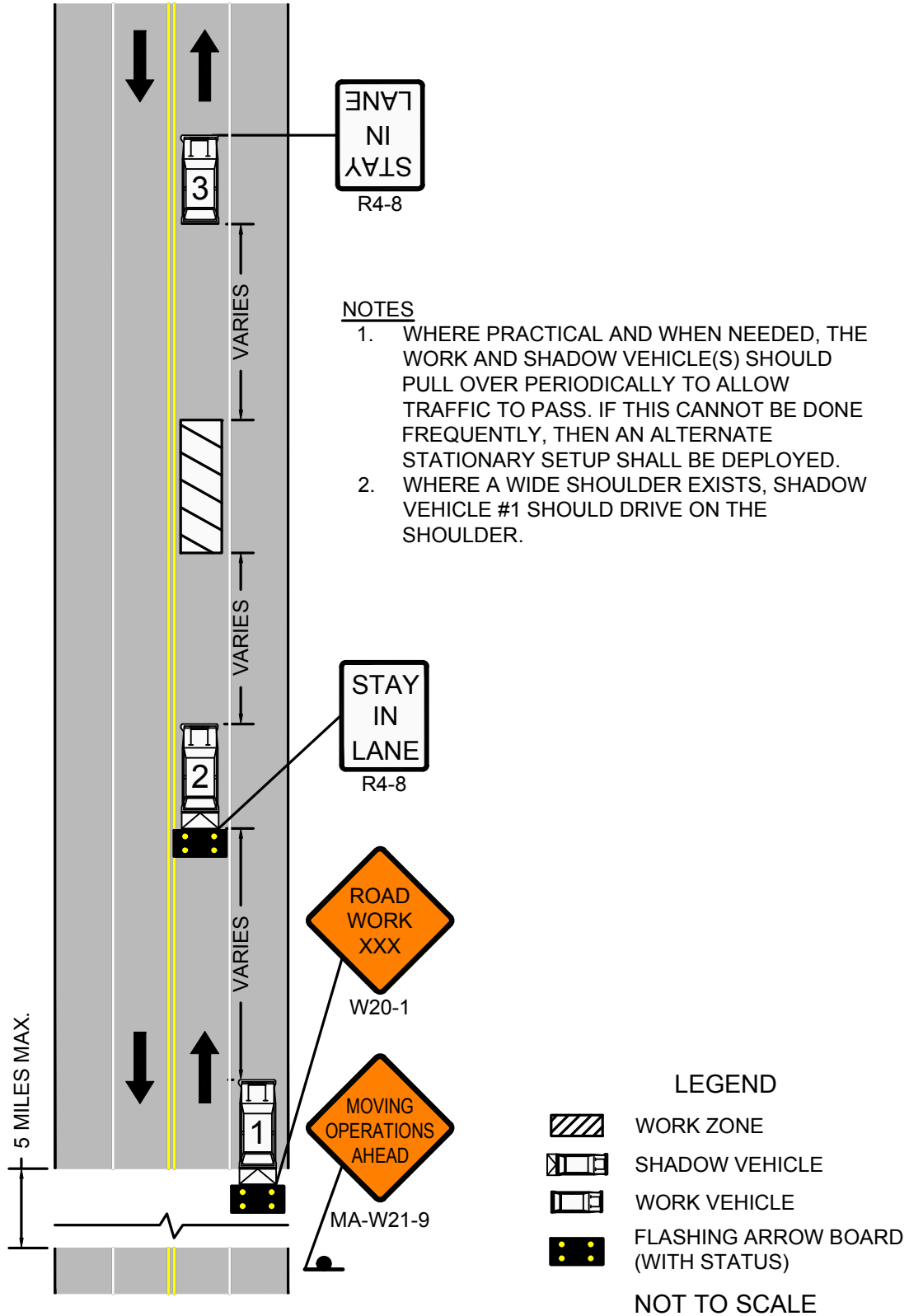




FIGURE 28  
MOBILE OPERATIONS  
UNDIVIDED TWO LANE ROADWAY  
HALF OF ROADWAY CLOSED





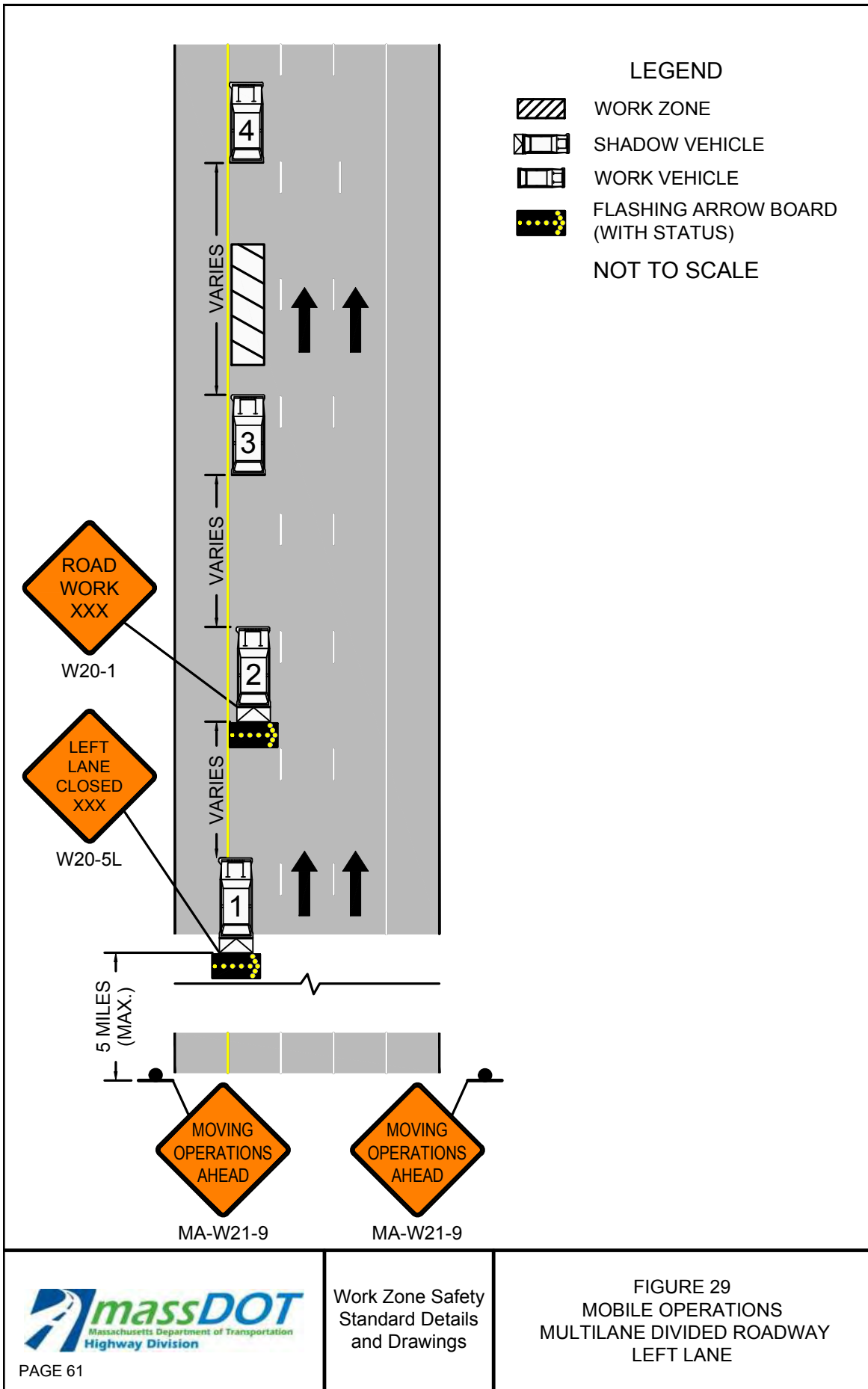
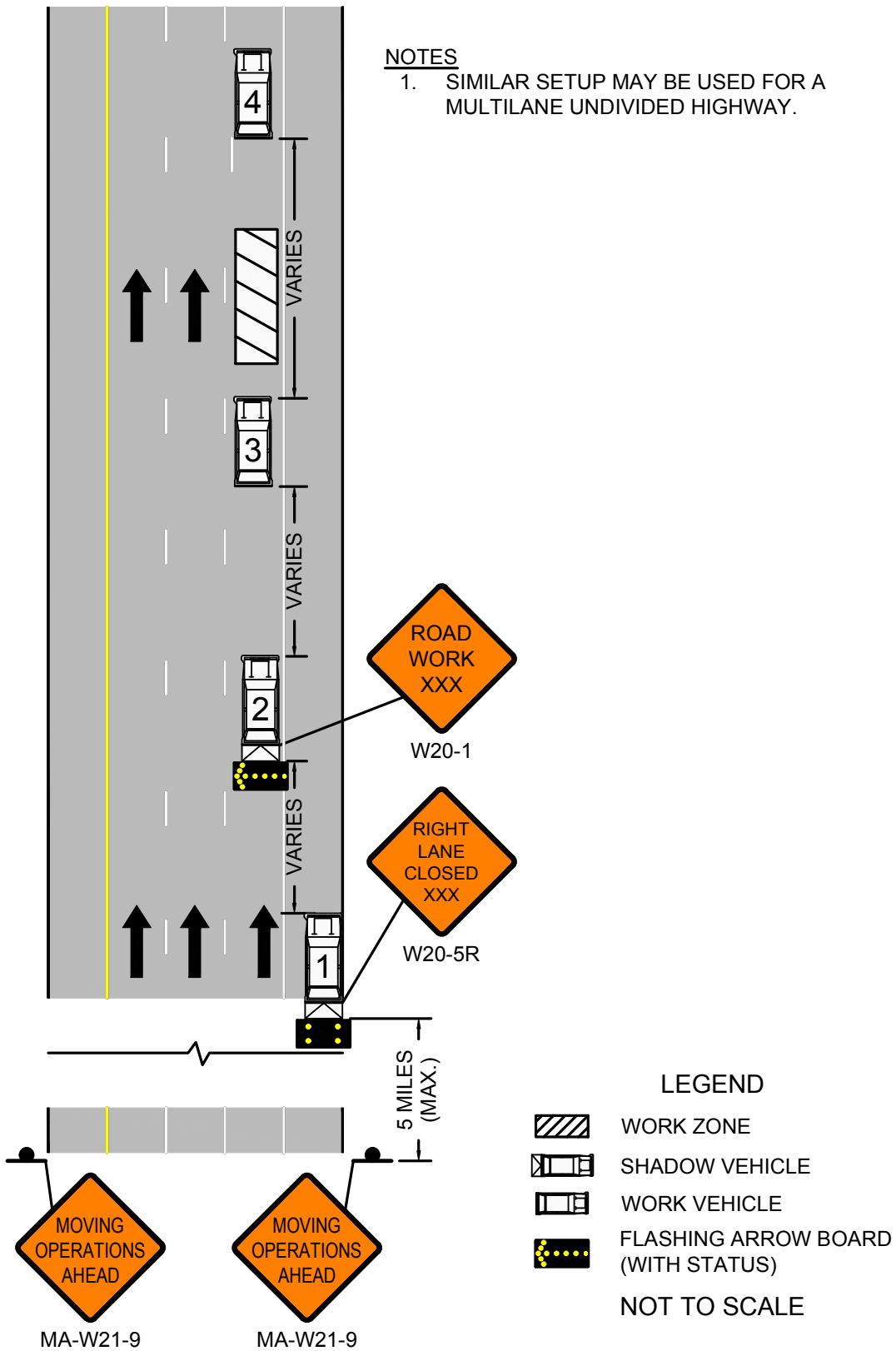
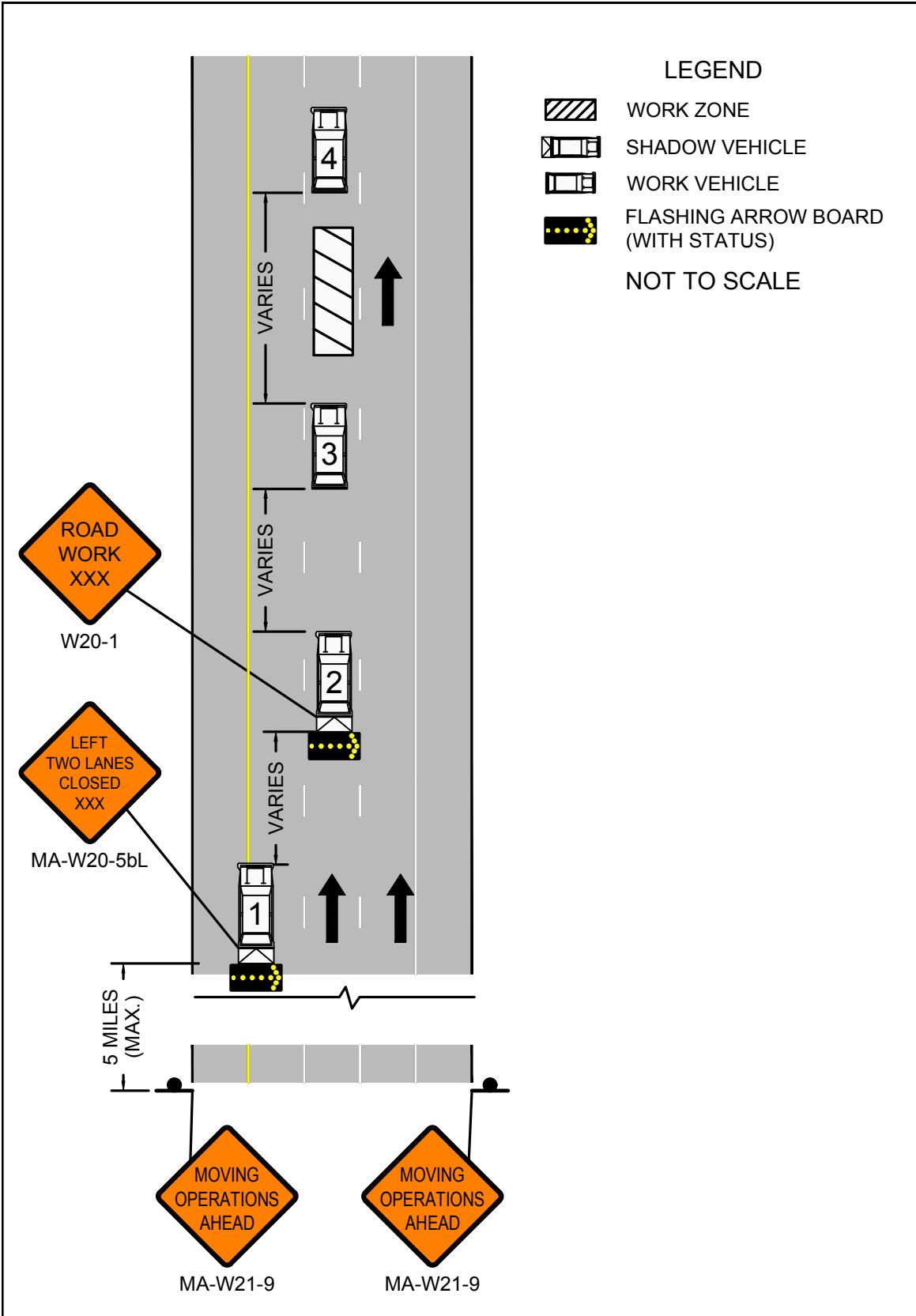
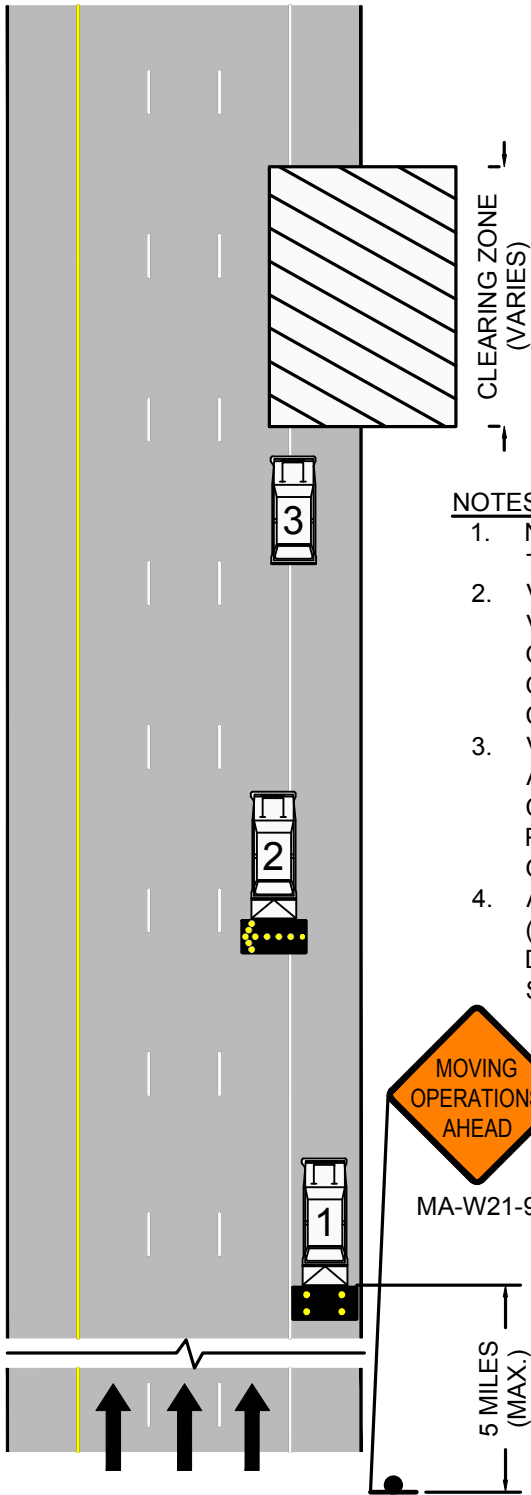




FIGURE 30  
MOBILE OPERATIONS  
MULTILANE DIVIDED ROADWAY  
RIGHT LANE











**NOTES**

1. NO OTHER NOTES ARE APPLICABLE TO THIS DETAIL.
2. VEHICLE #3 IS A SNOW/DEBRIS REMOVAL VEHICLE AND SHALL ALWAYS BE AWARE OF THE SURROUNDINGS. MORE THAN ONE VEHICLE MAY BE USED IN THE CLEARING ZONE.
3. VEHICLE #1 SHOULD BE EQUIPPED WITH A PCMS, A TMA, AND STAY IN VISUAL CONTACT WITH VEHICLE #3 WHILE PROVIDING AMPLE WARNING TO ONCOMING TRAFFIC.
4. A POLICE DETAIL WITH BLUE LIGHTS (OPTIONAL) SHALL REMAIN DOWNSTREAM OF VEHICLE #1 IN THE SHOULDER.

**LEGEND**

-  WORK ZONE
-  SHADOW VEHICLE
-  WORK VEHICLE
-  FLASHING ARROW BOARD (WITH STATUS)

NOT TO SCALE

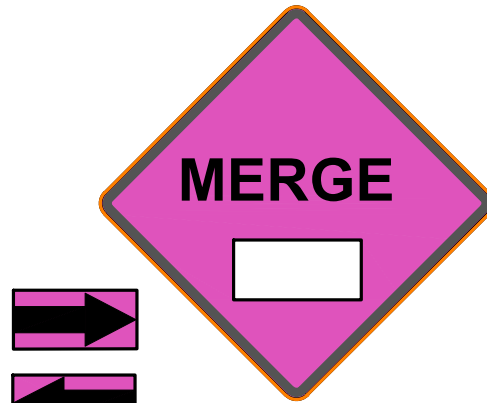
**Notes for Traffic Emergency or Incident Operations**

- The goal is to increase awareness of during traffic emergencies or incidents.
- These signs are to be used to differentiate from the traditional construction work zone and an emergency or incident.
- Upon arrival MassDOT First Responders shall assess the magnitude of the scene to determine if the incident is likely to last an hour or more in duration which would trigger the requirement to use these signs.
- Place the “Emergency Ahead” sign on the same side of the road as the incident, if possible, for up to an hour. Emergency response signs should be put up for all incidents and emergencies as soon as possible.
- Place the emergency sign 500 to 1000 feet before the first channelization devices.
- As an incident evolves this sign would be used as a secondary sign with all other emergency controls put in place.
- Only use “MERGE” signs where applicable (Not on 2 lane roads).
- Use MERGE signs on Multi-lane Roads to move traffic away from the incident and keep them in a safe lane.
- Place the MERGE sign about 500 feet before the closure.
- If additional signs are available, they should be placed accordingly as a sign informing people coming in the other direction or on the opposite side of the roadway.
- Use 12 emergency cones spaced 40 to 80 feet apart to form a taper and protect the scene.
- Sequential flashing lights/flares may be used in lieu of or to supplement cones.
- During a major incident that will last for a long duration, the EMERGENCY AHEAD sign should be moved back before an intersecting road or ramp to alert travelers and give them an option of using an alternate route. (Be sure all other devices are in place before moving this sign).

**Standard Emergency Signs (36"x36" or 48"x48")**



MA-W20-9






MA-W4-2aR/L



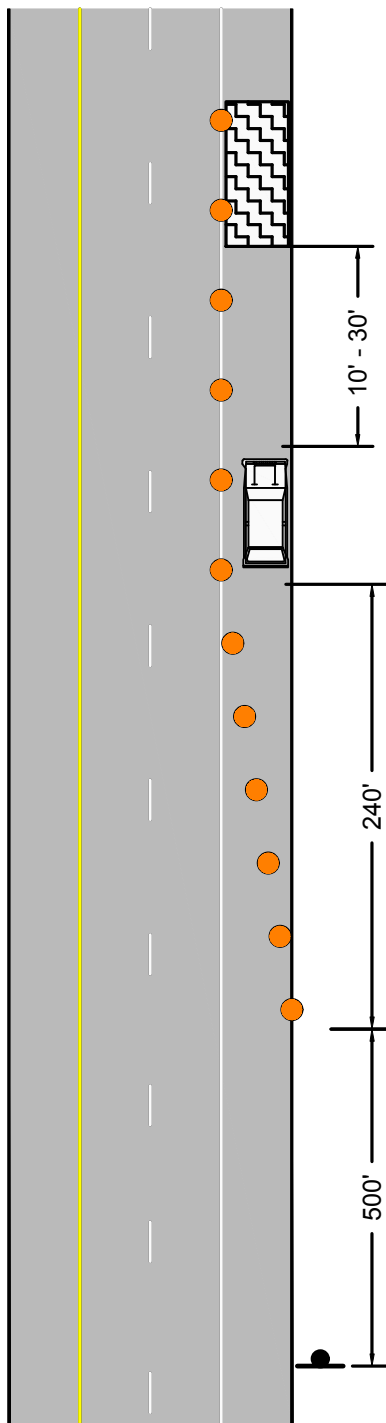


FIGURE 33  
EMERGENCY RESPONSE  
ANY ROADWAY  
SHOULDER ENCROACHMENT

LEGEND

-  EMERGENCY AREA
-  CHANNELIZATION DEVICE
-  EMERGENCY RESPONSE VEHICLE

NOT TO SCALE



ORDER OF RESPONSE ACTIVITIES

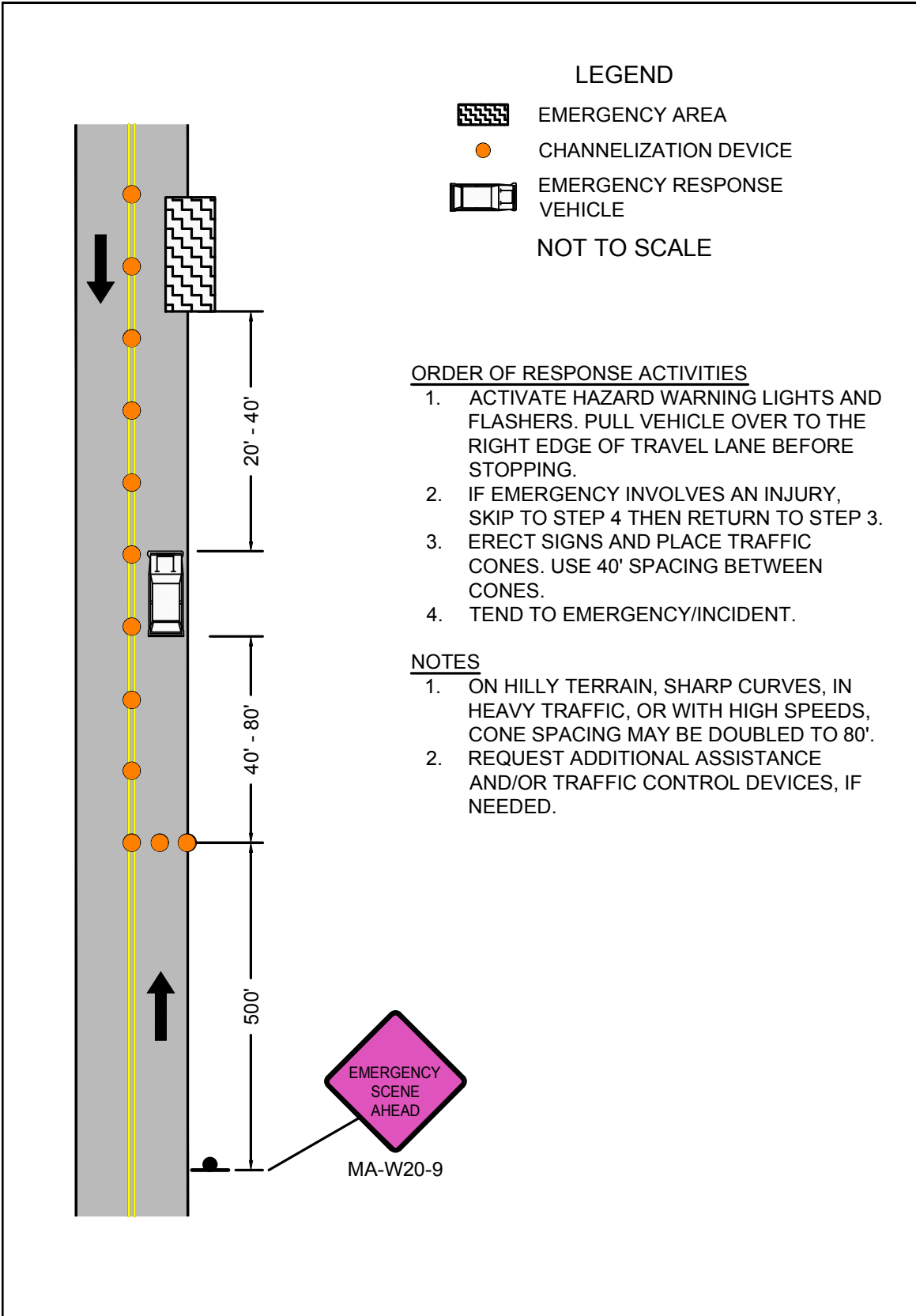
1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. PULL VEHICLE OVER TO THE RIGHT EDGE OF TRAVEL LANE BEFORE STOPPING.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 4 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. TEND TO EMERGENCY/INCIDENT.

NOTES

1. ON HILLY TERRAIN, SHARP CURVES, IN HEAVY TRAFFIC, OR WITH HIGH SPEEDS, CONE SPACING MAY BE DOUBLED TO 80'.
2. REQUEST ADDITIONAL ASSISTANCE AND/OR TRAFFIC CONTROL DEVICES, IF NEEDED.



MA-W20-9







 <p>Massachusetts Department of Transportation Highway Division</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p><b>FIGURE 34</b> EMERGENCY RESPONSE TWO LANE ROADWAY NO SHOULDER TRAVEL LANE ENCROACHMENT</p>
<p>PAGE 67</p>		

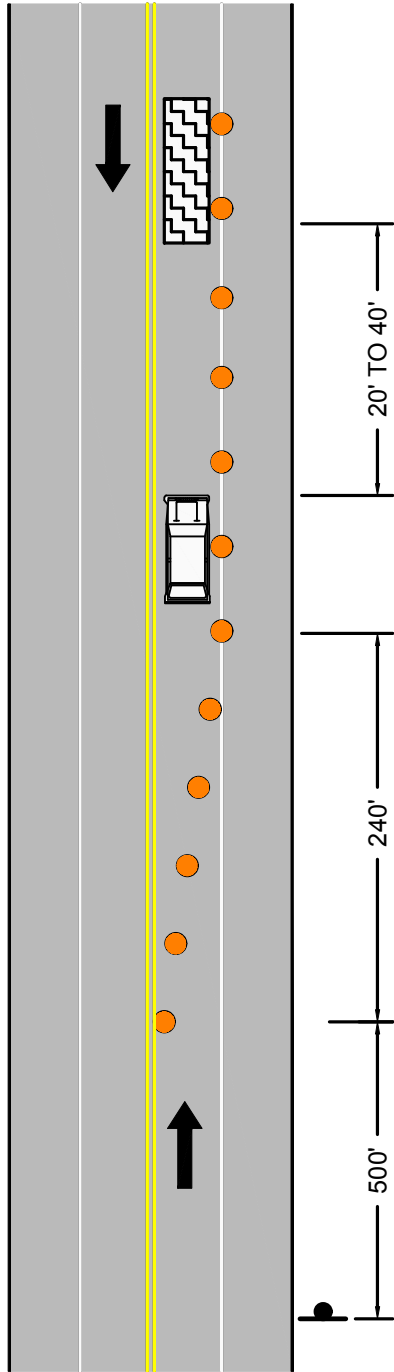


FIGURE 35  
EMERGENCY RESPONSE  
TWO LANE ROADWAY  
TRAVERSABLE SHOULDER  
SINGLE LANE ENCROACHMENT

LEGEND

-  EMERGENCY AREA
-  CHANNELIZATION DEVICE
-  EMERGENCY RESPONSE VEHICLE

NOT TO SCALE

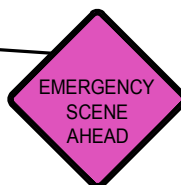


ORDER OF RESPONSE ACTIVITIES

1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. PULL VEHICLE OVER TO THE LEFT EDGE OF TRAVEL LANE BEFORE STOPPING.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 4 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. TEND TO EMERGENCY/INCIDENT.

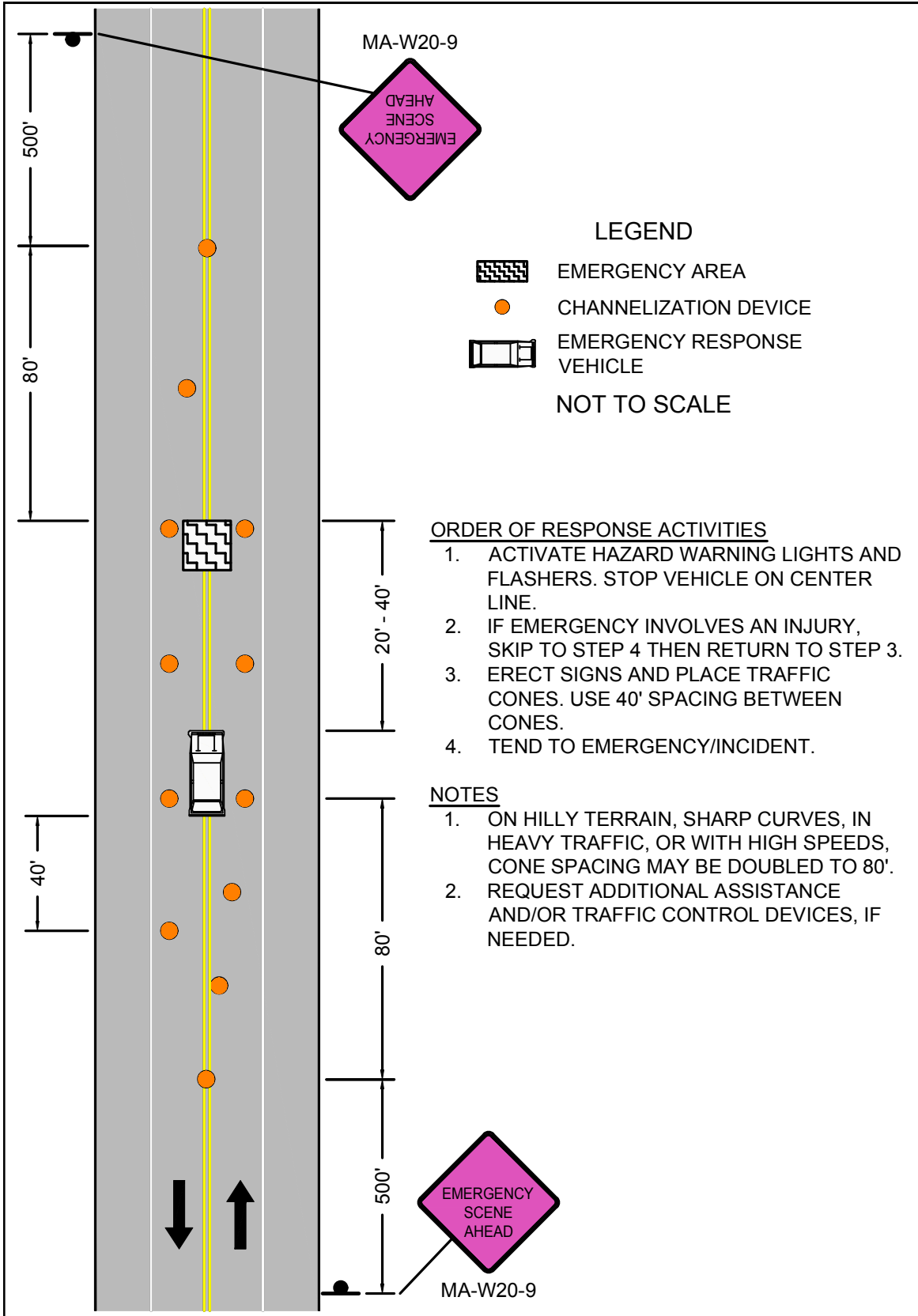
NOTES

1. ON HILLY TERRAIN, SHARP CURVES, IN HEAVY TRAFFIC, OR WITH HIGH SPEEDS, CONE SPACING MAY BE DOUBLED TO 80'.
2. REQUEST ADDITIONAL ASSISTANCE AND/OR TRAFFIC CONTROL DEVICES, IF NEEDED.



MA-W20-9






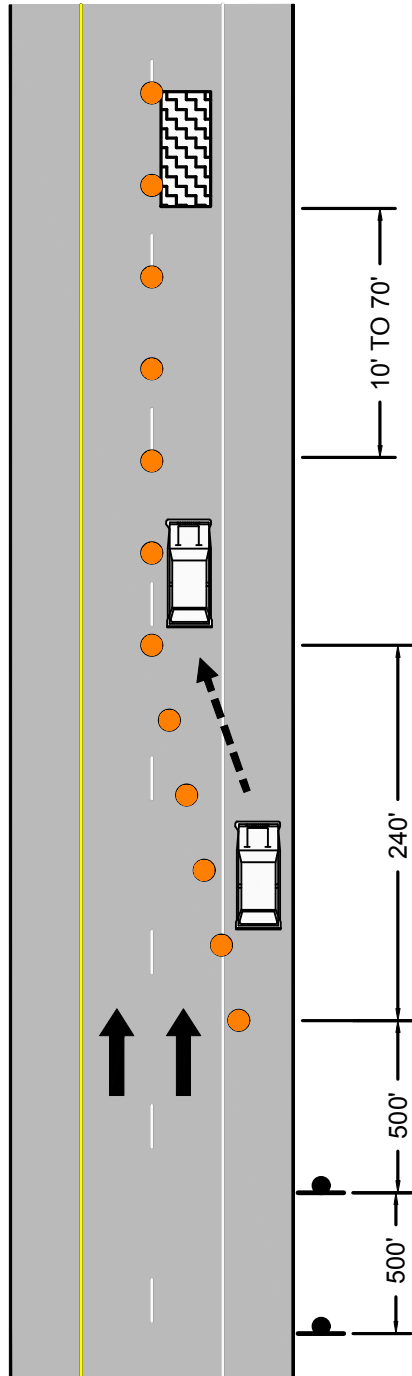




 <p>Massachusetts Department of Transportation Highway Division</p> <p>PAGE 69</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 36 EMERGENCY RESPONSE TWO LANE ROADWAY TRAVERSABLE SHOULDER CENTER OF ROADWAY</p>
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FIGURE 37  
EMERGENCY RESPONSE  
MULTILANE DIVIDED ROADWAY  
RIGHT LANE



LEGEND

-  EMERGENCY AREA
-  CHANNELIZATION DEVICE
-  EMERGENCY RESPONSE VEHICLE
-  RESPONSE VEHICLE MOVEMENT

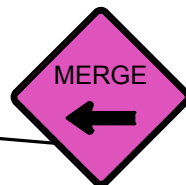
NOT TO SCALE

ORDER OF RESPONSE ACTIVITIES

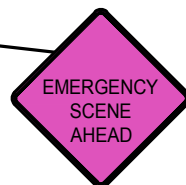
1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. STOP VEHICLE IN BREAKDOWN LANE.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 6 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. MOVE RESPONSE VEHICLE BEHIND EMERGENCY.
5. PLACE ADDITIONAL CONES.
6. TEND TO EMERGENCY.

NOTES

1. ON HILLY TERRAIN, SHARP CURVES, IN HEAVY TRAFFIC, OR WITH HIGH SPEEDS, CONE SPACING MAY BE DOUBLED TO 80'.
2. REQUEST ADDITIONAL ASSISTANCE AND/OR TRAFFIC CONTROL DEVICES, IF NEEDED.



MA-W4-2aL



MA-W20-9

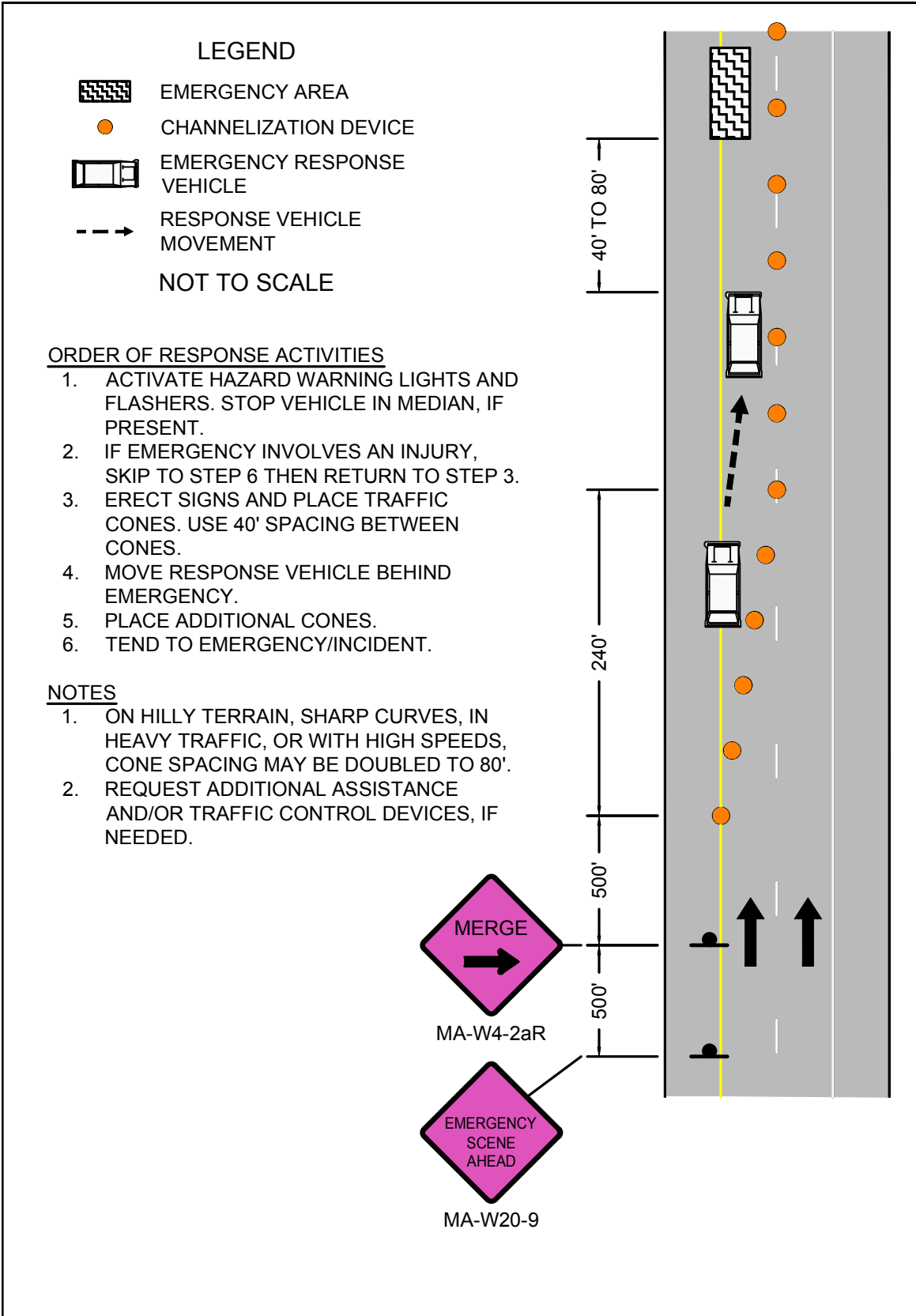
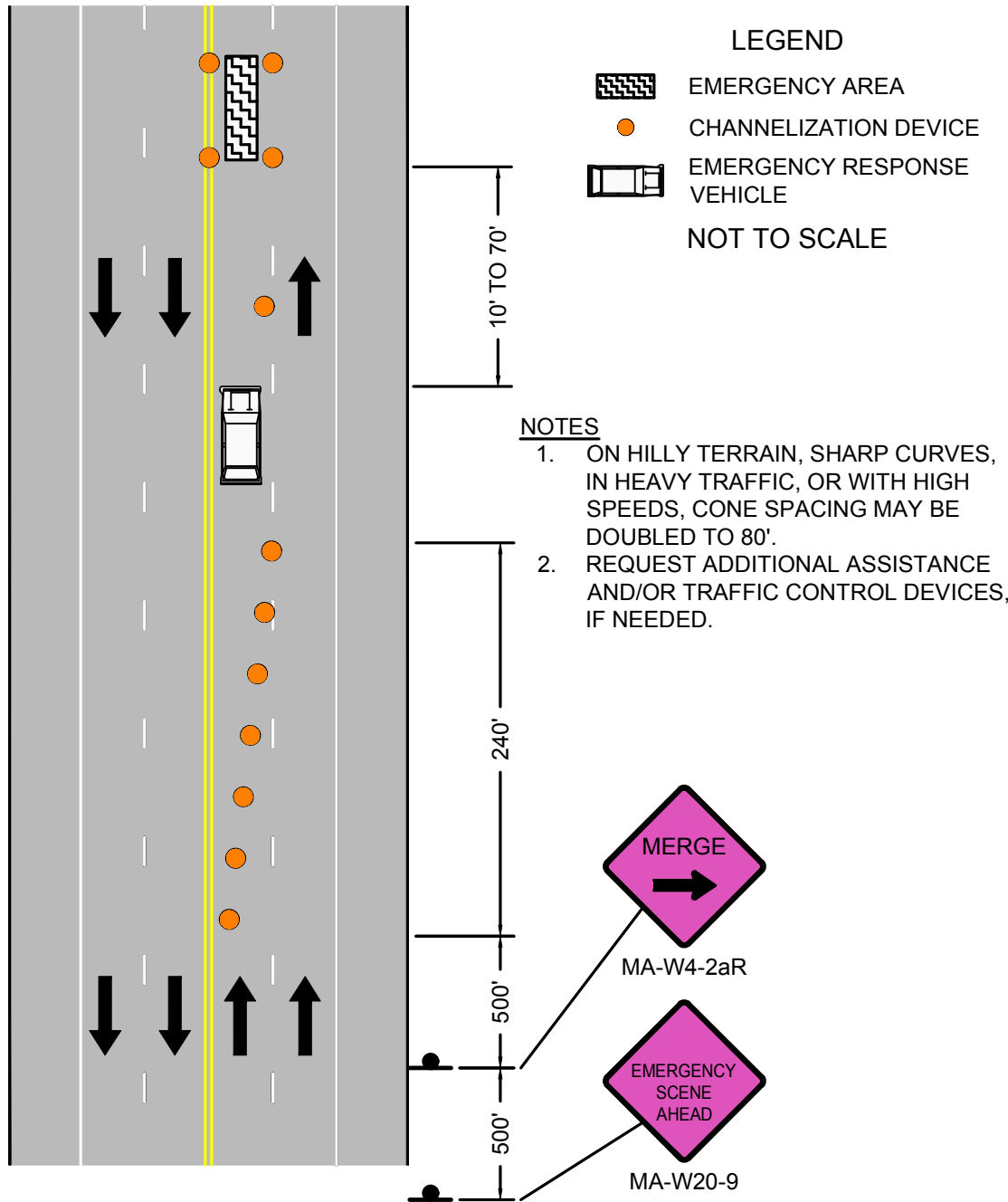


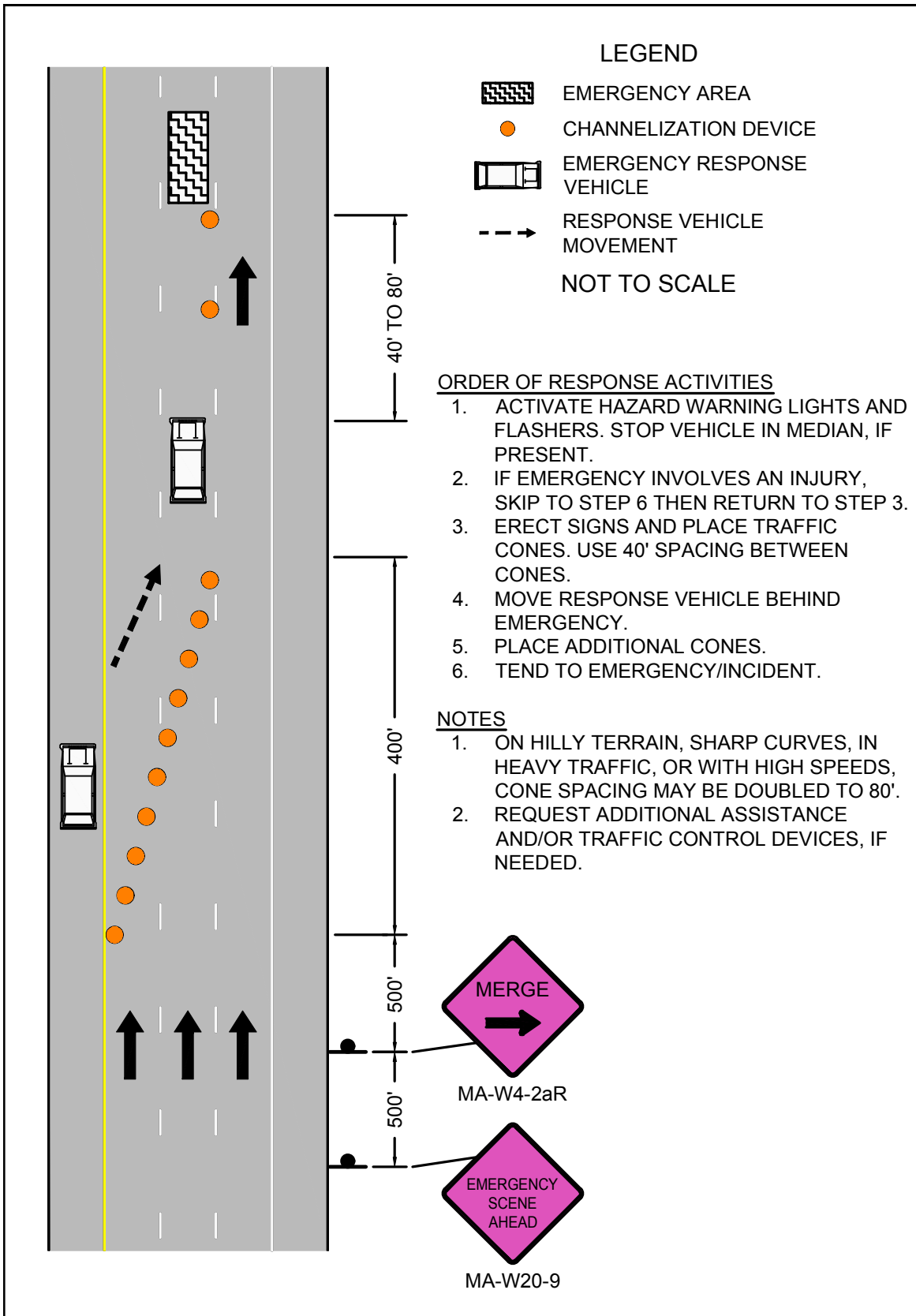


FIGURE 39  
EMERGENCY RESPONSE  
MULTILANE UNDIVIDED  
ROADWAY  
LEFT LANE



**ORDER OF RESPONSE ACTIVITIES**

1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. PULL VEHICLE OVER TO THE RIGHT EDGE OF BREAKDOWN LANE OR SHOULDER OR, IF NOT PRESENT, RIGHT EDGE OF TRAVEL LANE BEFORE STOPPING.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 4 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. TEND TO EMERGENCY/INCIDENT.




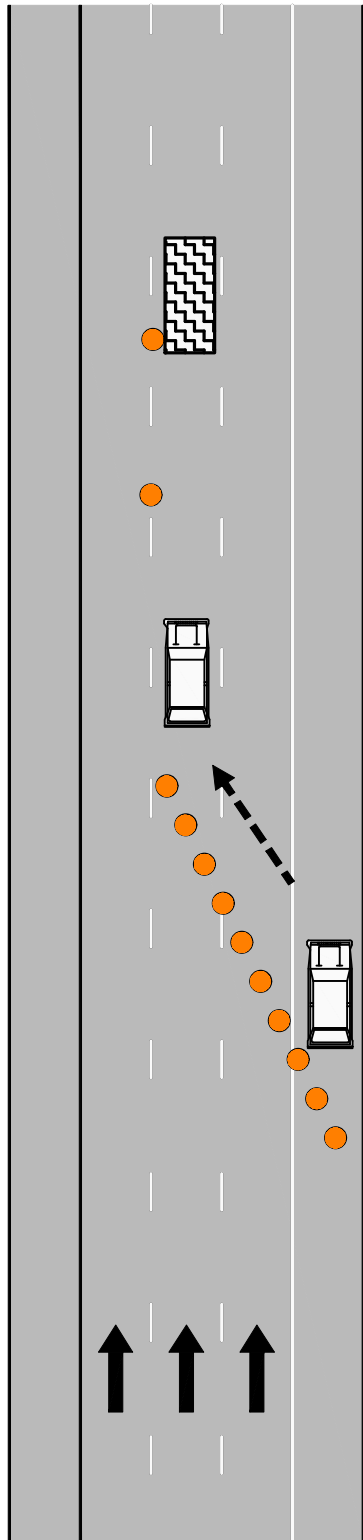




 MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION PAGE 73	Work Zone Safety Standard Details and Drawings	<b>FIGURE 40</b> EMERGENCY RESPONSE MULTILANE DIVIDED ROADWAY MIDDLE LANE APPROACH FROM LEFT
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FIGURE 41  
EMERGENCY RESPONSE  
MULTILANE DIVIDED ROADWAY  
MIDDLE LANE  
APPROACH FROM RIGHT



LEGEND

-  EMERGENCY AREA
-  CHANNELIZATION DEVICE
-  EMERGENCY RESPONSE VEHICLE
-  RESPONSE VEHICLE MOVEMENT

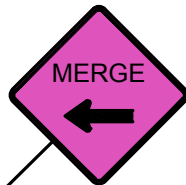
NOT TO SCALE

ORDER OF RESPONSE ACTIVITIES

1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. STOP VEHICLE IN BREAKDOWN LANE.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 6 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. MOVE RESPONSE VEHICLE BEHIND EMERGENCY.
5. PLACE ADDITIONAL CONES.
6. TEND TO EMERGENCY.

NOTES

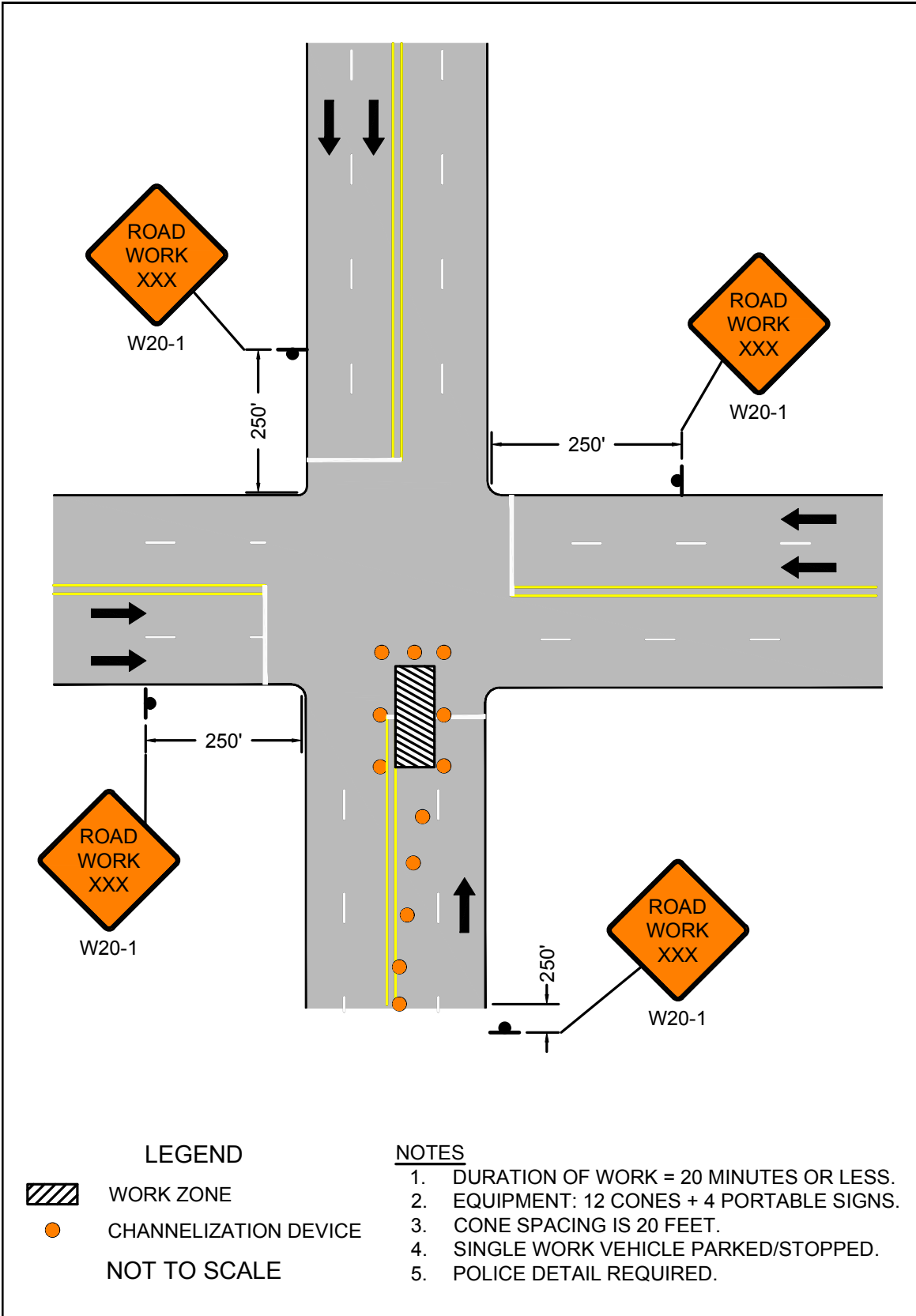
1. ON HILLY TERRAIN, SHARP CURVES, IN HEAVY TRAFFIC, OR WITH HIGH SPEEDS, CONE SPACING MAY BE DOUBLED TO 80'.
2. REQUEST ADDITIONAL ASSISTANCE AND/OR TRAFFIC CONTROL DEVICES, IF NEEDED.



MA-W4-2aL



MA-W20-9

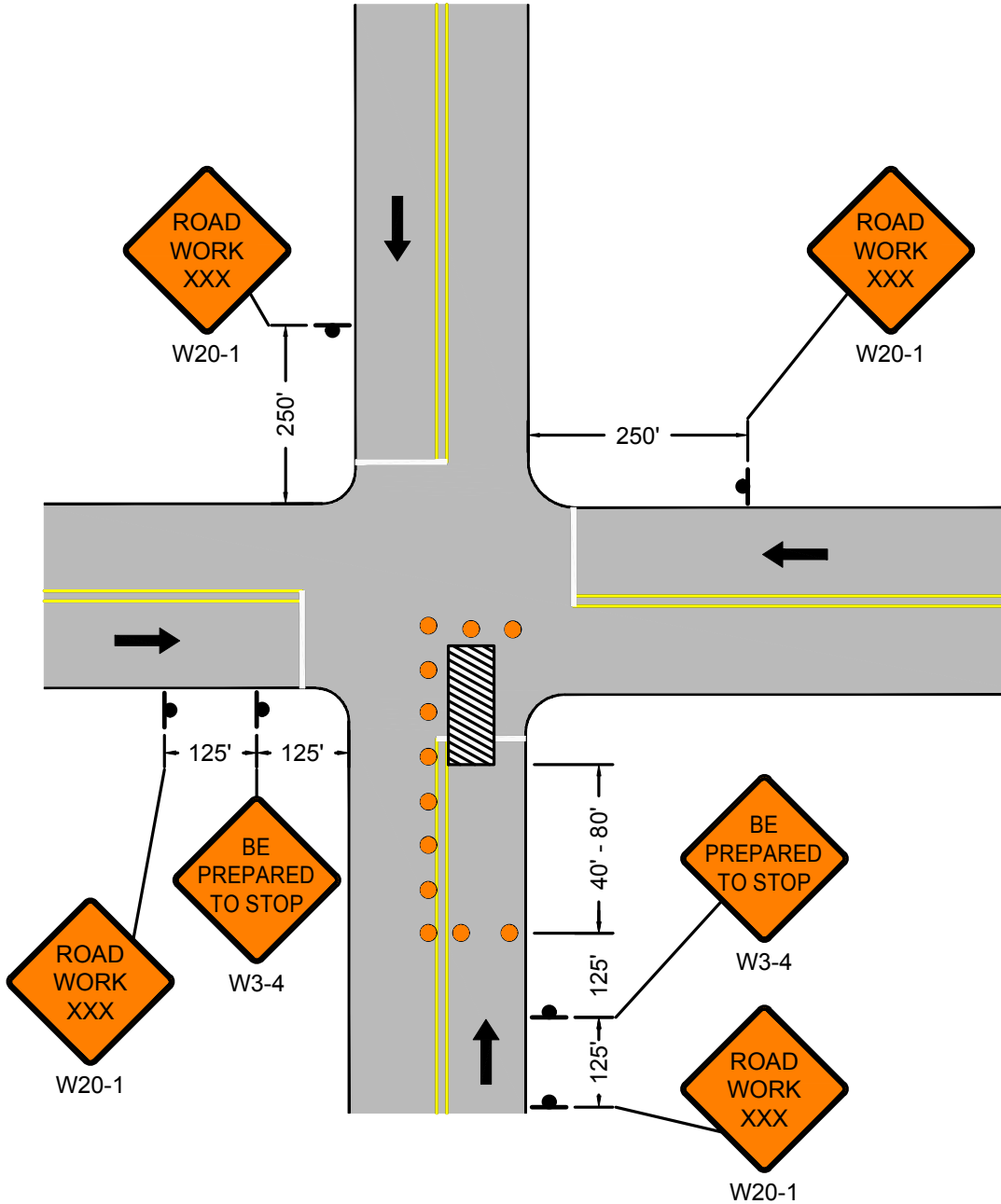






PAGE 76

Work Zone Safety  
Standard Details  
and Drawings

FIGURE 43  
TRAFFIC SIGNAL REPAIR WORK  
TWO LANE UNDIVIDED ROADWAY  
ONE LEG OF INTERSECTION



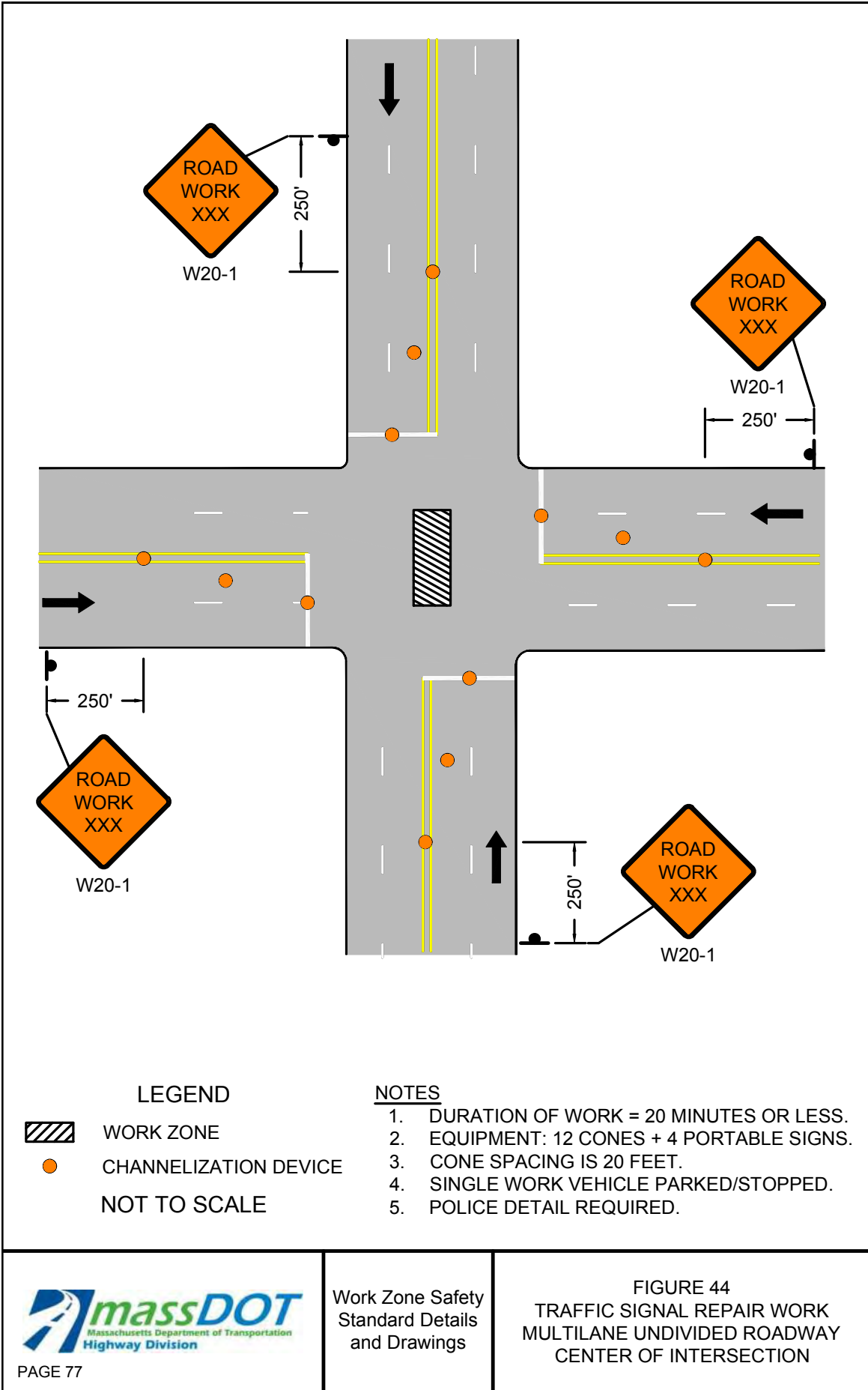
**LEGEND**

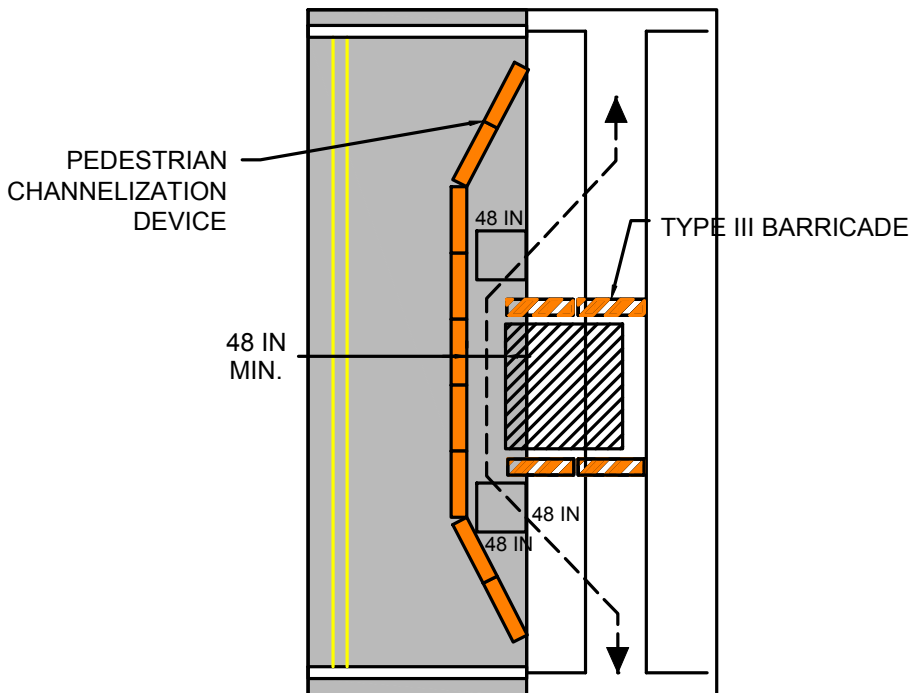
-  WORK ZONE
  -  CHANNELIZATION DEVICE
- NOT TO SCALE

**NOTES**

1. DURATION OF WORK = 20 MINUTES OR LESS.
2. EQUIPMENT: 12 CONES + 6 PORTABLE SIGNS.
3. CONE SPACING IS 20 FEET.
4. SINGLE WORK VEHICLE PARKED/STOPPED.
5. POLICE DETAIL REQUIRED.

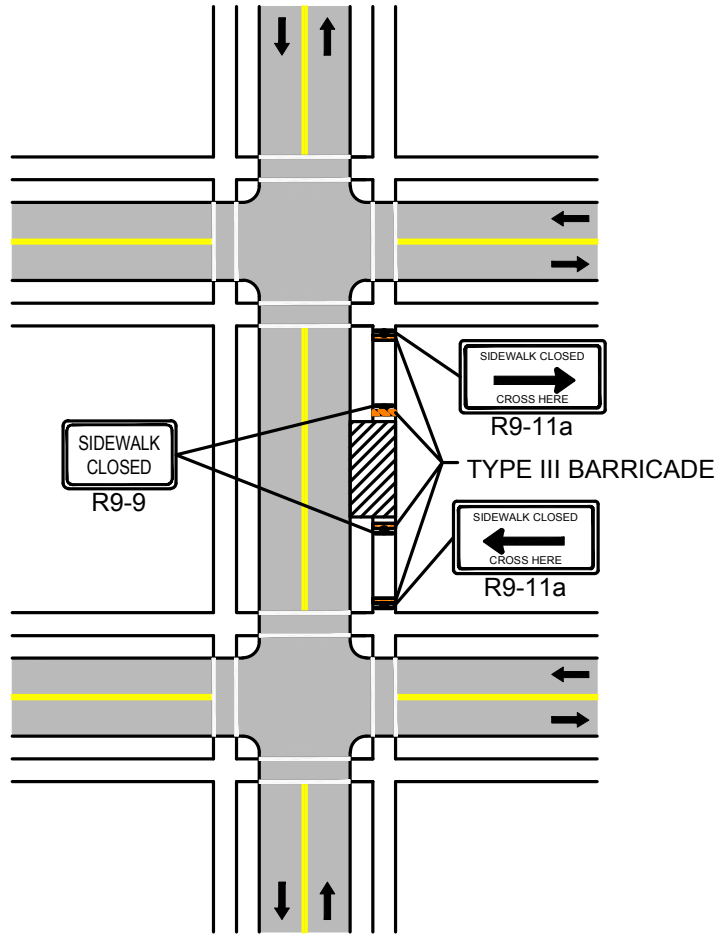






**NOTES:**

1. WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
2. A PEDESTRIAN CHANNELIZATION DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ALONG THE FULL LENGTH OF THE TEMPORARY PEDESTRIAN ROUTE.
3. WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT.
4. THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
5. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE SIDEWALK EXCEEDS 200 FEET THEN A 5 FOOT BY 5 FOOT PASSING ZONE SHALL BE PROVIDED NEAR THE MID-POINT OF THE CLOSURE.
6. THE PROTECTIVE REQUIREMENTS OF A TTC WORK ZONE MAY HAVE AN IMPACT IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN PROVIDING PEDESTRIAN DELINEATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
7. ON-DEMAND PEDESTRIAN ASSISTANCE PERSONNEL TO ASSIST WITH NAVIGATION AROUND THE CLOSURE/WORK AREA MAY BE CONSIDERED AS AN OPTION IN PLACE OF PROVIDING ADA/AAB DEVICES FOR WORK FOR CLOSURES LASTING 4 HOURS OR LESS.
8. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN; VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DETERMINED BY THE ENGINEER.



**NOTES:**

1. CLOSURE OF A SIDEWALK FACILITY SHALL CONSTITUTE THE PROVISION FOR MANAGING PEDESTRIAN TRAFFIC AND ACCOMMODATING ALL USERS. IF THE EXISTING PEDESTRIAN ACCESS ROUTE(S) CAN BE TEMPORARILY RELOCATED ALONG THE EXISTING SIDEWALK , AND SAID FACILITY PROVIDES A MINIMUM WIDTH OF 48-INCHES OF SOLID, SMOOTH UNOBSTRUCTED SURFACE, THEN NO DETOURING OF THE ROUTE SHALL BE REQUIRED. DELINEATION OF THE WORK AREA IS STILL REQUIRED.
2. IF IT IS NECESSARY TO DIVERT PEDESTRIAN TRAFFIC TO AN ALTERNATE ROUTE ACROSS THE ROADWAY FROM THE EXISTING FACILITY, THE FIGURE ABOVE SHALL BE FOLLOWED TO PROVIDE ADEQUATE DIRECTION TO PEDESTRIANS. ALTERNATE ROUTE SHALL PROVIDE THE SAME LEVEL OF ACCOMMODATION AS THE FACILITY THAT IS BEING DETOURED AND RETAIN ADA COMPLIANCE IN ITS ENTIRETY.
3. FOR EMERGENCY OR SHORT-DURATION SIDEWALK CLOSURES OF 4-HOURS OR LESS, IT IS OPTIONAL TO HAVE ON-DEMAND PEDESTRIAN ASSISTANCE PERSONNEL AVAILABLE AT ALL TIMES DURING THE CLOSURE TO ASSIST THOSE MOBILITY CHALLENGED PERSONS WHO REQUIRE ADDITIONAL ASSISTANCE TO SAFELY NAVIGATE AROUND THE WORK AREA IN LIEU OF A FULL DETOUR.





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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
BIKE LANE CLOSURE










POSTED SPEED LIMIT (MPH)	SPACING FOR BIKE ADVANCE WARNING SIGNS (FT) (A,B))	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRANSITION LENGTH (L/3)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	150 / 150	100	305	20	45
45-55	150 / 150	220	495	40	35
60-65	150 / 150	260	645	40	40

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

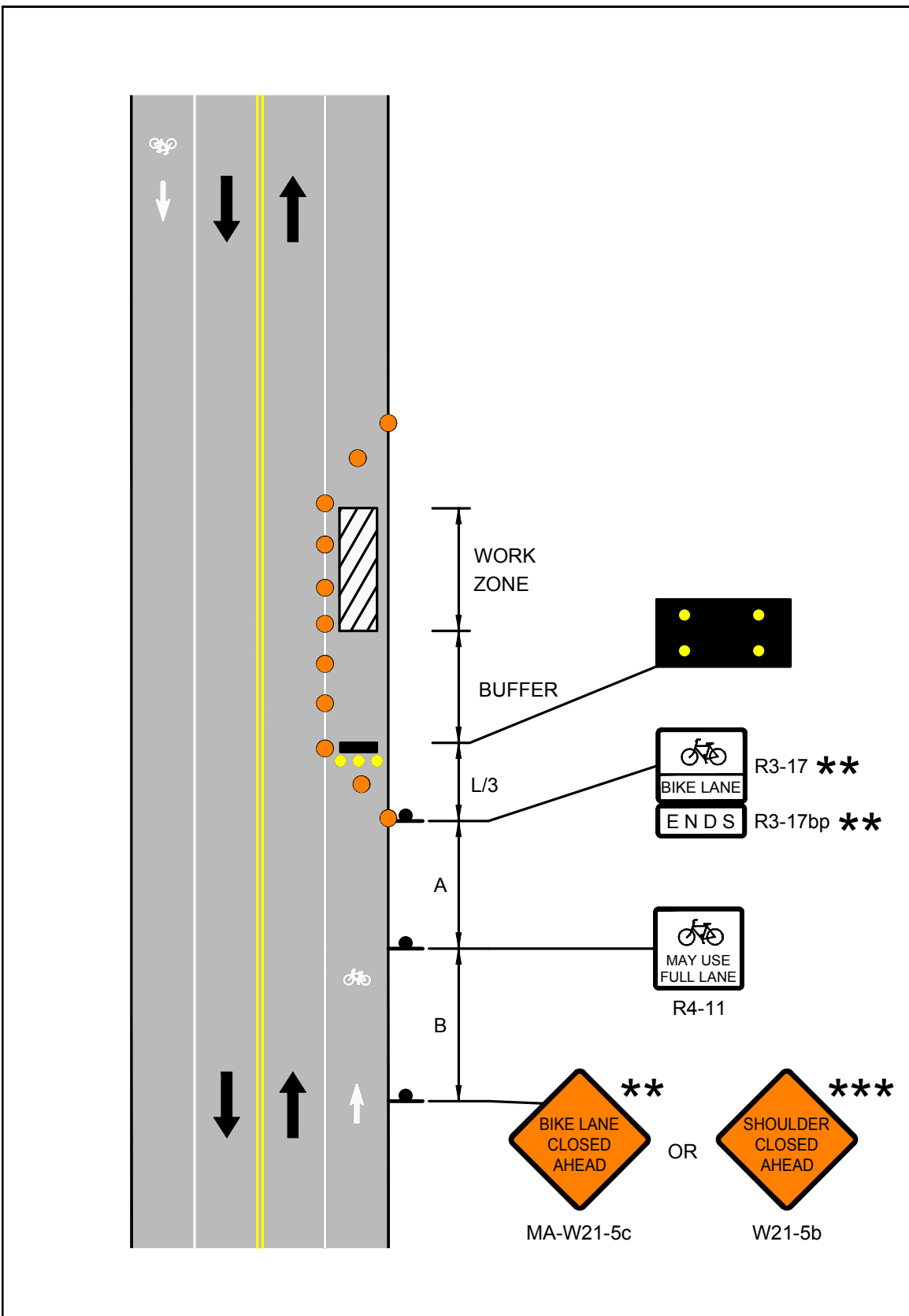
**NOTES**


1. DETAIL SHALL BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS. SIGNING SHOWN ONLY FOR BIKE TRAFFIC. FOLLOW ALL OTHER RELEVANT DETAILS FOR TTC DEVICES FOR VEHICULAR TRAFFIC.
2. **\*\*** SIGN SHALL BE USED ONLY IF THERE IS A MARKED BIKE LANE.
3. **\*\*\*** SIGN SHALL BE USED ONLY IF THERE IS NO MARKED BIKE LANE.

**LEGEND**

-  WORK ZONE
-  CHANNELIZATION DEVICE
-  FLASHING ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  TRUCK MOUNTED ATTENUATOR
-  RADAR SPEED FEEDBACK BOARD
-  POLICE DETAIL OR UNIFORMED FLAGGER
-  TEMPORARY PORTABLE RUMBLE STRIP
-  TYPE III BARRICADE

NOT TO SCALE



 <p>Massachusetts Department of Transportation Highway Division</p> <p>PAGE 81</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>FIGURE 48 STATIONARY OPERATIONS BIKE LANE CLOSURE</p>
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**Safety is everyone's business**

Rev. June, 2017

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)

Contract Number: 125779 Project File Number: 609179

City/Town: Spencer

Project Description: Bridge Replacement, S-23-012, North Spencer Road (Route 31)  
over the Seven Mile 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](mailto:DOTHighwayDesign@dot.state.ma.us)

Attn: AutoCAD Files

Name of person requesting AutoCAD files: \_\_\_\_\_

Affiliation/Company: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone number: \_\_\_\_\_

Email address: \_\_\_\_\_

Signature/Date: \_\_\_\_\_

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DOCUMENT A00830

# **ARMY CORPS OF ENGINEERS**

## **Permit Application**

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November 14, 2023

Dan Vasconcelos  
Regulatory Division  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742

RE: Pre-Construction Notification Application  
North Spencer Road (Route 31) over the Seven Mile River (Bridge No. S-23-012)  
Spencer, MA  
MassDOT Project 609179

Dear Mr. Vasconcelos,

The Massachusetts Department of Transportation, Highway Division (MassDOT) is submitting this application for Pre-Construction Notification Application for the proposed replacement of the bridge on North Spencer Road (Route 31) over the Seven Mile River in Spencer, MA under the MassDOT bridge exemption.

The project requires a 401 WQC and authorization under Section 404 as it will temporarily disturb an estimated 1,043 Square Feet (sf) of Waters of the US and permanently disturb an estimated 374 Square Feet of Waters of the US associated with the Seven Mile River. There will be no temporary or permanent impacts to Bordering Vegetated Wetlands (BVW).

If you require any additional information regarding the project, please contact me at (857) 262-0757 or by email at [courtney.l.walker@dot.state.ma.us](mailto:courtney.l.walker@dot.state.ma.us).

Sincerely,



Courtney Walker  
Wetlands & Water Resources Coordinator  
MassDOT Highway Division, Environmental Services

Cc: Stephen Soma, MassDOT  
Heidi Davis, MassDEP  
Tyler Lewis, MassDEP  
Ryan Hale, MassDEP  
Lauren Vivier, Spencer Conservation Commission

**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 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.

**Disclosure**

**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](mailto: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 First - Middle - Last - Company - E-mail Address -				8. AUTHORIZED AGENT'S NAME AND TITLE ( <i>agent is not required</i> ) First - Middle - Last - Company - E-mail Address -			
6. APPLICANT'S ADDRESS: Address- City - State - Zip - Country -				9. AGENT'S ADDRESS: Address- City - State - Zip - Country -			
7. APPLICANT'S PHONE NOs. with AREA CODE a. Residence    b. Business    c. Fax    d. Mobile				10. AGENT'S PHONE NOs. with AREA CODE 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.

*Courtney Walker*

11/14/23

SIGNATURE OF APPLICANT

DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

12. PROJECT NAME or TITLE ( <i>see instructions</i> )			
13. NAME OF WATERBODY, IF KNOWN ( <i>if applicable</i> )		14. PROPOSED ACTIVITY STREET ADDRESS ( <i>if applicable</i> )	
15. LOCATION OF PROPOSED ACTIVITY ( <i>see instructions</i> ) Latitude:                      °N                      Longitude:                      °W		City:    State:    Zip:	

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

11/14/23  
 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.

DOCUMENT A00831

**ARMY CORPS OF ENGINEERS**

**GENERAL PERMIT**

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**DEPARTMENT OF THE ARMY**  
**US ARMY CORPS OF ENGINEERS**  
**NEW ENGLAND DISTRICT**  
**696 VIRGINIA ROAD**  
**CONCORD MA 01742-2751**

March 18, 2024

Regulatory Division  
File Number: NAE-2023-02553

Courtney Walker  
MassDOT – Highway Division  
10 Park Plaza, Room 7360  
Boston, Massachusetts 02116  
Sent by email: [courtney.l.walker@dot.state.ma.us](mailto:courtney.l.walker@dot.state.ma.us)

Dear Ms. Walker:

The U.S. Army Corps of Engineers (USACE) has reviewed your application to permanently discharge fill material within 374 square feet below the Ordinary High Water (OHW) mark of the Sevenmile River, associated with the replacement of the bridge conveying North Spencer Road (Route 31) over the Sevenmile River in Spencer, Massachusetts. The existing single-span bridge will be replaced by a new single-span bridge in the same location. New abutments will be constructed landward of the existing abutments, and the existing abutments will be removed. Rip-rap scour protection over-topped with 12-inches of stockpiled natural streambed material will be placed in front of the new abutments. The project will also have temporary impacts within 1,043 square feet below OHW due to the installation of cofferdams and dewatering. The work is shown on the enclosed plans titled "SPENCER ST 31 (NORTH SPENCER ROAD)," on 14 sheets, and dated "2/9/2024." This letter follows a provisional notification letter from this office, dated February 13, 2024.

Based on the information that you have provided, we verify that the activity is authorized under General Permit # 23 of the June 2, 2023, federal permit known as the Massachusetts General Permits (GPs). The GPs are available at <https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit>.

Please review the GPs carefully, in particular the general conditions beginning on page 35, and ensure that you and all personnel performing work authorized by the GPs are fully aware of and comply with its terms and conditions. A copy of the GPs and this verification letter shall be available at the work site as required by General Condition 17. You must perform this work in compliance with the following special conditions:

1. You must complete and return the enclosed Work Start Notification Form to this office at least two weeks before the anticipated start date. You must also complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work.

-2-

2. A conditioned Water Quality Certification (WQC) has been issued by the Massachusetts Department of Environmental Protection for your project and is attached. You must comply with the conditions specified in the WQC.

This authorization expires on June 1, 2028. You must commence or have under contract to commence the work authorized herein by June 1, 2028, and complete the work by June 1, 2029. If not, you must contact this office to determine the need for further authorization and we recommend you contact us *before* the work authorized herein expires. Please contact us immediately if you change the plans or construction methods for work within our jurisdiction as we must approve any changes before you undertake them. Performing work within our jurisdiction that is not specifically authorized by this determination or failing to comply with the special condition(s) provided above or all the terms and conditions of the GPs may subject you to the enforcement provisions of our regulations.

This authorization does not obviate the need to obtain other federal, state, or local authorizations required by law. Applicants are responsible for applying for and obtaining any other approvals.

We continually strive to improve our customer service. To better serve you, we would appreciate your completing our Customer Service Survey located at <https://regulatory.ops.usace.army.mil/customer-service-survey>.

Please contact Dan Vasconcelos, of my staff, at (978) 318-8653 or [daniel.b.vasconcelos@usace.army.mil](mailto:daniel.b.vasconcelos@usace.army.mil) if you have any questions.

Sincerely,



Stephen Rochette  
Chief, Technical Support Branch  
Regulatory Division

Enclosures

cc:

Ed Reiner, U.S. EPA, Region 1, Boston, MA; [reiner.ed@epa.gov](mailto:reiner.ed@epa.gov)  
Rachel Croy, U.S. EPA, Region 1, Boston, MA; [croy.rachel@epa.gov](mailto:croy.rachel@epa.gov)  
David Simmons, USFWS, New England Field Office, Concord, NH;  
[david\\_simmons@fws.gov](mailto:david_simmons@fws.gov)

cont. next page

-3-

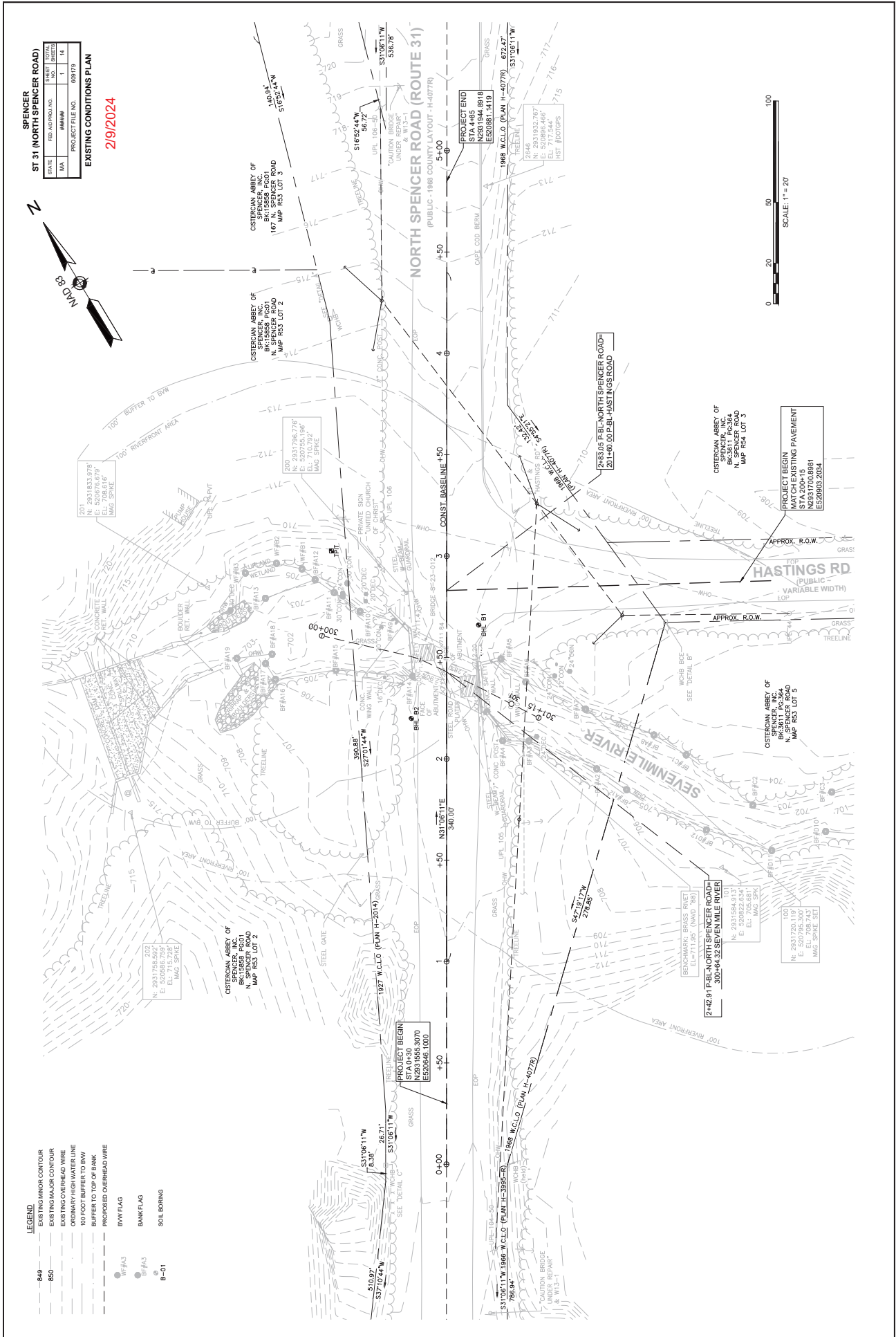
cc (cont.):

Heidi Davis, MassDEP, Boston, MA; [heidi.davis@mass.gov](mailto:heidi.davis@mass.gov)

Ryan Hale, MassDEP, Boston, MA; [ryan.hale@mass.gov](mailto:ryan.hale@mass.gov)

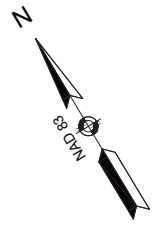
David Robinson, MA Board of Underwater Archaeological Resources (BUAR);  
[david.s.robinson@mass.gov](mailto:david.s.robinson@mass.gov)

Conservation Commission, Spencer, MA; [lvivier@spencerma.gov](mailto:lvivier@spencerma.gov)

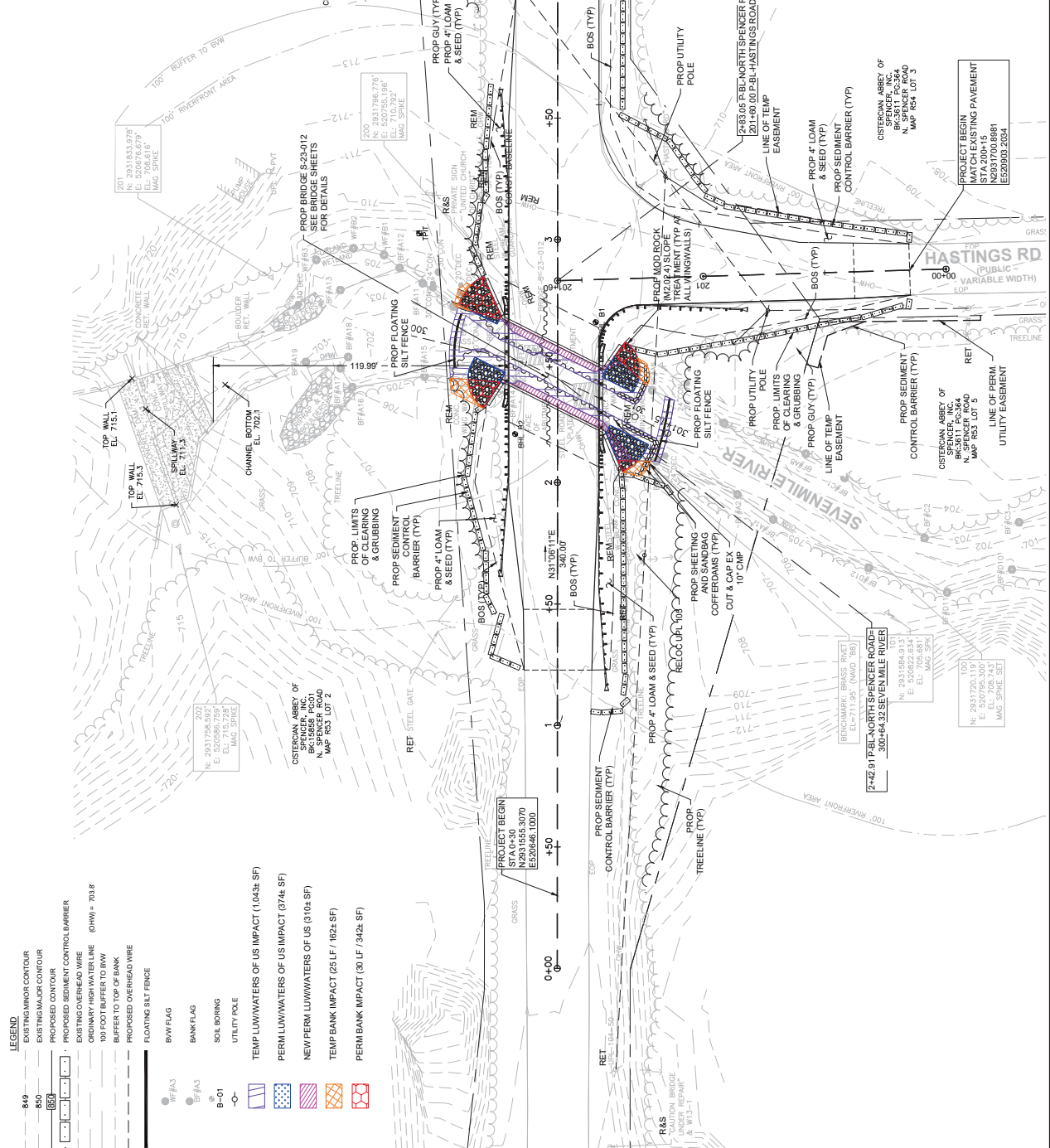


**ST 31 (NORTH SPENCER ROAD)  
ENVIRONMENTAL PLAN**

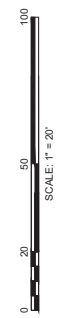
STATE	720	SUPERNOV. NO.		SHEET	TOTAL
MAP	703	PROJECT FILE NO.	609179	2	14

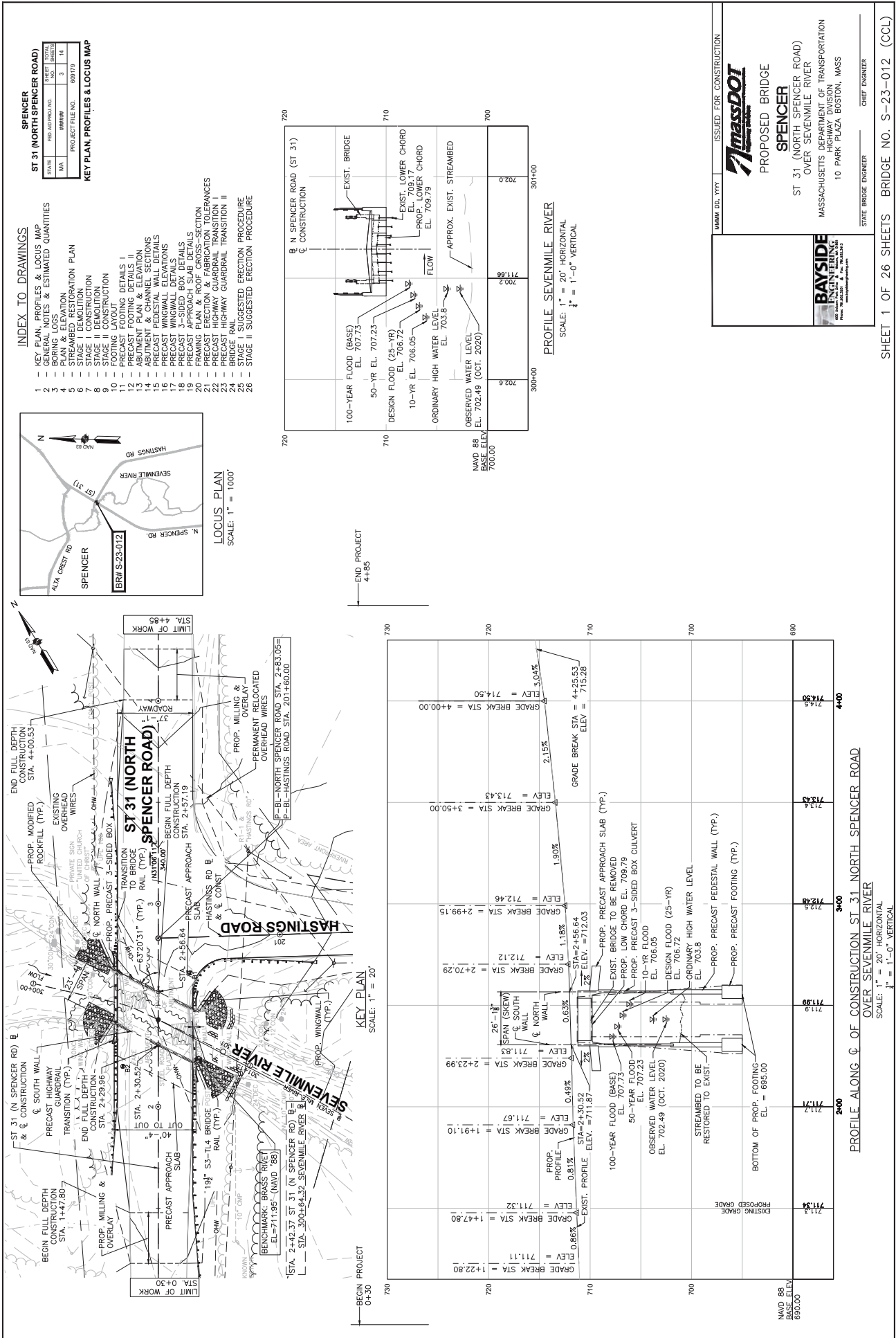


- LEGEND**
- 64.0 - EXISTING MAJOR CONTOUR
  - 65.0 - EXISTING MAJOR CONTOUR
  - 66.0 - EXISTING MAJOR CONTOUR
  - - - - - PROPOSED CONTOUR
  - --- PROPOSED SEDIMENT CONTROL BARRIER
  - --- EXISTING OVERHEAD WIRE
  - --- 90 FOOT BUFFER TO RW
  - --- BUFFER TO TOP OF BANK
  - --- PROPOSED OVERHEAD WIRE
  - --- FLOATING SILT FENCE
  - W1/A3
  - W1/A3
  - B-01
  - - ○ UTILITY POLE
  - TEMP LUW/WATERS OF US IMPACT (1,043z SF)
  - PERM LUW/WATERS OF US IMPACT (874z SF)
  - NEW PERM LUW/WATERS OF US (810z SF)
  - TEMP BANK IMPACT (25 LF / 162z SF)
  - PERM BANK IMPACT (30 LF / 342z SF)



- GENERAL NOTES:**
- CONTOURS REFLECT EXISTING CONDITIONS EXCEPT WHERE PROPOSED CONTOURS ARE SHOWN ADJACENT TO THE PROPOSED WINGWALLS. SEE CROSS SECTIONS FOR FINAL GRADES.
  - NO GRUBBING OF TREES OR SHRUBS WILL OCCUR WITHIN EXISTING WETLAND AREA.





**MassDOT**  
ISSUED FOR CONSTRUCTION

**SPENCER**  
PROPOSED BRIDGE

ST 31 (NORTH SPENCER ROAD)  
OVER SEVENMILE RIVER

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
10 PARK PLAZA BOSTON, MASS

STATE BRIDGE ENGINEER \_\_\_\_\_ CHIEF ENGINEER

**BAYSIDE ENGINEERING**  
100 WASHINGTON ST., SUITE 200  
BOSTON, MA 02108  
TEL: 617-552-1234

**GENERAL NOTES:**

DESIGN IN ACCORDANCE WITH THE 2020 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRD BRIDGE DESIGN SPECIFICATIONS FOR HL-95 LOADING. EXISTING BRIDGE PLANS FOR THE EXISTING BRIDGE DATED OCTOBER 1938, MAYBE SEEN AT THE MASSDOT OFFICE, 800 STATE STREET, BOSTON, MASSACHUSETTS. HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT BENCH MARK: VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT AND ELEVATIONS ARE BASED ON A BRASS RIVET WITH AN ELEVATION OF 711.95 LOCATED AT TOP OF THE SOUTHEAST WINGWALL.

DATE: TO BE PLACED ON THE INSIDE FACE OF THE SOUTHWESTERY AND NORTHWESTERY HIGHWAY GUARDRAIL TRANSITIONS. A SHEET SHOWING THE SIZE AND CHARACTER OF THE NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF THE CONTRACT COMPLETION AS OF THE DATE THE FIRST HIGHWAY GUARDRAIL TRANSITION WAS CONSTRUCTED. BOTH HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTES: REFER TO THE PREPARATION OF CONSTRUCTION DRAWINGS AND A COPY OF THE FILES MAY BE OBTAINED FROM MASSDOT.

SCALES: ALL DIMENSIONS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZED PRINTS (A3).

FOUNDATIONS: FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSATURABLE MATERIAL: UNSATURABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

**CONCRETE:**

ALL CONCRETE SHALL BE 4000 PSI HP CEMENT CONCRETE, EXCEPT AS NOTED BELOW: PRECAST CONCRETE SHALL BE 4000 PSI HP CEMENT CONCRETE. PRECAST APPROACH SLAB SHALL BE PRECAST CONCRETE, 3-SIDED EXCEPT THE PRECAST APPROACH SLAB SHELF HP CEMENT.

REINFORCEMENT: STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M. 31 GRADE 60, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS. ALL BARS SHALL BE LAPPED AS FOLLOWS:

- |   |         |         |         |
|---|---------|---------|---------|
| MODIFICATION CONDITION                          | #4 BARS | #5 BARS | #6 BARS |
| 1. NONE   | 16"     | 19"     | 23"     |
| 2. 12" OF CONCRETE BELOW BAR                    | 20"     | 25"     | 30"     |
| 3. COATED BARS, COVER <3d, OR CLEAR SPACING <6d | 23"     | 29"     | 34"     |
| 4. COATED BARS, ALL OTHER CASES                 | 18"     | 23"     | 27"     |
| 5. COATED BARS, ALL OTHER CASES                 | 26"     | 32"     | 37"     |
| 6. CONDITION 2, AND 4.                          | 24"     | 30"     | 36"     |

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ALL REINFORCEMENT SHALL BE COATED.

**UTILITIES:**

EXISTING UTILITIES SHALL BE LOCATED AND PROTECTED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS TO RELOCATE OVERHEAD WIRES AND UTILITY POLES AS REQUIRED BY THE CONSTRUCTION.

**TRAFFIC:**

THE BRIDGE WILL BE OPEN TO TRAFFIC DURING ALL PHASES OF DEMOLITION AND CONSTRUCTION. REFER TO THE TEMPORARY TRAFFIC CONTROL PLANS FOR THE ASSOCIATED DETOUR.

SPENCER  
ST 31 (NORTH SPENCER ROAD)

STATE	FED. PROJECT NO.	SHEET NO.	TOTAL SHEETS
MA	#00000	4	10
PROJECT FILE NO.		809179	

**GENERAL NOTES & ESTIMATED QUANTITIES**

**TRAFFIC DATA**

DESIGN YEAR	ROADWAY WIDTH	ROADWAY TYPE
AVERAGE DAILY TRAFFIC - PRESENT	2042	ADT
AVERAGE DAILY TRAFFIC - DESIGN YEAR	5150	ADT
DESIGN HOURLY VOLUME	6535	ADT
DIRECTIONAL DISTRIBUTION	50%	ADT
TRUCK PERCENTAGE - AVERAGE DAY	N/A	ADT
TRUCK PERCENTAGE - PEAK HOUR	2%	PH
DESIGN SPEED	45 MPH	DES
DIRECTIONAL DESIGN HOURLY VOLUME	251	DDHV

**SEISMIC DESIGN CRITERIA**

DESIGN RETURN PERIOD:	1000 YR
As	0.098
S <sub>Ds</sub>	0.214
SD1	0.091
SITE CLASS	D
SEISMIC DESIGN CATEGORY (SDC)	A

**HYDRAULIC DESIGN DATA**

DRAINAGE AREA (SQ. MILES)	6.27
DESIGN FLOOD DISCHARGE (C.F.S.)	5.11
DESIGN FLOOD FREQUENCY (YEARS)	25
DESIGN FLOOD VELOCITY (F.P.P.S)	4.32
DESIGN FLOOD ELEVATION (FEET, NAVD)	706.72
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	840
BASE FLOOD ELEVATION (FEET, NAVD)	707.73

**DESIGN AND CHECK SCOUR DATA**

DESIGN SCOUR FLOOD EVENT	
RETURN FREQUENCY (YEARS)	50
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	0.82
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT	
RETURN FREQUENCY (YEARS)	100
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	1.02
CHECK FLOOD PIER SCOUR DEPTH (FEET)	N/A
DISCHARGE (C.F.S.)	N/A
VELOCITY (FEET PER SECOND)	N/A
PERCENTAGE OF KNOWN YEARS	N/A
MAXIMUM ELEVATION (FEET, NAVD)	N/A
DATE (MM/YYYY)	N/A
HISTORY OF ICE FLOES	NONE
EVIDENCE OF SCOUR AND EROSION	NONE

**TEMPORARY WATER CONTROL DESIGN DATA**

DESIGN FLOOD DISCHARGE (C.F.S.)	166
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.P.S)	5.93
*DESIGN FLOOD ELEVATION (FEET, NAVD)	706.89
*THIS IS THE RECOMMENDED TOP OF COFFERDAM ELEVATION	

**ESTIMATED QUANTITIES (NOT GUARANTEED)**

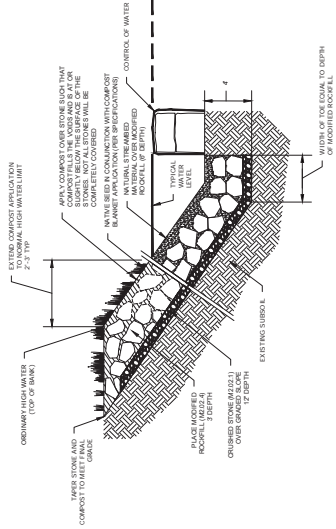
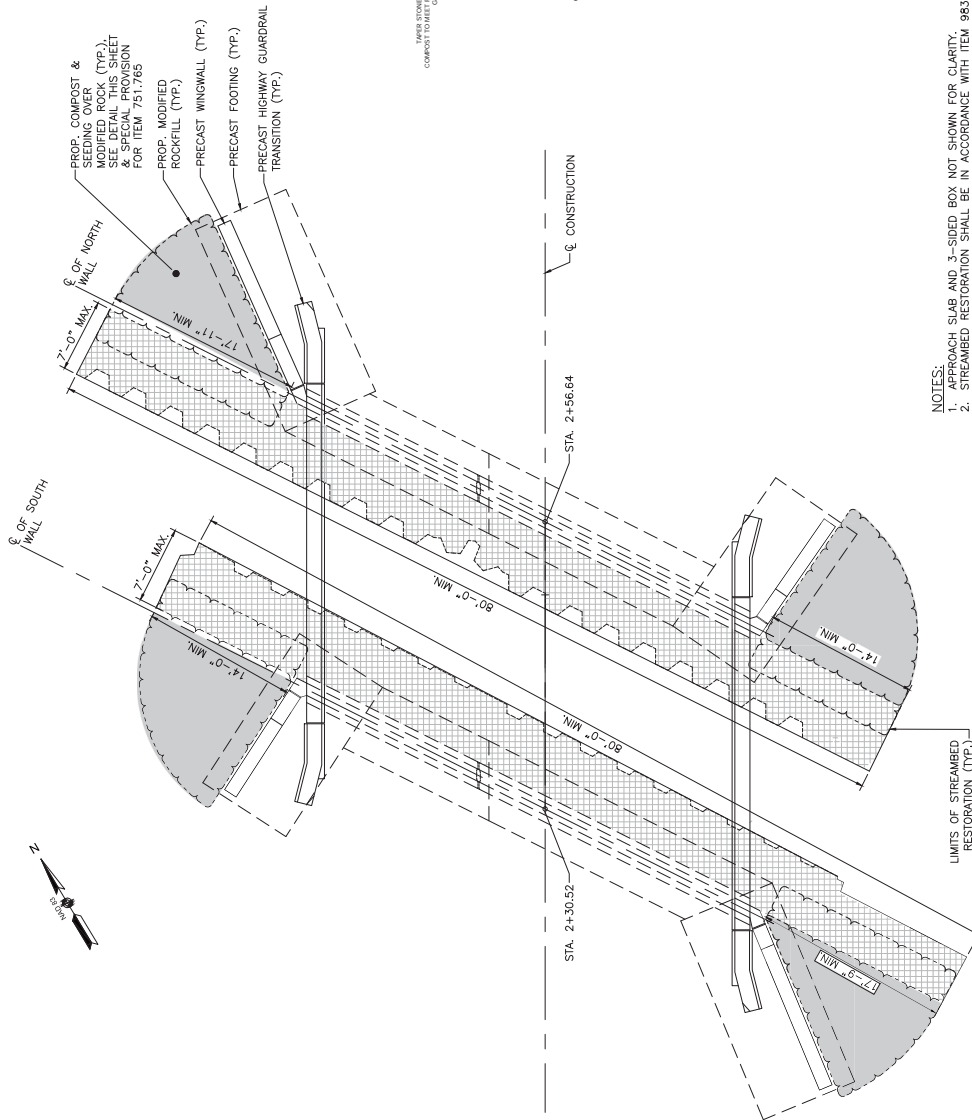
ITEM DESCRIPTION	QUANTITY	UNITS
CONCRETE STRUCTURE OF BRIDGE BR. NO. S-23-012 (DE)	400	CY
CONCRETE EXCAVATION	840	CY
BRIDGE EXCAVATION	85	CY
CLASS B ROCK EXCAVATION	40	CY
GRAVEL BORROW FOR BRIDGE FOUNDATIONS	560	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES & PIPES	235	TON
CRUSHED STONE FOR BRIDGE FOUNDATIONS	45	CY
CRUSHED STONE FOR FILTER BLANKET	11	TON
SUPERPAVE BRIDGE SURFACE COURSE-9.5 POLYMER (SSC-B-9.5-P)	25	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE-9.5 POLYMER (SPC-B-9.5-P)	190	SY
GEOTEXTILE FABRIC FOR SEPARATION	190	SY
WELLS FOR PERMANENT EROSION CONTROL	190	SY
TEMPORARY TRANSITION	230	LF
TEMPORARY BARRIER - LIMITED DEFLECTION (TL-3)	230	LF
MODIFIED ROCKFILL	180	TON
STREAMBED MATERIAL REMOVED AND RELAD	45	CY
NATURAL STREAMBED MATERIAL	25	CY
TEMPORARY EXCAVATION SUPPORT - BR NO. S-23-012 (CCL)	1	LS
CONTROL OF WATER - STRUCTURE NO. S-23-012 (CCL)	1	LS
TEMPORARY PROTECTIVE SHIELDING, BRIDGE NO. S-23-012 (CCL)	1	LS
BRIDGE STRUCTURE, BRIDGE NO. S-23-012 (CCL)	1	LS

MASSDOT NO. YYYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT ENGINEER	
AUTHORIZED BY: _____ DATE: _____	
SEE ONLY PRINTS OF LATEST DATE	

SHEET 1 OF 26 SHEETS BRIDGE NO. S-23-012 (CCL)

**SPENCER  
ST 31 (NORTH SPENCER ROAD)  
STREAMBED RESTORATION PLAN**

STATE	FED. PROJECT NO.	SHEET NO.	TOTAL SHEETS
MA	#89899	5	14
PROJECT FILE NO. 89879			



- NOTES:**
1. APPROACH SLAB AND 3-SIDED BOX NOT SHOWN FOR CLARITY.
  2. STREAMBED RESTORATION SHALL BE IN ACCORDANCE WITH ITEM 983.35 OF THE SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS.
  3. STREAMBED RESTORATION SHOWN AS THIS: [Symbol]

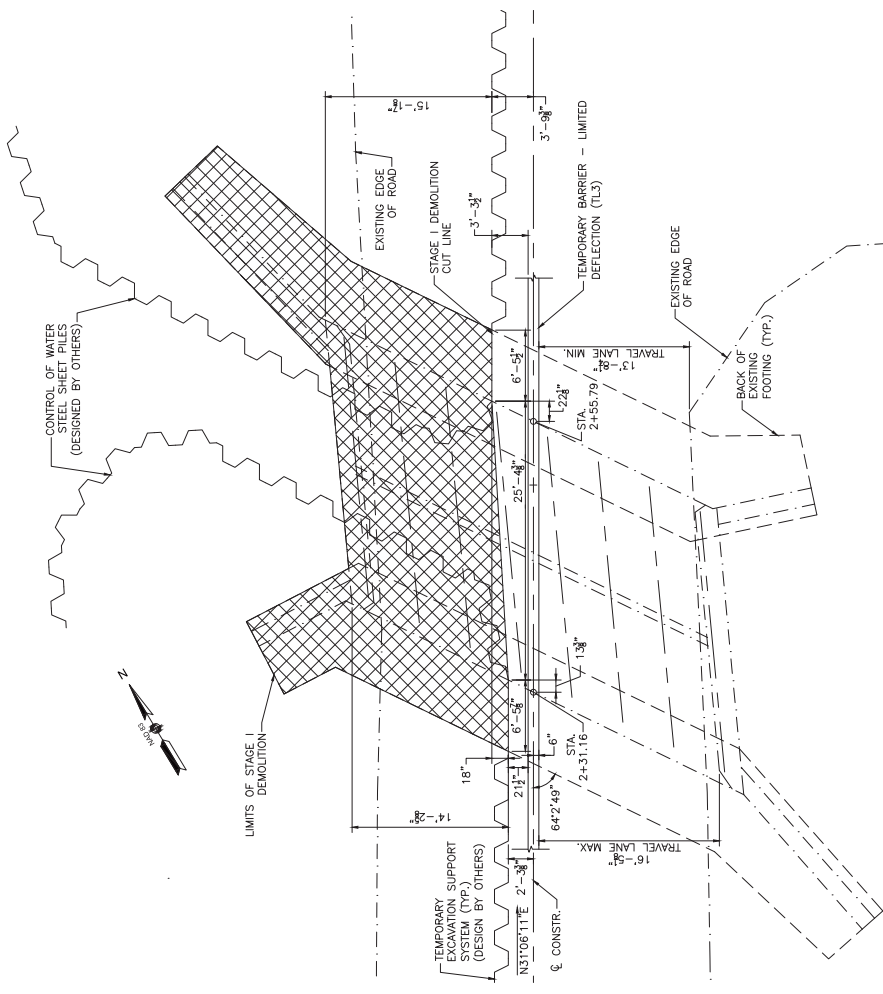
**STREAMBED RESTORATION PLAN**  
SCALE: 8" = 1'-0"

ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY	STATE BRIDGE ENGINEER	USE ONLY PRINTS OF LATEST DATE

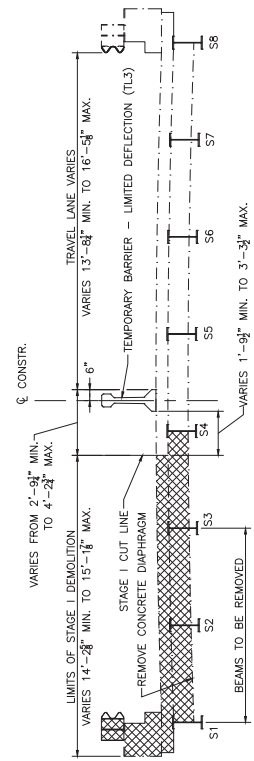


SPENCER		SHEET TOTAL	
ST 31 (NORTH SPENCER ROAD)		NO. SHEETS	
STATE	FED. PROJECT NO.	1	1
NO.	PROJECT FILE NO.	609179	

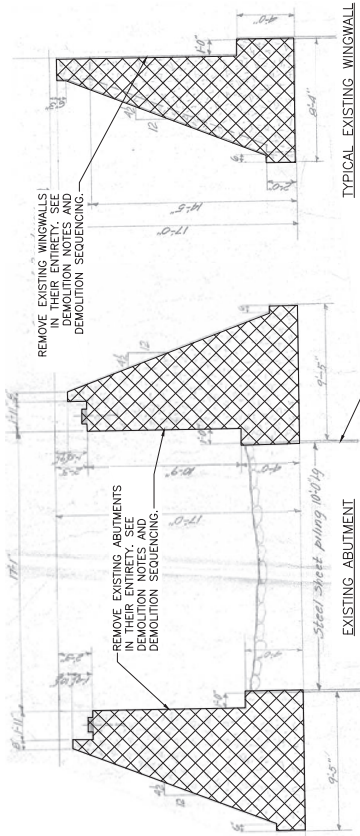
- DEMOLITION NOTE:**
1. SEE EXISTING SUBSTRUCTURE SECTIONS THIS SHEET.
  2. EXISTING ROADWAY IS TO BE PARALLEL TO CURBLINE.
  3. EXISTING ROADWAY IS TO BE RECONSTRUCTED WITH ITEM 114.1 AND 127.1 OF THE SPECIAL PROVISIONS.
- STAGE I DEMOLITION SEQUENCE:**
1. RELOCATE OVERHEAD UTILITIES.
  2. INSTALL TEMPORARY TRAFFIC CONTROLS FOR STAGE I.
  3. INSTALL TEMPORARY PROTECTIVE SHIELDING TO THE WEST OF THE STAGE I DEMOLITION LINE.
  4. SAW CUT NEAT LINES IN THE DECK AT THE STAGE I DEMOLITION CUT LINE.
  5. REMOVE THE DECK PLATES, DECK BEAMS S1-S3, BEARINGS, INTERMEDIATE DIAPHRAGM, AND END DIAPHRAGMS WEST OF THE STAGE I DEMOLITION CUT LINE WITHOUT DAMAGING THE COMPONENTS TO REMAIN.
  6. TEMPORARY EXCAVATION SUPPORT SYSTEM (DESIGNED BY OTHERS).
  7. INSTALL CONTROL OF WATER (DESIGNED BY OTHERS).
  8. REMOVE AND STORE THE TOP 12 INCHES OF STREAMBED MATERIAL TO THE LIMITS SHOWN ON THE STREAMBED RESTORATION PLAN IN ACCORDANCE WITH 983.3.3.6 OF THE SPECIAL PROVISIONS.
  9. EXCAVATE THE ABUTMENTS & WINGWALLS WEST OF THE STAGE I DEMOLITION CUT LINE.
  10. SAW CUT NEAT LINES ON ALL FACES OF THE BACKWALLS, ABUTMENTS, AND FOOTINGS TO THE STAGE I DEMOLITION CUT LINE.
  11. EXCAVATE THE WEST AND SOUTHWEST WINGWALLS AND FOOTINGS IN THEIR ENTIRETY.
  12. REMOVE THE BACKWALLS, ABUTMENTS, AND FOOTINGS WEST OF THE STAGE I DEMOLITION CUT LINE WITHOUT DAMAGING THE COMPONENTS TO REMAIN.
  13. CUT DOWN EXISTING ABUTMENT SHEET PILES TO THE BOTTOM OF THE LIMITS OF CRUSH STONE FOR BRIDGE FOUNDATION (SEE SHEET 14).



STAGE I DEMOLITION PLAN  
SCALE: 1/8" = 1'-0"



STAGE I DEMOLITION SECTION  
SCALE: 1/8" = 1'-0"



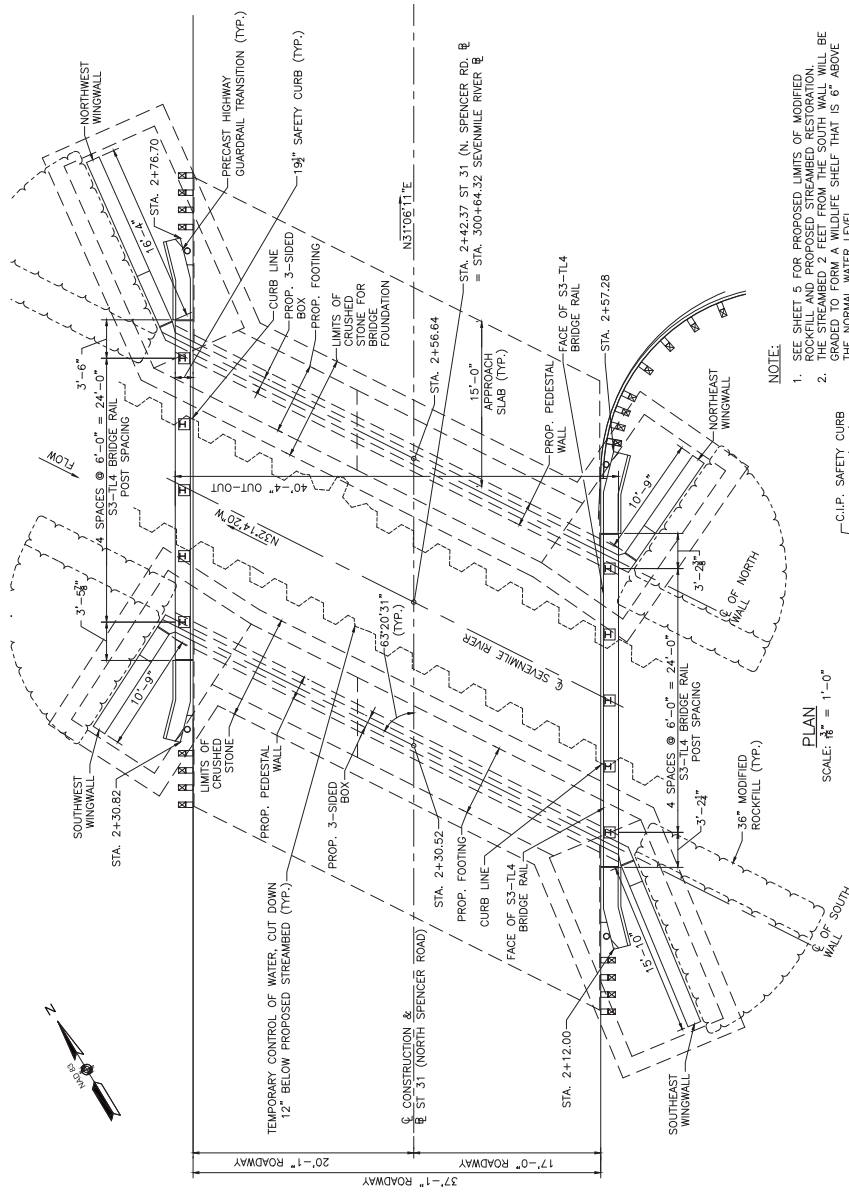
EXISTING SUBSTRUCTURE SECTIONS  
SCALE: 1/4" = 1'-0"

MMW 00. YYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY	
STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

**SPENCER  
ST 31 (NORTH SPENCER ROAD)**

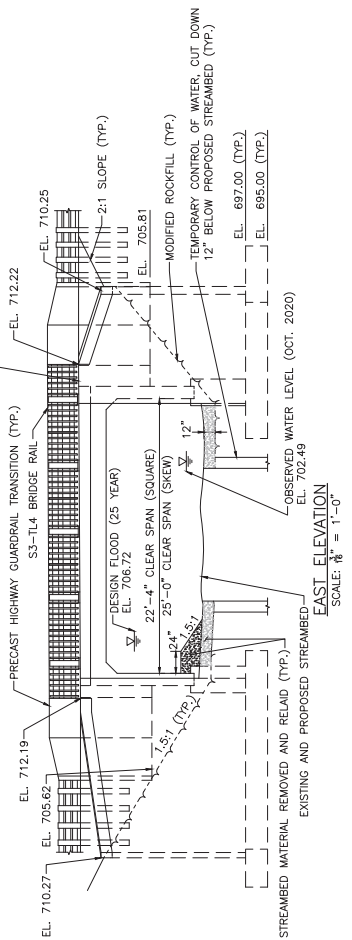
STATE	FED. PROJECT NO.	SHEET NO.	TOTAL SHEETS
MA	##	7	14
PROJECT FILE NO.	809179		

**PLAN & ELEVATION**



- NOTE:**
- SEE SHEET 5 FOR PROPOSED LIMITS OF MODIFIED ROCKFILL AND PROPOSED STREAMBED RESTORATION. THE STREAMBED 2 FEET FROM THE SOUTH WALL WILL BE GRADED TO FORM A WILDLIFE SHELF THAT IS 6" ABOVE THE NORMAL WATER LEVEL.

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



**EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

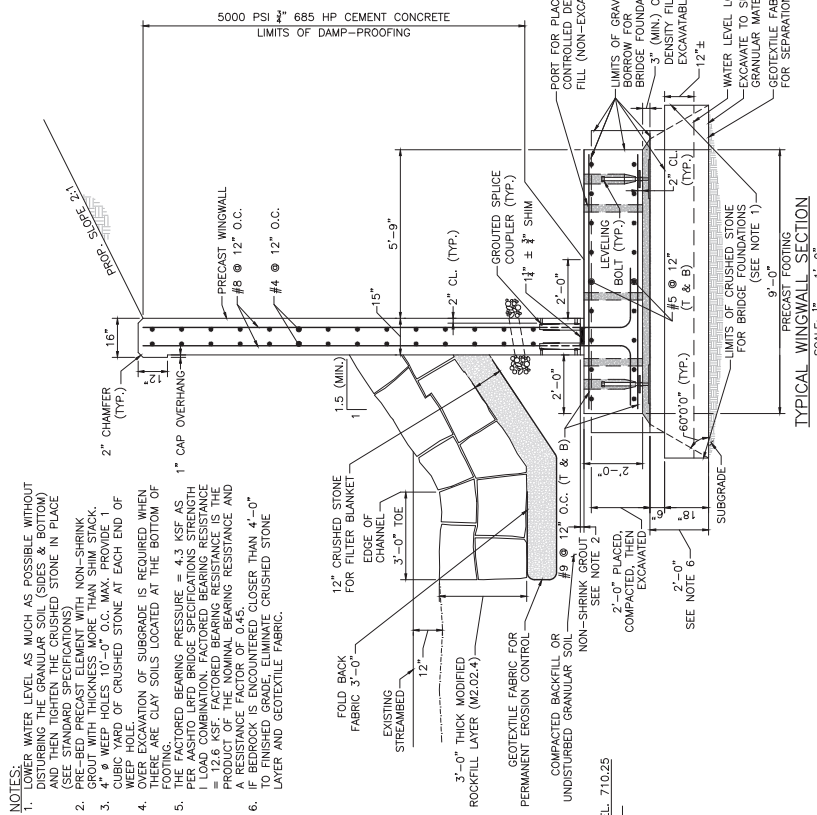
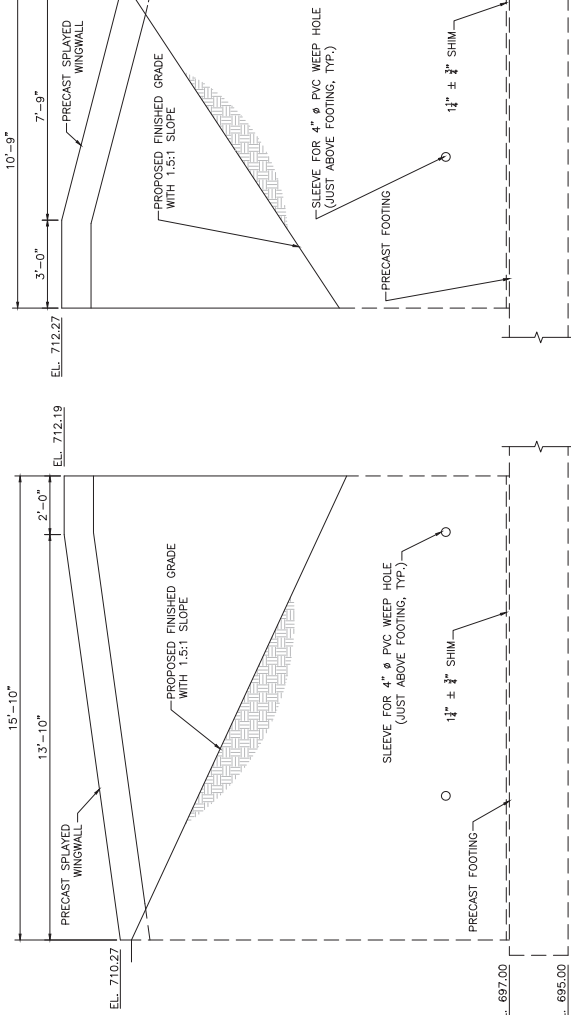
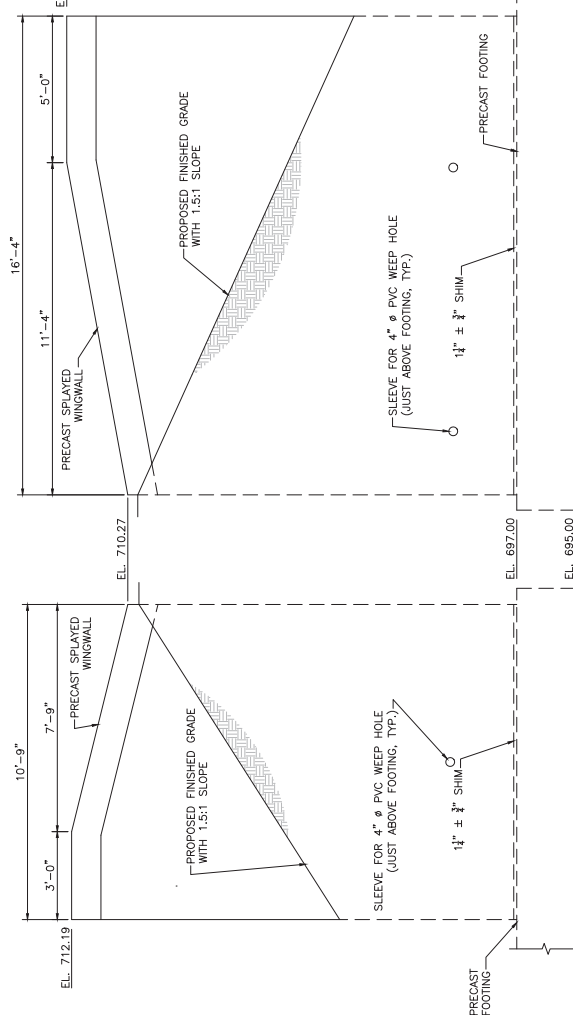
ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY		STATE BRIDGE ENGINEER
		USE ONLY PRINTS OF LATEST DATE

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. PROJECT NO.	SHEET NO.	TOTAL SHEETS
MAX.	PROJECT FILE NO.	8	14
		80979	

**PRECAST WINGWALL ELEVATIONS**

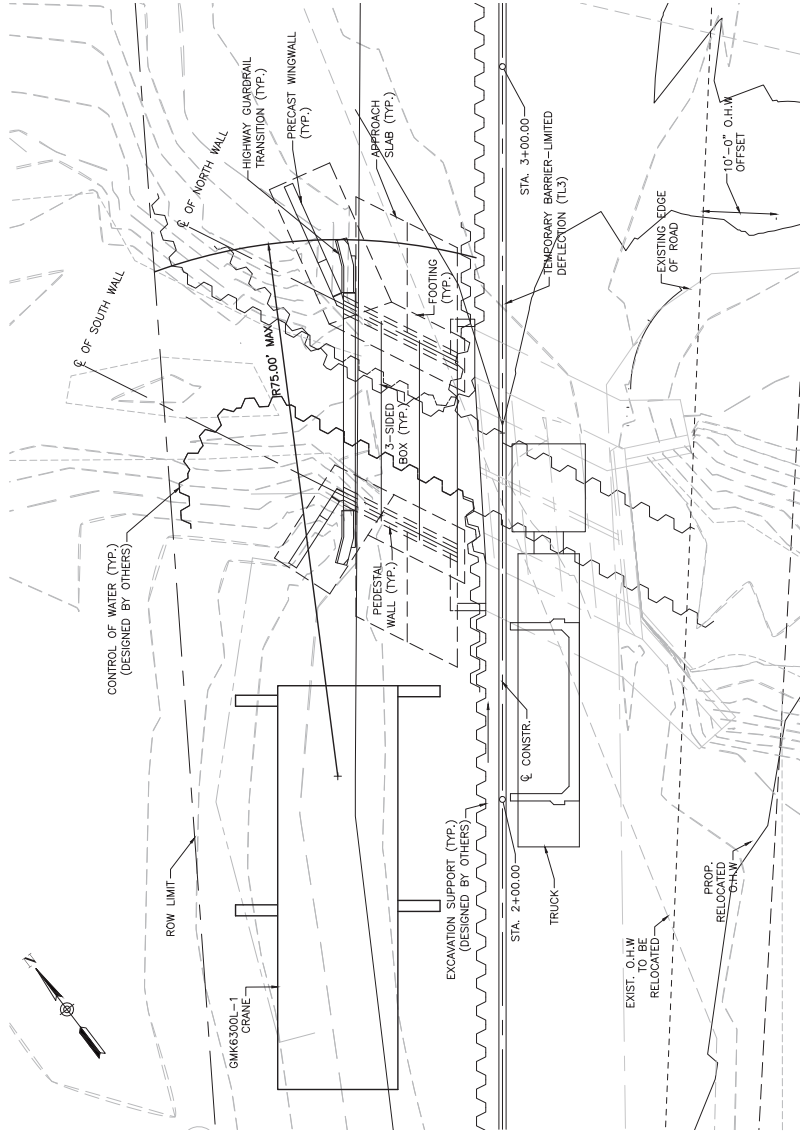
- NOTES:**
1. WATER LEVEL AS MUCH AS POSSIBLE WITHOUT DISTURBING THE GRANULAR SOIL (SIDES & BOTTOM) AND THEN TIGHTEN THE CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS).  
PRE-BED PRECAST ELEMENT WITH NON-SHRINK GROUT (TYP.) TO 1/2" O.C. MAX. PROVIDE 1" CAP OVERHANG.
  2. 4" PVC WEEP HOLES 10'-0" O.C. MAX. PROVIDE 1" CAP OVERHANG.
  3. CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
  4. OVER EXCAVATION OF SUBGRADE IS REQUIRED WHEN THERE ARE CLAY SOILS LOCATED AT THE BOTTOM OF FOOTING.
  5. THE FACTORED BEARING PRESSURE = 4.3 KSF AS PER AASHTO LRFD BRIDGE SPECIFICATIONS. STRENGTH REDUCTION FACTOR = 0.9. DESIGN BEARING RESISTANCE = 12.6 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.
  6. TO FINISH GRADE, ELIMINATE CRUSHED STONE LAYER AND GEOTEXTILE FABRIC.



ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY.		
STATE BRIDGE ENGINEER		DATE

SPENCER  
ST 31 NORTH SPENCER ROAD  
STAGE I SUGGESTED ERECTION PROCEDURE

STATE	FED. SUPPLEMENTAL NO.	SHEET NO.	TOTAL SHEETS
MA	MA	1	1
PROJECT FILE NO.		89979	



SUGGESTED STAGE I  
ERECTION PROCEDURE

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

NOTES:

1. CRANE IS A GROVE GMK6300L-1 WITH 203,900 LBS OF COUNTER-WEIGHT.
2. THE CRANE CAPACITY IS 74,000 FEET AND A FACTORED WEIGHT OF 60,000 LBS.
3. THE CRANE CAPACITY IS 74,000 LBS WITH A REACH OF 75.00 FEET.

STAGE I SUGGESTED LIFTING PROCEDURE:

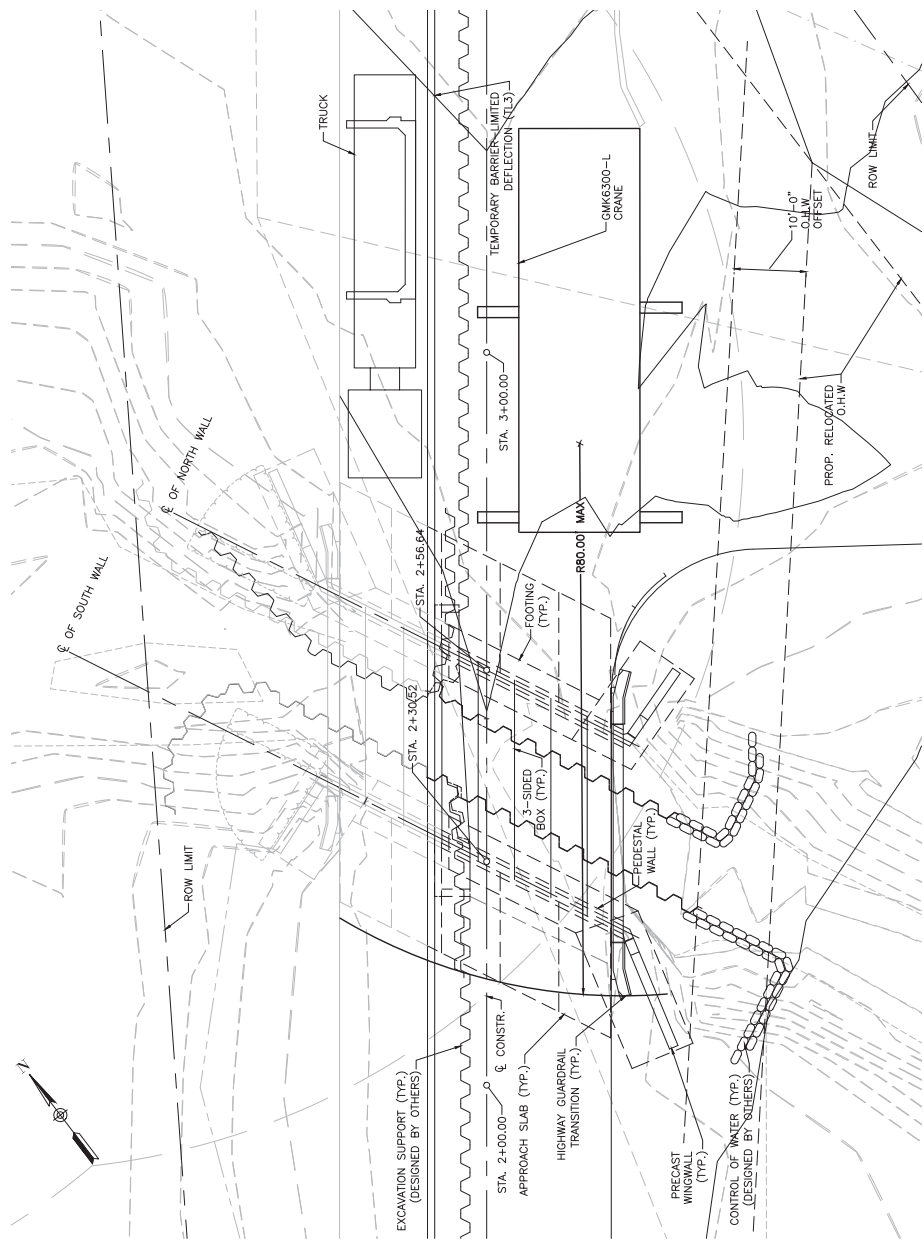
1. TRAFFIC WILL BE TEMPORARILY STOPPED IN THE NORTHBOUND LANE.
2. THE TRUCK WILL STOP IN THE NORTHBOUND LANE WITHOUT PRE-APPROVAL BY THE ENGINEER.
3. THE CRANE WILL LIFT THE PRECAST ELEMENT OFF OF THE TRUCK AND LOWER IT INTO POSITION.
4. THE CRANE WILL BE RELOCATED TO THE SOUTH APPROACH SLAB.
5. REPEAT STEPS 1 & 2 FOR ALL REMAINING PRECAST ELEMENTS.
6. PRECAST ELEMENT TO BE INSTALLED IN STAGE I:
  - A. SOUTH FOOTING UNITS 1 & 2
  - B. SOUTH FOOTING WALL UNIT 1
  - C. NORTH FOOTING WALL UNIT 1
  - D. NORTH PEDESTAL WALL UNIT 1
  - E. 3-SIDED BOX UNITS 1-3
  - F. NORTH PEDESTAL WALL
  - G. NORTHEAST WINGWALL
  - H. NORTHWEST HIGHWAY GUARDRAIL TRANSITION
  - I. NORTHWEST HIGHWAY GUARDRAIL TRANSITION
  - J. SOUTH APPROACH SLAB UNITS 1 & 2

MA, DR, YYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY	
STATE BRIDGE ENGINEER	DATE
USE ONLY PRINTS OF LATEST DATE	

**SPENCER**  
**ST 31 NORTH SPENCER ROAD**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	##	##	##
PROJECT FILE NO.	809179		

**STAGE II SUGGESTED ERECTION PROCEDURE**



**SUGGESTED STAGE II  
ERECTION PROCEDURE**  
SCALE: 1/8" = 1'-0"

**NOTE:**  
1. CRANE IS A GROVE GMK6300-L WITH 203,900 LBS OF COUNTER-WEIGHT.  
2. THE CRITICAL LIFT IS SOUTH FOOTING UNIT 4 WITH A REACH OF 80.00 FEET AND FACTORED WEIGHT OF 55,000 LBS.  
3. THE CRANE CAPACITY WITH A REACH OF 80.00 FEET IS 66,000 FEET WITH A REACH OF 80.00 FEET.

**STAGE II SUGGESTED LIFTING PROCEDURE:**

1. TRAFFIC WILL BE TEMPORARILY STOPPED IN THE SOUTHBOUND LANE.
2. THE TRUCK WILL STOP IN THE SOUTHBOUND LANE WITH PRECAST ELEMENT.
3. THE TRUCK WILL BE OPENED TO TRUCK AND LOWER IT INTO POSITION.
4. THE SOUTHBOUND LANE WILL BE RE-OPENED TO TRAFFIC.
5. REPEAT STEPS 1 & 2 FOR ALL REMAINING PRECAST ELEMENTS.
6. PRECAST ELEMENT TO BE INSTALLED IN STAGE II:

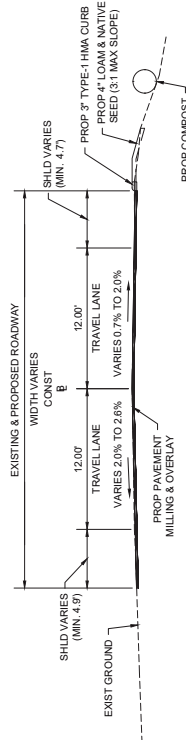
- A. SOUTH FOOTING UNITS 3 & 4
- B. SOUTH PEDESTAL WALL UNIT 2
- C. NORTH FOOTING UNITS 3 & 4
- D. NORTH PEDESTAL UNIT 2
- E. SOUTH BOX UNITS 4-8
- F. SOUTH WINGWALL
- G. NORTHEAST WINGWALL
- H. SOUTHEAST HIGHWAY GUARDRAIL TRANSITION
- I. NORTHEAST HIGHWAY GUARDRAIL TRANSITION
- J. SOUTH APPROACH SLAB UNITS 3-5
- K. NORTH APPROACH SLAB UNITS 3-5

DATE	ISSUED FOR CONSTRUCTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY	DESCRIPTION
STATE BRIDGE ENGINEER	USE ONLY PRINTS OF LATEST DATE

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

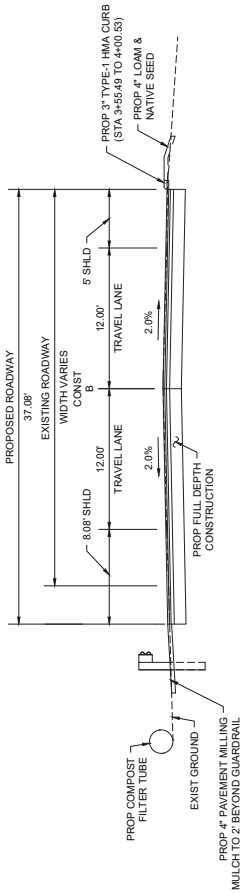
STATE	FED. SUPERNO. NO.	SHEET NO.	TOTAL SHEETS
MA	##00##	11	11
PROJECT FILE NO. 609179			

**TYPICAL SECTIONS - N SPENCER RD**



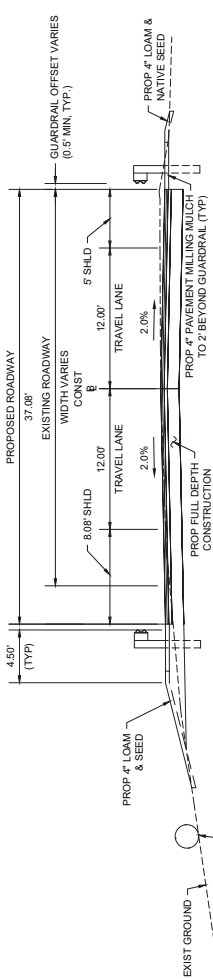
**TYPICAL SECTION**  
**NORTH SPENCER ROAD**  
**PAVEMENT MILLING AND OVERLAY**

STA. 4+00.55 TO 4+25.53



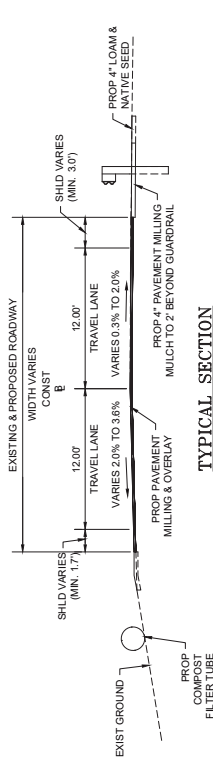
**TYPICAL SECTION**  
**NORTH SPENCER ROAD**  
**FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

N.T.S.  
STA. 0+27.00 TO STA. 4+00.53  
(\*MINOR BOX WIDENING 12' AND 12' ALONG ENTIRE STATION RANGE)



**TYPICAL SECTION**  
**NORTH SPENCER ROAD**  
**FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

N.T.S.  
STA. 1+47.00 TO STA. 2+14.00  
(\*MINOR BOX WIDENING 12' AND 12' ALONG ENTIRE STATION RANGE)



**TYPICAL SECTION**  
**NORTH SPENCER ROAD**  
**PAVEMENT MILLING AND OVERLAY**

N.T.S.  
STA. 1+52.00 TO 1+47.00

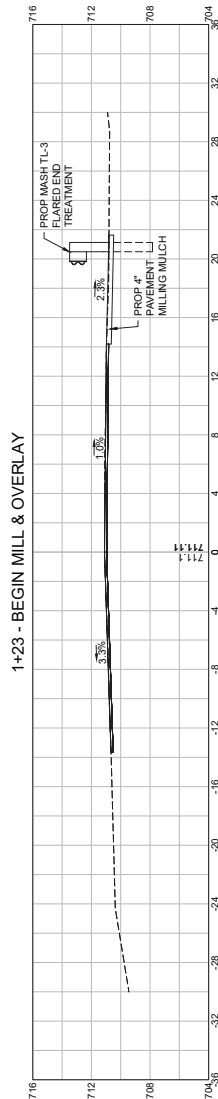
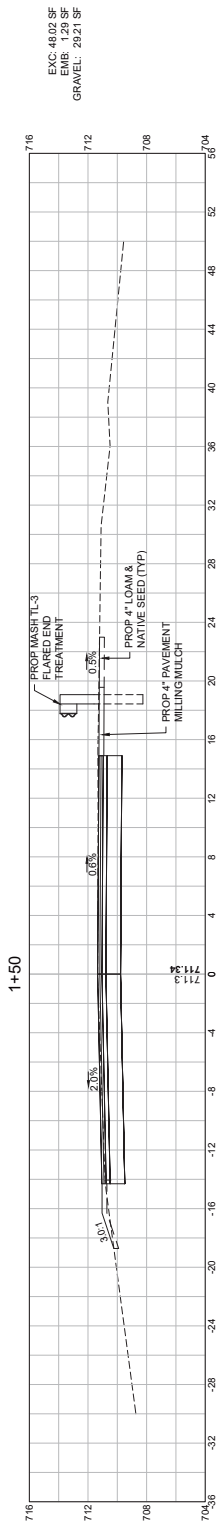
**PAVEMENT NOTES**

- PROPOSED FULL DEPTH PAVEMENT SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER INTERMEDIATE: 2.0" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
  - BASE: 4.0" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER
  - SUBBASE: 12" GRAVEL BORROW, TYPE B
  - PROPOSED PAVEMENT MILLING & OVERLAY SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/SY OVER EXISTING PAVEMENT FINE MILL VARIABLE DEPTH (0.2-1.5") TO MEET PROPOSED GRADING
  - PROPOSED HMA BRIDGE WEARING COURSE (AS PER BRIDGE ENGINEER APPROVAL) SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER
  - PROTECTIVE: VARIES 1.5"-9.5" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER MEMBRANE WATERPROOFING FOR BRIDGE DECKS
- NOTE:
1. ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/SY OVER MILLED SURFACE ASPHALT EMULSION FOR TACK COAT AT 0.08 TO 0.08 GAL/SY OVER INTERMEDIATE AND BASE COURSE. TACK SHALL BE RS-H.
  2. PLACE SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SSC-B-9.5-P) IN LIFTS NOT TO EXCEED 1.875".

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		12	14
PROJECT FILE NO.		609179	

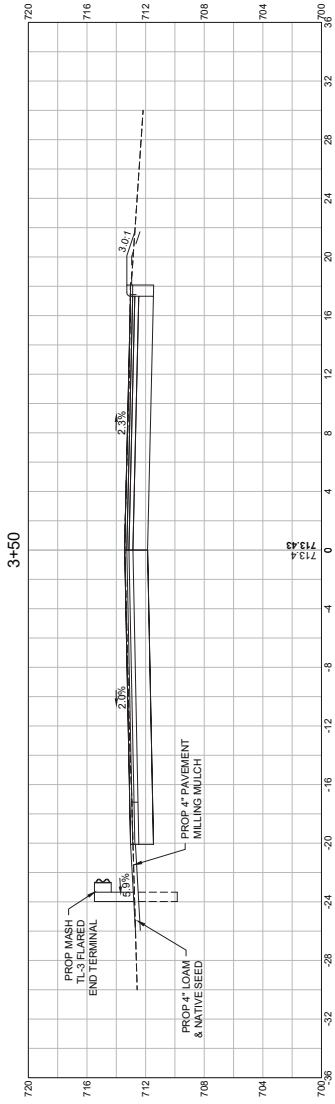
**CROSS SECTIONS ST 31**



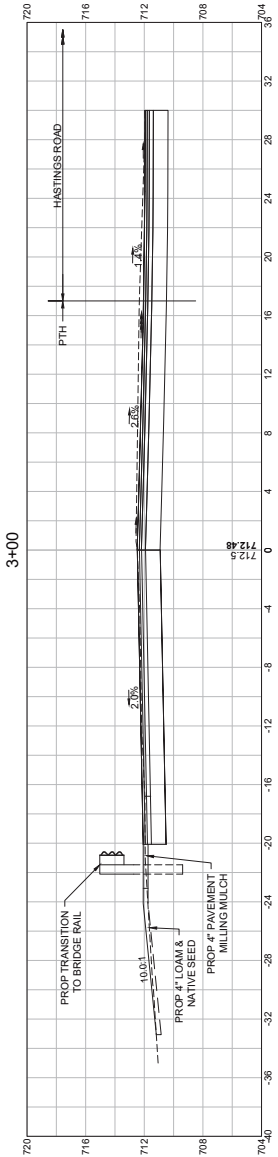
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**  
**CROSS SECTIONS ST 31 (2)**

STATE	FED. AID PROJ. NO.	SHEET TOTAL
MA	#/TOTAL	13 / 14
PROJECT FILE NO.		609179

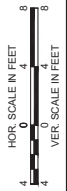
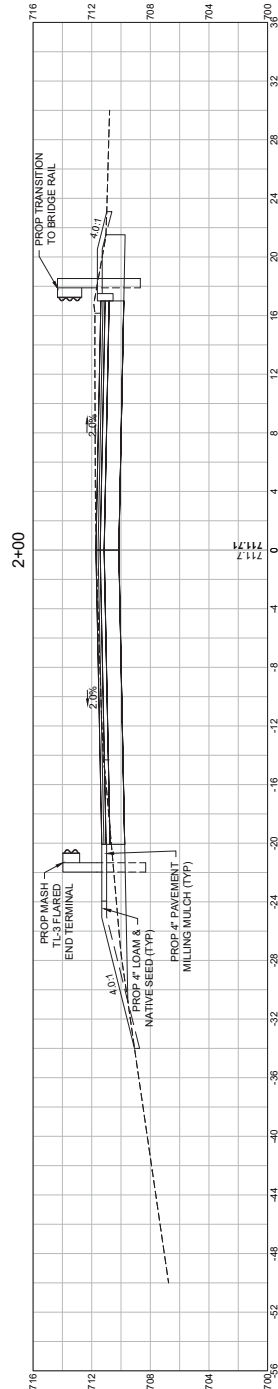
EXC: 5981 SF  
EMB: 155 SF  
GRAVEL: 3849 SF



EXC: 6160 SF  
EMB: 220 SF  
GRAVEL: 3707 SF



EXC: 7133 SF  
EMB: 520 SF  
GRAVEL: 5362 SF

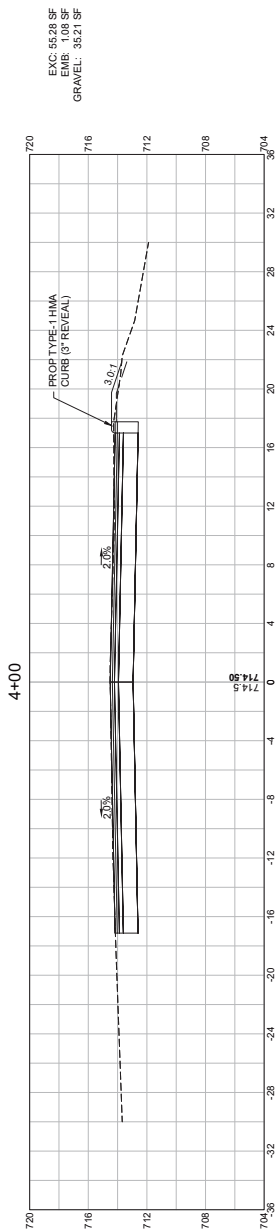
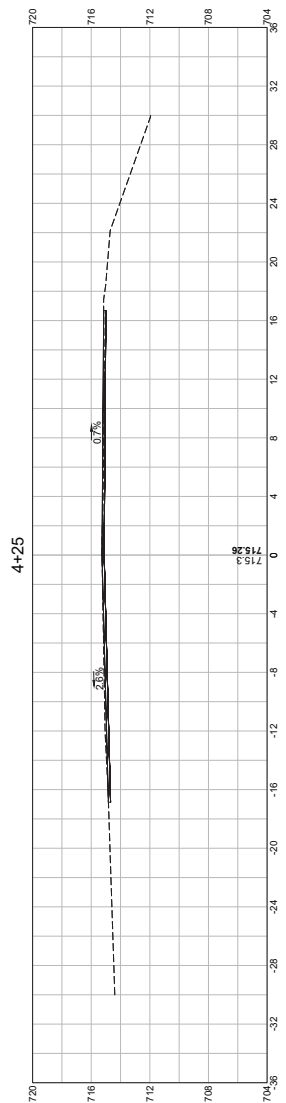




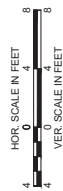
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#BX#	11	11
PROJECT FILE NO.		609179	

**CROSS SECTIONS ST 31**



EXC. 5528 SF  
EMB. 108 SF  
GRAVEL. 3521 SF





**US Army Corps  
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New England District

**WORK-START NOTIFICATION FORM**  
(Minimum Notice: Two weeks before work begins)

\*\*\*\*\*

EMAIL TO: daniel.b.vasconcelos@usace.army.mil and cenae-r-ma@usace.army.mil; or

MAIL TO: Daniel Vasconcelos  
Regulatory Division  
U.S. Army Corps of Engineers, New England District  
696 Virginia Road  
Concord, Massachusetts 01742-2751

\*\*\*\*\*

A U.S. Army Corps of Engineers authorization, file # 2023-02553, was issued to MassDOT – Highway Division. The permit authorized the permanent discharge of fill material within 374 square feet below the Ordinary High Water (OHW) mark of the Sevenmile River, associated with the replacement of the bridge conveying North Spencer Road (Route 31) over the Sevenmile River in Spencer, Massachusetts. The existing single-span bridge will be replaced by a new single-span bridge in the same location. New abutments will be constructed landward of the existing abutments, and the existing abutments removed. Rip-rap scour protection over-topped with 12-inches of stockpiled natural streambed material will be placed in front of the new abutments. The project will also have temporary impacts within 1,043 square feet below OHW due to the installation of cofferdams and dewatering.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

**PLEASE PRINT OR TYPE**

Name of Person/Firm: \_\_\_\_\_

Business Address: \_\_\_\_\_

\_\_\_\_\_

Phone: ( ) \_\_\_\_\_ ( ) \_\_\_\_\_

Email: \_\_\_\_\_

Proposed Work Dates: Start \_\_\_\_\_ Finish \_\_\_\_\_

Permittee/Agent Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Date Permit Issued: \_\_\_\_\_ Date Permit Expires: \_\_\_\_\_

\*\*\*\*\*

**FOR USE BY THE ARMY CORPS OF ENGINEERS**

PM: Vasconcelos Submittals Required: \_\_\_\_\_

**Inspection Recommendation:** \_\_\_\_\_



**US Army Corps  
of Engineers**®  
New England District

**COMPLIANCE CERTIFICATION FORM**

(Minimum Notice: Permittee must sign and return notification  
within one month of the completion of work.)

**Permit Number:** NAE-2023-02553  
**Project Manager:** Vasconcelos  
**Name of Permittee:** MassDOT – Highway Division  
**Permit Issuance Date:** 3/18/2024

Please sign this certification and return it to our office upon completion of the activity.

\*\*\*\*\*  
\* E-MAIL TO: [cenae-r-ma@usace.army.mil](mailto:cenae-r-ma@usace.army.mil); or \*  
\* \* \* \* \*  
\* MAIL TO: Massachusetts Section \*  
\* Regulatory Division \*  
\* U.S. Army Corps of Engineers, New England District \*  
\* 696 Virginia Road \*  
\* Concord, MA 01742-2751 \*  
\*\*\*\*\*

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

**I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.**

\_\_\_\_\_  
Signature of Permittee

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date of Work Completion

( ) \_\_\_\_\_  
Telephone Number

( ) \_\_\_\_\_  
Telephone Number



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Maura T. Healey  
Governor

Kimberley Driscoll  
Lieutenant Governor

Rebecca L. Tepper  
Secretary

Bonnie Heiple  
Commissioner

March 11, 2024

Massachusetts Department of Transportation  
Highway Division  
10 Park Plaza, Suite 6340  
Boston, MA 02116  
ATTN: Courtney Walker

RE: Section 401 Water Quality Certification  
BRP WW 11, Minor Fill Project  
North Spencer Road (Route 31) Over the Sevenmile River  
Spencer, MA

401 WQC Filing Number: 23-WW11-0020-APP  
USACE Application No. NAE-2023-02553

Dear Ms. Walker:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed your application for a Water Quality Certification (WQC), as referenced above; this application was deemed complete on February 9, 2024. 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 project proposes to replace the bridge superstructure within the Town of Spencer, adjacent to the intersection of North Spencer Road and Hastings Road (Bridge #S-23-012) over the Sevenmile River. Replacement of the structure is necessary due to the existing structure's severely deteriorated condition. In addition to this, the project also proposes to reconstruct the roadway on both sides of the bridge on North Spencer Road and a portion of Hastings Road. The project includes dewatering sections within the river to access portions of the bridge.

The existing bridge was originally built in 1938 and has a single-span steel beam superstructure with a reinforced concrete bridge deck covered with an asphalt wearing coarse. The existing substructure consists of two concrete gravity abutments connected to concrete gravity wingwalls. The existing structure has a 34-foot width and an approximate 17-foot clear span. The approach roadway is approximately 23- to 24-foot wide with a shoulder width ranging from 2 to 3 feet on the south side and

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.  
TTY# MassRelay Service 1-800-439-2370  
MassDEP Website: [www.mass.gov/dep](http://www.mass.gov/dep)

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up to 5 feet on the north side. There are no sidewalks or stormwater infrastructure within the project vicinity.

Sevenmile River is a perennial stream designated as a Coldwater Fishery and is tributary to the Chicopee River Basin. The river flows from west to east through an impoundment owned by the Cisterian Abbey of Spencer and continues under Route 31. The channel has a bankfull width of approximately 17 feet. Portions of the project will take place within Federal Emergency Management Agency (FEMA) Zone A as shown in the Flood Insurance Map (FIRM) community panel #25027C0567E.

The proposed bridge replacement will consist of a precast concrete three-sided box culvert supported by concrete pedestal walls on concrete footings with approach slabs. The proposed structure will have a similar location and alignment as the existing structure and will be widened from 34 feet to 37 feet, 1 inch. The proposed abutments will be set back from the existing channel to provide a clear span of 22 feet, 4 inches. The construction sequence will occur in two phases to maintain a single lane of traffic along North Spencer Road.

Approximately 1,043 square feet of temporary Land Under Water (LUW) impacts will occur between the water control measures and the existing abutments for dewatering and to construct the proposed bridge, wingwalls and wingwall revetment. There will be permanent LUW impacts from the construction of the rip rap revetment in the amount of 374 square feet, which will be mitigated by the creation of 310 square feet of new Land Under Water which results from the increase in the span width of the superstructure. The newly formed LUW will have a 3-foot layer of rip rap armoring and the rip rap below the Ordinary High-Water line will be overlaid with a 12-inch layer of existing streambed material, with a 1.5:1 slope.

Bridge demolition and reconstruction will occur in a two-stage process to allow and maintain a single lane of traffic along North Spencer Road during construction. Construction is anticipated to occur in dry conditions with the use of sheet piles, cofferdams, and dewatering equipment.

As the project is considered redevelopment in accordance with the stormwater provisions of 314 CMR 9.06(a)7., stormwater standards will be met to the maximum extent practicable (MEP). The project site currently has no drainage infrastructure and proposes a minor increase in impervious area totaling 1,060 square feet (0.14% increase) and will maintain similar drainage patterns as the predeveloped conditions. The project proposes to create four vegetated filter strips within the project area by placing 4-inches of loam and seeding along a 25-foot-long strips. Water quality swales were investigated for consideration but were deemed unsuitable to avoid cutting down the tree canopy and additional vegetation that provides a thermal buffer and shading to the Sevenmile River, which is designated as a Coldwater Fishery.

The proposed three-sided box culvert will increase the span length by approximately 5 feet, providing a 22 foot, 4-inch clear span. The structure will be embedded into the stream to an approximate depth of 6 feet, exceeding the minimum of 2 feet. In addition to maintaining existing water depths and velocities, the project will also exceed the openness requirements with an openness ratio of 4.29 feet with a vertical span 6-feet high. A wildlife bench will be constructed adjacent to the south abutment, maximizing dry passage for wildlife along the southern abutment. The proposed project will meet each of the Stream Crossing Standards.

The Project occurs within Natural Heritage and Endangered Species Program (NHESP) Priority Habitat and Estimated Habitat of Rare Wildlife for the freshwater creeper mussel (*Strophitus undulatus*). In a letter dated May 5, 2023, NHESP concluded that the Project will not result in a prohibited Take of state-listed rare species, subject to the mussel protection measures (mussel sweep/translocation plan) as described in the filing. Therefore, as conditioned, the Project complies with 314 CMR 9.06(2).

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 Spencer New Leader on November 24, 2023, and in the MEPA Monitor on November 22, 2023. 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.

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:
  - Application for Water Quality Certification. Prepared by Bayside Engineering on behalf of MassDOT, dated November 6, 2023, with cover letter and attachments, 401 WQC Filing Number: 23-WW11-0020-APP.
  - Undated Plans entitled: "Spencer, ST 31 (North Spencer Road)". Sheets 3, 5, 6, 16, 17, 20, 21, 29, 31, 40-44. Prepared by Bayside Engineering. Initial undated plan set was received on November 6, 2023, and the revised plans were subsequently received on January 9, 2024 and February 9, 2024.

- MassDEP Technical Review. 401 Water Quality Certification, Minor Fill Project Certification. Dated December 5, 2023 and a Supplemental Technical Review dated January 24, 2024.
- MassDOT Responses to MassDEP Technical Review. Prepared by Bayside Engineering on behalf of MassDOT. 401 Water Quality Certification, Minor Fill Project Certification. Dated January 9, 2024 and on February 9, 2024.

### **Pre-Construction**

2. As proposed and specified in the application and in Item 983.35 and 983.36, a qualified **Fluvial Geomorphologist (FGM)** with a minimum of five years of relevant professional experience in stream replacement and restoration projects shall be employed to oversee all LUW replacement and restoration activities. The name, contact information, and qualifications of the FGM shall be provided to MassDEP for approval with a copy to the Spencer Conservation Commission prior to the Pre-Construction Meeting. **(Submittal)**
3. Prior to the Pre-Construction Meeting, 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)**
4. A minimum of 21 days prior to the start of work, 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, the FGM, a representative from the MassDOT Environmental Section and/or the District Environmental Engineer shall attend the Pre-Construction Meeting.
5. MassDEP shall be copied on applicable submittals to the U.S. Army Corps of Engineers (Corps). 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)**
6. 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. If the EPA CGP applies, the SWPPP may serve as the CP/PP, providing it includes the measures required to be in the CP/PP per these Special Conditions, in addition to the measures specifically required by the CGP. Any subsequent changes to the Final CP/PP (defined herein as including the construction period SWPPP) must be approved by MassDEP. **(Submittal)**
7. Training regarding erosion and sedimentation controls is required. The RE, CP/PP Inspector, and any other relevant personnel responsible for erosion and sedimentation controls shall complete the EPA Construction General Permit Inspector Training, or other training that meets the CGP requirements, as well as complete a comprehensive review of the Final CP/PP. Verification of proof of completion training of the shall be submitted to MassDEP prior to the start of work.



8. The CP/PP shall identify, but shall not be limited to, staging and laydown areas in relation to LUW, proposed dewatering 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.
9. A minimum of 21 days prior to the start of work, MassDOT shall submit a Water Management Plan for review and approval. The Plan shall include proposed methods to manage construction-period water including but not limited to dewatering methods and locations, specifications for any water bypass systems, and dredge and debris material dewatering prior to shipment off site, as applicable. The plan shall meet requirements of the CP/PP and be specific to the Project. Dewatering and water bypasses shall be conducted under the supervision of the RE and comply with the applicable conditions identified herein. **(Submittal)**
10. 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.
11. Prior to the Pre-Construction Meeting, the boundaries of 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.
12. A Flood Contingency Plan shall be submitted to MassDEP for review and approval that addresses areas that fall within the 1% annual chance of flooding zone within project limits. The Plan shall address the potential need for temporary relocation of construction and auxiliary equipment during flood events to designated upland locations above the Base Flood Elevation. The Plan shall be approved by MassDEP prior to any work within the 1% annual chance of flooding zone, including mobilization or storage of equipment and materials. **(Submittal)**
13. A minimum of 21 days prior to the start of 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 assure that demo material is properly contained and does not enter Sevenmile River. **(Submittal)**

#### **Construction Period**

14. No more than **374 sf** of permanent and **1,043 sf** of temporary impacts to LUW shall occur. No more than **94 cy** of dredging in LUW shall occur. All work shall avoid unapproved impacts to BVW and LUW.
15. Mowing of the Vegetated Filter Strips shall be limited to no more than twice per year. Erosion controls shall be used to stabilize the vegetated filter strips prior to the establishment of vegetation.

16. A floating silt fence shall be kept on site and ready to deploy when construction work is likely to discharge sediment into the waterway. The floating silt fence shall not be allowed to block more than 50 percent of the channel width. The floating silt fence shall be installed to contain any sediment discharges from work areas and shall be cleaned as recommended by the floating silt fence manufacturer. The floating silt fence shall be removed from the waterway when construction work allows and removed from the site when no longer needed.
17. 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.
18. Copies of CP/PP Inspection and Maintenance Log Forms shall be submitted to MassDEP within 14 days upon request.
19. Inspection and maintenance of erosion and sediment controls in active work areas shall be the responsibility of both the Contractor and RE. The project team shall include an individual with at least three-years' experience with construction period erosion and sedimentation control. The RE shall be ultimately responsible for inspection and maintenance of site controls. The RE and/or contractor shall immediately notify MassDEP and the Spencer Conservation Commissions if any unauthorized discharges to LUW occur.
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 stabilization has been initiated.
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 Spencer Conservation Commission within 24 hours prior to the commencement of dewatering. Dewatering methods and location(s) shall be approved by the RE prior to use, and shall be documented in the CP/PP. There shall be no discharge of untreated dewatered stormwater or groundwater to 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 RE 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 RE 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 12.
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. Stockpiles shall be located no less than 50 feet from LUW, catch basins, or other drainage conveyances that discharge to LUW. The CP/PP shall specify measures to implement this. Filter fabric stretched under storm drain inlet grates are not acceptable for this purpose.

25. 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 LUW, catch basins or other drainage conveyances that discharge directly or indirectly to LUW.
26. Refueling, washing, and cleaning of vehicles and other construction equipment shall not take place within 50 feet of LUW and any wash water shall be contained such that it does not drain toward LUW. MassDEP shall explicitly approve in writing any deviation to this condition for oversized stationary vehicles.
27. The contractor shall have spill containment kits on site. In the event of a release of fuels and/or oils, the local fire department and MassDEP shall be notified.
28. Sheeting outside of the footprint of the bridge shall be removed rather than cut off to the extent possible.
29. A temporary shielding 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 that any debris accidentally enters the Sevenmile 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**

30. The FGM shall oversee all LUW restoration in accordance with plans and specifications approved herein. Placement of streambed materials shall take place in no- or low-flow conditions. The Water Management Plan required in Condition 9 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.
31. Streambed materials must be approved by the Resident Engineer and FGM prior to use.
32. A report shall be submitted by the FGM following completion of the LUW restoration, which shall include representative photos and a summary of the restoration activities and results.  
**(Submittal)**
33. 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.

#### **Post-Construction**

34. All temporary erosion controls shall be removed at the conclusion of work once the surrounding area has achieved final stabilization.

**General Conditions**

35. Any proposed alterations, minor 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](mailto:heidi.davis@mass.gov) and [ryan.morrison@mass.gov](mailto:ryan.morrison@mass.gov). **(Submittal)**
36. This WQC remains in effect for the same duration as the Section 404 permit that requires it.
37. No Special Condition set forth herein shall be construed or operate to prohibit MassDEP from taking enforcement against the MassDOT or its contractors for any failure to comply with the terms and requirements of this WQC.
38. 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; 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  
Commissioner's Office  
100 Cambridge Street, Suite 900  
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):

3. the 401 Certification Transmittal Number;
4. the complete name of the applicant and address of the project;
5. 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;
6. 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;
7. a clear and concise statement that an adjudicatory hearing is being requested;
8. 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
9. 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

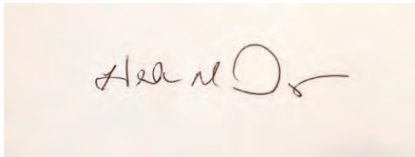
The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

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 Ryan Hale at [Heidi.davis@mass.gov](mailto:Heidi.davis@mass.gov) and [ryan.morrison@mass.gov](mailto:ryan.morrison@mass.gov)

Very truly yours,

A photograph of a handwritten signature in black ink on a light-colored background. The signature appears to read "Heidi M. Davis" with a stylized flourish at the end.

Heidi M. Davis  
Highway Unit Supervisor

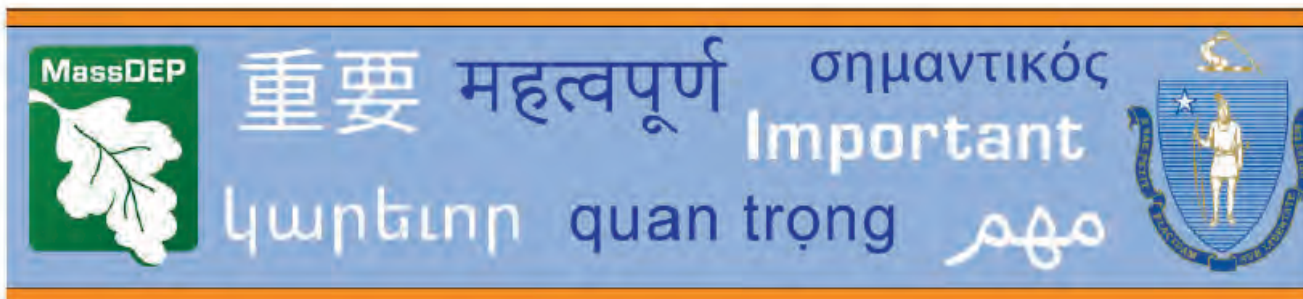
Ecc: DEP CERO – Judy Schmitz  
MassDOT – Melissa Lenker  
MassDOT – Kylie Abouzeid  
USACE – Dan Vasconcelos  
MassDOT D3 Environmental Engineer – [Tracey Coppellotti](#)  
[MassDOT D3- Adele Brochu](#)  
Bayside Engineering – Christopher Sokolowski - [csokolowski@baysideengineering.com](mailto:csokolowski@baysideengineering.com)  
Spencer Conservation Commission – Lauren Vivier – [lvivier@spencerma.gov](mailto:lvivier@spencerma.gov)

**ATTACHMENT A**  
**Bridge Replacement on North Spencer Road (Route 31) Over Sevenmile River**  
**Spencer, MA**

**PRE-CONSTRUCTION SUBMITTAL CHECKLIST**

**THIS CHECKLIST MUST BE COMPLETED PRIOR TO THE START OF WORK; NOTE THAT SOME CONDI-  
TIONS REQUIRE THAT INFORMATION BE SUBMITTED A SPECIFIC NUMBER OF DAYS PRIOR TO THE  
START OF WORK OR THE PRE-CONSTRUCTION MEETING.**

<b>Condition</b>	<b>Required Submittal</b>	<b>Due Date</b>	<b>Date Submitted</b>	<b>Date Approved</b>
<b>PRE-CONSTRUCTION SUBMITTAL REQUIREMENTS</b>				
2	Name, contact information, and qualifications of the FGM, including specific experience and years to meet requirement	Prior to Pre-Construction Meeting		
3	Name and contact information of the RE	Prior to Pre-Construction Meeting		
5	Corps Work-Start Notification Form	14 days prior to work start		
6	CP/PP	14 days prior to work start		
9	Water Management Plan	21 days prior to work start		
12	Flood Contingency Plan	Prior to any work within 1% annual chance of flooding zone		
13	Demolition Plan	21 days prior to work start		
<b>ACTIVE/POST-CONSTRUCTION SUBMITTAL REQUIREMENTS</b>				
32	LUW Restoration Report	Post-Construction of LUW		
35	Proposed alterations, minor plan changers or amendments	N/A		



### 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 Anviwònmanal 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 ហើយកម្មវិធីត្រូវបានបកប្រែភ្លាមៗ។  
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 telefoni menxionadu di baixo.

**Contact Deneen Simpson 857-406-0738**  
**Massachusetts Department of Environmental Protection**  
**100 Cambridge Street 9<sup>th</sup> Floor Boston, MA 02114**  
TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>  
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)



**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.

**հայերէն 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।

Contact Deneen Simpson 857-406-0738

Massachusetts Department of Environmental Protection  
100 Cambridge Street 9<sup>th</sup> Floor Boston, MA 02114

TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>  
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

General Permit No.: NAE-2022-02649  
 Applicant: General Public, Commonwealth of Massachusetts

Final Effective Date: June 2, 2023  
 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:

	<u>Pages</u>
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 Date  
 Chief, Regulatory Division

## **SECTION I. STATUTORY AUTHORITIES & 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](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-Construction 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](mailto: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](mailto: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](mailto: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:

- Meet the terms and conditions of the GP as proposed;
- Require additional information;
- Require avoidance, minimization, compensatory mitigation, construction sequencing, project modification, or other special conditions to avoid or minimize adverse impacts to the aquatic environment;
- 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](mailto: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**

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.

**Pre-Construction Notification Required**

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<sup>1</sup>, 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<sup>2</sup> 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.

<sup>1</sup> 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).

<sup>2</sup> 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<sup>1</sup>; or (b) Moorings in a USACE Federal Navigation Anchorage or USACE Federal Navigation Channel, except municipal-operated mooring fields.

**Self-Verification Eligible**

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.

**Pre-Construction Notification Required**

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.

<sup>1</sup> 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 out hauls, 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  $\leq 600$  SF combined; and (ii) Non-tidal navigable waters of the U.S. total  $\leq 600$  SF combined; and
  - b. Piers are  $\leq 4$  feet wide and  $\geq 6$  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  $\geq 24$  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  $\geq 25$  feet from previously mapped or existing vegetated shallows, or riparian property line extensions; (ii) Extend  $\leq 25\%$  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  $\leq 12$ -inch diameter timber piles. Installation of  $\geq 12$ -inch diameter piles of any material type when installed in the dry.
2. Fenders and similar structures.

**Pre-Construction Notification Required**

1. Shore out hauls.
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<sup>1</sup>; or (c) dredging in navigable waters of the U.S. (see GP 7).

**Self-Verification Eligible**

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.

**Pre-Construction Notification Required**

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. 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<sup>1</sup>, outfall or intake structures<sup>2</sup>, 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.<sup>3</sup>

**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**

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.

**Pre-Construction Notification Required**

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.

<sup>1</sup> See the definitions of a “utility line” and “oil or natural gas pipeline” in Section VII.

<sup>2</sup> Outfall structures must be in compliance with regulations issued under the National Pollutant Discharge Elimination System Program (Section 402 of the Clean Water Act).

<sup>3</sup> 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<sup>1</sup> 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.

<sup>1</sup> 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**

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.

**Pre-Construction Notification Required**

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**

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.

**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.
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 >1/2 acre.

**Self-Verification Eligible**

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.

**Pre-Construction Notification Required**

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 ≤1/2 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**

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.

**Pre-Construction Notification Required**

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**

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.

**Pre-Construction Notification Required**

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**

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.

**Pre-Construction Notification Required**

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**

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.

**Pre-Construction Notification Required**

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**

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.

**Pre-Construction Notification Required**

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**

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.

**Pre-Construction Notification Required**

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<sup>1</sup> (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**

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.

**Pre-Construction Notification Required**

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.

<sup>1</sup> 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**

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.

**Pre-Construction Notification Required**

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**

≤500 linear feet of drainage ditch will be reshaped provided excavated material is deposited in an upland area.

**Pre-Construction Notification Required**

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<sup>1</sup> 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.

<sup>1</sup> 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**

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.

**Pre-Construction Notification Required**

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<sup>1</sup>, 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**

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.

**Pre-Construction Notification Required**

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).

<sup>1</sup> 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](http://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](http://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](http://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](http://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  $\geq 1$  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 applicable 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](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<sup>1</sup> (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)<sup>2</sup>, 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.

<sup>1</sup> 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.

<sup>2</sup> 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<sup>1</sup> 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<sup>2</sup> 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.

<sup>1</sup> 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.

<sup>2</sup> 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  $\leq 3$  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  $\leq 1$  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  $\leq 6$  months. Temporary construction mats placed in an area  $\geq 5,000$  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<sup>1</sup> (hereinafter referred to as “controls”) must be 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.

<sup>1</sup> 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 siliceous 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<sup>1</sup> of the resource area types listed below. Activities<sup>2</sup> 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).

<sup>1</sup> See definition of loss in Section VII.

<sup>2</sup> 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](http://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**

<u>Massachusetts Department of Environmental Protection (MassDEP)</u>	
<u>DEP Division of Wetlands &amp; Waterways</u>	100 Cambridge Street, Suite 900 Boston, Massachusetts 02114 (617) 292-5695
<u>Northeast Region</u>	150 Presidential Way, Suite 300 Woburn, Massachusetts 01801 (978) 694-3200
<u>Southeast Region</u>	20 Riverside Drive, Route 105 Lakeville, Massachusetts 02347 (508) 946-2800
<u>Central Region</u>	8 New Bond Street Worcester, Massachusetts 01606 (508) 792-7650
<u>Western Region</u>	436 Dwight Street Springfield, Massachusetts 01103 (413) 784-1100

<u>Massachusetts Office of Coastal Zone Management (CZM)</u>	
Emails may be sent to: <a href="mailto:czm@mass.gov">czm@mass.gov</a>	
<u>MA Office of Coastal Zone Management</u>	100 Cambridge Street, Suite 900 Boston, Massachusetts 02114 (617) 626-1200
<u>North Shore Region</u>	2 State Fish Pier Gloucester, Massachusetts 01930 (978) 281-3972
<u>South Shore Region</u>	175 Edward Foster Road Scituate, Massachusetts 02066
<u>Cape Cod and Islands Region</u>	3195 Main Street, P.O. Box 220 Barnstable, MA 02630
<u>South Coastal Region</u>	81-B County Road, Suite E Mattapoisett, MA 02739

<u>Massachusetts Historical Commission (MHC)</u>	
Office Location:	220 Morrissey Boulevard Boston, Massachusetts 02125 (617) 727-8470

<u>Massachusetts Board of Underwater Archaeological Resources (BUAR)</u>	
Emails may be sent to: <a href="mailto:david.s.robinson@mass.gov">david.s.robinson@mass.gov</a>	
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, dockminiums, 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](http://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](http://www.nae.usace.army.mil/missions/navigation) >> Navigation Projects:

Andrews River, Harwich, MA	Cross Rip Shoals, Nantucket	Gloucester Harbor and
Aunt Lydia's Cove	Sound	Annisquam River
Beverly Harbor	Cuttyhunk Harbor	Green Harbor
Boston Harbor	Dorchester Bay and Neponset	Hingham Harbor
Buttermilk Bay Channel	River	Hyannis Harbor
Canapitsit Channel	Duxbury Harbor	Ipswich River
Cape Cod Canal	Edgartown Harbor	Island End River (Chelsea, MA)
Chatham Harbor	Essex River	Kingston Harbor
Cohasset Harbor	Fall River Harbor	Lagoon Pond
	Falmouth Harbor	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 shear 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 substrate 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 coarse 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 (*Ruppia 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](http://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](http://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 <u>excluding</u> 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 <u>excluding</u> 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<sup>18</sup>, 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](mailto: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, it is 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

<sup>18</sup> <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](mailto: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](mailto: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](mailto:106review@mwtribe-nsn.gov)  
Cc: [David.weeden@mwtribe-nsn.gov](mailto: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](mailto: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](mailto: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 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.

**Disclosure**

**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](mailto: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
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**(ITEMS BELOW TO BE FILLED BY APPLICANT)**

5. APPLICANT'S NAME First - Middle - Last - Company - E-mail Address -		8. AUTHORIZED AGENT'S NAME AND TITLE ( <i>agent is not required</i> ) First - Middle - Last - Company - E-mail Address -	
6. APPLICANT'S ADDRESS: Address- City - State - Zip - Country -		9. AGENT'S ADDRESS: Address- City - State - Zip - Country -	
7. APPLICANT'S PHONE NOs. with AREA CODE a. Residence    b. Business    c. Fax    d. Mobile		10. AGENT'S PHONE NOs. with AREA CODE 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*)

Latitude:                      °N                      Longitude:                      °W

City:    State:    Zip:

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
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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 its 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](mailto: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
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**APPLICANT AND AGENT INFORMATION**

<b>4. APPLICANT'S NAME</b> First -                      Middle -                      Last - Company - E-mail Address -	<b>7. AGENT'S ADDRESS:</b> First -                      Middle -                      Last - Company - E-mail Address -
<b>5. APPLICANT'S ADDRESS:</b> Address- City -                      State -                      Zip -                      Country -	<b>8. AGENT'S ADDRESS:</b> Address- City -                      State -                      Zip -                      Country -
<b>6. APPLICANT'S PHONE NOs. w/AREA CODE</b> a. Residence                      b. Business                      c. Fax	<b>9. AGENTS PHONE NOs. w/AREA CODE</b> 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) Latitude: °N                      Longitude: °W	14. PROJECT STREET ADDRESS (if applicable) 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
- b. Massachusetts BUAR
- c. Tribal Historic Preservation Officers
- d. Endangered Species Act - NOAA
- e. Endangered Species Act - USFWS
- f. Northern Long Eared Bat (ESA)
- g. Essential Fish Habitat
- h. Wild & Scenic Rivers
- i. 401 Water Quality Certification 401
 

401 WQC/OOC File Number:	OOC issued:	401 issued:
--------------------------	-------------	-------------
- j. Section 408 Permission
- k. Coastal Zone
- l. Construction Mats
- m. Time of Year Restrictions
- n. Vernal Pools
- o. Sediment & Erosion Controls
- p. Stream/Wetland Crossings

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.
- 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 \_\_\_\_\_ 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".<sup>19</sup>
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.

<sup>19</sup> 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](http://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<sup>20</sup> 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.

<sup>20</sup> 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  $\leq 4$  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  $\geq 1.2$  times bank full width and conveyance should be embedded  $\geq 1-2$  feet for box culverts and pipe arches or  $\geq 1-2$  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  $\geq 0.82$ -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<sup>21</sup> 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](https://www.habitat.noaa.gov/apps/efhmapper/?page=page_3).

<sup>21</sup> 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:

DOCUMENT A00840

**MASSACHUSETTS**  
**Department of Environmental Protection**  
**Water Quality Certificate Application**

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MassDOT Highway Division | Water Quality Certification

## BRIDGE NO. S-23-012

## NORTH SPENCER ROAD (ST 31) OVER THE SEVENMILE RIVER

PROJECT FILE NO. 609179



PREPARED FOR



10 Park Plaza  
Boston, MA 02116

PREPARED BY



600 Unicorn Park Drive  
Woburn, MA, 01801

11/6/2023



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection – Wetlands and Waterways  
**BRP WW 10 Major Project Certification**  
**BRP WW 11 Minor Project Certification**  
**401 water Quality Certification for Fill and excavation**  
**Projects in waters and Wetlands**

Transmittal Number # \_\_\_\_\_

**A. Applicant Information**

**Important:** When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Which permit category are you applying for?

BRP WW 10       BRP WW 11

2. Applicant/Owner:

MassDOT  
 Name  
 10 Park Plaza, Room 7360  
 Address  
 Boston MA 02116  
 City/Town State Zip Code  
 Courtney Walker - courtney.l.walker@dot.state.ma.us  
 Contact Person  
 N/A 857-262-0757  
 Telephone (home) (work)

3. Authorized Agent

Bayside Engineering, Inc.  
 Name  
 600 Unicorn Park Drive  
 Address  
 Woburn MA 01801  
 City/Town State Zip Code  
 Christopher Sokolowski, PE - csokolowski@baysideengineering.com  
 Contact Person  
 N/A 781-932-3201  
 Telephone (home) (work)





**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection – Wetlands and Waterways  
**BRP WW 10 Major Project Certification**  
**BRP WW 11 Minor Project Certification**  
**401 water Quality Certification for Fill and excavation**  
**Projects in waters and Wetlands**

Transmittal Number # \_\_\_\_\_

**B. Project Information**

1. Project Location:

North Spencer Road over Sevenmile River (42.29169, 72.00053)

Address

Spencer

MA

01562

City/Town

State

Zip Code

Sevenmile River

Nearest or Adjacent Waterbody

2. Project Name (if any):

North Spencer Road (ST 31) Over Sevenmile River (Bridge S-23-012)

3. a. Describe project purpose:

To replace the existing bridge carrying North Spencer Road over Sevenmile River

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b. Is the project

water-dependent

non water-dependent



**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection – Wetlands and Waterways  
**BRP WW 10 Major Project Certification**  
**BRP WW 11 Minor Project Certification**  
**401 water Quality Certification for Fill and excavation**  
**Projects in waters and Wetlands**

Transmittal Number # \_\_\_\_\_

**B. Project Information (cont.)**

4. a. provide a brief description of the proposed project (See Application Instructions and include a copy of the Notice of intent, if any.):

The existing bridge deck and abutments will be removed and replaced with a new bridge occupying a similar footprint (See attachment A for more information).

b. Notice of Intent File number (if any): N/A

5. Identify the loss in square feet of each type of resource area (see Application Instructions for additional information.):

a. Bordering vegetated wetland:	<u>0</u> square feet
b. Isolated vegetated wetland:	<u>0</u> square feet
c. Land under water:	<u>374 (PERM) &amp; 1,043 (TEMP)</u> square feet
d. Total cumulative loss of a. + b. + c.:	<u>374 (PERM) &amp; 1,043 (TEMP)</u> square feet
e. Salt marsh:	<u>0</u> square feet

6. a. Will the proposed project occur in any wetlands or waters designated as "Outstanding Resource Waters"?

Yes       No

If yes has public notice been published in the Environmental Monitor?

Yes       No

TBD  
Date of Publication

b. Is this project a subdivision or any part of a subdivision?       Yes       No

c. Is the project categorically subject to MEPA?       Yes       No

If yes, has final action been taken?       Yes       No

If yes, please include copy of MEPA certificate.



**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection – Wetlands and Waterways  
**BRP WW 10 Major Project Certification**  
**BRP WW 11 Minor Project Certification**  
**401 water Quality Certification for Fill and excavation**  
**Projects in waters and Wetlands**

Transmittal Number # \_\_\_\_\_

---

**B. Project information** (cont.)

7. Alternatives Analysis:

As related to the project purpose, attach a detailed description of alternatives to the proposed project that were considered and why none are available that avoid adverse impacts to wetlands and waters.

If no alternatives are available, describe how the activity will minimize or mitigate the adverse impacts to wetlands and waters.

See application instructions for information required. Attach required documentation.

---

**C. Additional Information**

1. Is any of your proposed work exempt from the Massachusetts Wetlands Protection Act or taking place in a federal non-state wetland?

Yes       No

If yes, see Application Instructions for additional information needed.

2. Public notice to a newspaper of general circulation within the area of the proposed activity must be published within 10 days of the date of this application. Is proof of public notice submitted?

Yes       No

(See Application Instructions for additional information)

---

**D. Certification**

Application is hereby made for water quality certification.

"I certify that I am familiar with the work proposed and that to the best of my knowledge and belief the information contained in this application is true, complete, and accurate"

*Courtney Walker*

Applicant's Signature

Courtney Walker

Print name

Agent's Signature

Christopher Sokolowski

Print Name

11/06/23

Date

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 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.

**Disclosure**

**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](mailto: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)**

<p>5. APPLICANT'S NAME</p> <p>First - Courtney Middle - Last - Walker</p> <p>Company - MassDOT Highway Division</p> <p>E-mail Address - courtney.l.walker@dot.state.ma.us</p>	<p>8. AUTHORIZED AGENT'S NAME AND TITLE (<i>agent is not required</i>)</p> <p>First - Christopher Middle - Last - Sokolowski</p> <p>Company - Bayside Engineering, Inc.</p> <p>E-mail Address - csokolowski@baysideengineering.com</p>
<p>6. APPLICANT'S ADDRESS:</p> <p>Address- 10 Park Plaza, Room 7360</p> <p>City - Boston State - MA Zip - 02116 Country - USA</p>	<p>9. AGENT'S ADDRESS:</p> <p>Address- 600 Unicorn Park Drive</p> <p>City - Woburn State - MA Zip - 0180 Country - USA</p>
<p>7. APPLICANT'S PHONE NOs. with AREA CODE</p> <p>a. Residence b. Business c. Fax d. Mobile</p> <p>857-262-0757</p>	<p>10. AGENT'S PHONE NOs. with AREA CODE</p> <p>a. Residence b. Business c. Fax d. Mobile</p> <p>781-932-320</p>

**STATEMENT OF AUTHORIZATION**

11. I hereby authorize, Bayside Engineering, Inc. 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.

*Courtney Walker*

11/14/23

SIGNATURE OF APPLICANT

DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

<p>12. PROJECT NAME or TITLE (<i>see instructions</i>)</p> <p>North Spencer Road (ST 31) Over Sevenmile River (Bridge S-23-012)</p>	
<p>13. NAME OF WATERBODY, IF KNOWN (<i>if applicable</i>)</p> <p>Sevenmile River</p>	<p>14. PROPOSED ACTIVITY STREET ADDRESS (<i>if applicable</i>)</p> <p>North Spencer Road (ST 31) near Hastings Road</p> <p>City: Spencer State: MA Zip: 01562</p>
<p>15. LOCATION OF PROPOSED ACTIVITY (<i>see instructions</i>)</p> <p>Latitude: 42.29169 °N Longitude: 72.00053 °W</p>	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

State Tax Parcel ID: N/A

Municipality: Spencer

Section:

Township:

Range:

17. DIRECTIONS TO THE SITE.

I-90 exit 90 to MA-12 to I-395/I-290/Worcester. Right to MA-12 S (0.6 mi), right to West St (1.2 mi), left to Rochdale St (0.4 mi), to Comins Rd (0.5 mi), to Mill St (0.6 mi), left to Stafford St (495 ft), right to Pleasant St (0.7 mi), to River St (1.6 mi), left to Pine St (0.8 mi), right to Greenville St (3.0 mi), left to Main St (0.8 mi), right to MA-31 N for 3.7 mi to Destination.

18. IDENTIFY THE SPECIFIC GENERAL PERMIT(S) YOU PROPOSE TO USE:

GP-23

19. DESCRIPTION OF PROPOSED GENERAL PERMIT ACTIVITY (see instructions)

Replacement of existing structurally deficient bridge (S-23-012) carrying North Spencer Road (ST 31) over the Sevenmile River with a precast concrete 3-sided box culvert on precast pedestal walls and footers. Proposed structure will be in a similar location and alignment and be widened to 1.2x the bankfull width to comply with Stream Crossing Standards. See Narrative for more detail.

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (see instructions)

Turbidity curtains, cofferdams, sheet piling, sediment control barrier, erosion control matting,

21. PURPOSE OF GENERAL PERMIT ACTIVITY (Describe the reason or purpose of the project, see instructions)

The purpose of this project is to replace the existing bridge (S-23-012) that carries North Spencer Road / ST 31 over the Sevenmile River in Spencer, MA. The existing bridge has reached the end of its service life and needs to be replaced. There are holes in the bridge deck covered with steel plates and severe deterioration to the safety curb & rail, as well as structural steel members and existing abutments. Project is expected to begin in 2024.

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
1,043	80	39	Temp	Control of water and streambed restoration
374	35	55	Perm	Excavate 4' of LUW and install revetment
342	30		Perm	Revetment on bank
162	25		Temp	Grading on bank

**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)

N/A

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)

N/A

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)  
 Northern Long Eared Bat

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)  
 None

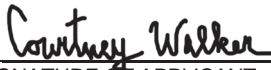
28. For a proposed GP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":  
 N/A

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.  
 Yes, General (BRP WW 11)

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)  
 N/A

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	11/14/23 _____ DATE	_____ SIGNATURE OF AGENT	11/6/23 _____ 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.



Maura Healey, Governor  
Kimberley Driscoll, Lieutenant Governor  
Gina Fiandaca, Secretary & CEO



November 14, 2023

Heidi Davis  
Massachusetts Department of Environmental Protection  
Wetlands Program  
100 Cambridge Street, Suite 900  
Boston, MA 02114

RE: Water Quality Certification  
North Spencer Road (Route 31) over the Seven Mile River (Bridge No. S-23-012)  
Spencer, MA  
MassDOT Project 609179  
Fill Project Certification

Dear Ms. Davis,

The Massachusetts Department of Transportation, Highway Division (MassDOT) is submitting this 401 Water Quality Certification (WQC) application for the replacement of a bridge over the Seven Mile River on North Spencer Road (Route 31) in Spencer, MA under the MassDOT bridge exemption. The bridge replacement is the functional equivalent and in similar alignment to the existing bridge.

The project requires a 401 WQC and authorization under Section 404 as it will temporarily disturb an estimated 1,043 Square Feet (sf) of Waters of the US and permanently disturb an estimated 374 Square Feet of Waters of the US associated with the Seven Mile River. There will be no temporary or permanent impacts to Bordering Vegetated Wetlands (BVW).

A pre-application meeting for this project was held on September 13, 2023 with the Massachusetts Department of Environmental Protection. 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.

If you require any additional information regarding the subject project, please contact me at (857) 262-0757 or by email at [courtney.l.walker@dot.state.ma.us](mailto:courtney.l.walker@dot.state.ma.us).

Sincerely,

A handwritten signature in black ink that reads "Courtney Walker".

Courtney Walker  
Wetlands & Water Resources Coordinator  
MassDOT Highway Division, Environmental Services

Cc: Stephen Soma, MassDOT  
Tyler Lewis, MassDEP  
Ryan Hale, MassDEP

Dan Vasconcelos, US Army Corps of Engineers  
Lauren Vivier, Spencer Conservation Commission





Maura Healey, Governor  
Kimberley Driscoll, Lieutenant Governor  
Gina Fiandaca, Secretary & CEO



November 14, 2023

Dan Vasconcelos  
Regulatory Division  
Department of the Army  
New England District, Corps of Engineers  
696 Virginia Road  
Concord, MA 01742

RE: Pre-Construction Notification Application  
North Spencer Road (Route 31) over the Seven Mile River (Bridge No. S-23-012)  
Spencer, MA  
MassDOT Project 609179

Dear Mr. Vasconcelos,

The Massachusetts Department of Transportation, Highway Division (MassDOT) is submitting this application for Pre-Construction Notification Application for the proposed replacement of the bridge on North Spencer Road (Route 31) over the Seven Mile River in Spencer, MA under the MassDOT bridge exemption.

The project requires a 401 WQC and authorization under Section 404 as it will temporarily disturb an estimated 1,043 Square Feet (sf) of Waters of the US and permanently disturb an estimated 374 Square Feet of Waters of the US associated with the Seven Mile River. There will be no temporary or permanent impacts to Bordering Vegetated Wetlands (BVW).

If you require any additional information regarding the project, please contact me at (857) 262-0757 or by email at [courtney.l.walker@dot.state.ma.us](mailto:courtney.l.walker@dot.state.ma.us).

Sincerely,

A handwritten signature in black ink that reads "Courtney Walker".

Courtney Walker  
Wetlands & Water Resources Coordinator  
MassDOT Highway Division, Environmental Services

Cc: Stephen Soma, MassDOT  
Heidi Davis, MassDEP  
Tyler Lewis, MassDEP  
Ryan Hale, MassDEP  
Lauren Vivier, Spencer Conservation Commission

**401 WATER QUALITY CERTIFICATION  
PROPOSED REPLACEMENT OF BRIDGE NO. S-23-012  
NORTH SPENCER ROAD OVER SEVENMILE RIVER**

**ADDITIONAL INFORMATION FOR APPLICATION FORM BRP WW 11 MINOR FILL PROJECT AND ACOE  
PRECONSTRUCTION NOTIFICATION FORM**

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Appendix A – Figures

Appendix B – Public Notice

Appendix C – Section 106 Documentation

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Appendix E – Specifications / Special Provisions

Appendix F – Site Photos

Appendix G – Project Plans and Details

Appendix H – Wetland Resource Area Analysis Report

Appendix I – Mussel Survey Report & Draft Translocation Plan

Appendix J – O&M and LTPPP

## Executive Summary

Bayside Engineering, Inc. has prepared this Section 401 Water Quality Certification and Preconstruction Notification Permit on behalf of the Massachusetts Department of Transportation for the replacement of a bridge (S-23-012) along North Spencer Road (ST 31) over Sevenmile River in Spencer, Massachusetts. The project will require the reconstruction of approximately 250 feet of roadway on either side of the bridge, as well as approximately 130 feet of Hastings Road due to the proximity of the structure to the intersection (approximately 25' from the Hastings Road centerline), which will add approximately 1,060 square feet of new impervious surface. Replacement of the structure is necessary due to the existing structure's severely deteriorated condition and since it does not meet current statutory capacity requirements as noted in various inspection reports prepared to date. The new structure will be in a similar location to the existing one but will require additional fill of Land Under Water/Waters of the US, which necessitates the inclusion of form BRP WW 11. Since the project will not require more than 100 cubic yards of dredging, a form BRP WW 8 is not required. The project is not subject to the Wetlands Protection Act (WPA) since it falls under the bridge exemption under the Transportation Bond Bill. The proposed roadway will have a similar horizontal and vertical alignment as the original but will be widened to accommodate additional shoulder width.

## Existing Conditions

North Spencer Road is a major collector with a posted speed limit of 40 mph and a current estimated average daily traffic volume of 5,150 vehicles per day. The road crosses Sevenmile River just south of the intersection of North Spencer Road and Hastings Road via Bridge S-23-012. North Spencer Road is generally oriented north to south and is largely paralleled by Sevenmile River, though in the vicinity of the project Sevenmile River generally flows west to east.

Fieldwork was performed to document existing site conditions including Bordering Vegetated Wetland delineation, mean annual high water/ordinary high water, topographic survey, stream bankfull width measurements, stream grade control elements, streambed elements, and streambed material documentation. A topographic survey of the site and surroundings was performed including 200 feet along the road to the north and 200 feet to the south. The stream was surveyed 300 feet upstream and downstream.

The existing bridge was originally built in 1938 and has a single span steel beam superstructure with a reinforced concrete bridge deck covered with an asphalt wearing course. The existing substructure consists of two concrete gravity abutments that terminate with four splayed concrete gravity wingwalls. The structure has a 34'-0" width and a 17'-1" clear span. The low chord of the existing bridge is approximately El. 709.17. The design flood (25-year discharge) for the bridge is at El. 707.22. The Ordinary High Water (OHW) is at El. 703.80. An existing utility line crosses the bridge diagonally from northwest to southeast. No other utilities are known to exist in the project area.

The approach roadway is approximately 23 to 24 feet wide with shoulder widths ranging from approximately 2 to 3 feet on the south side to 5 feet on the north side. There are no sidewalks on the existing structure or in the approaches. The existing roadway slopes from north to south from approximately 3.0% at the north end to less than 1.0% across the bridge and to the south. The existing runoff from the approach roadway and the bridge sheet flows over the roadway and overland to the existing river.

Sevenmile River is a perennial stream designated as a Coldwater Fishery by the Massachusetts Division of Fish and Wildlife and is tributary to the Chicopee River Basin. The headwaters originate in the northern portion of Spencer, Massachusetts from Browning Pond. The river flows south from the pond until it encounters a private dam (Lac Marie Dam) owned by the Cistercian Abbey of Spencer, Inc. and associated spillway approximately 120' upstream of the project bridge. From the dam it continues southeast under the bridge before turning south and continuing towards the southern end of Spencer. The banks in the vicinity of the project are relatively steep, with slopes as steep as 1:1 noted near the southeast wingwall and 1.5:1 near the northwest wingwall. Slopes in other areas are generally 3:1 or flatter. The channel has a bankfull width of 17.08 feet. The tributary watershed upstream of the bridge is approximately 6.3 square miles. The watershed is approximately 75% forested and 6% developed. The land use adjacent to the bridge is deciduous forest.

The existing channel under the bridge includes scattered cobbles on sandy gravel material. Based on the last bridge inspection report dated June 9, 2021, there is minor undercutting to the northeast embankment. Riprap is visible along the channel banks at various locations. Based on field survey, the bridge underclearance is 8.53 feet to the riverbed. Historic plans from 1938 show the underclearance to the riverbed as 10.75 feet. A comparison of these measurements indicates that, due to aggradation, the channel under the bridge has filled in approximately 2.22 feet since 1938. The scour described above is merely an area of less aggradation.

The area at the bridge site is located within a Zone A FEMA floodplain as shown in the Flood Insurance Rate Map (FIRM) community panel #25027C0567E, effective 7/4/2011. It is also designated as NHESP Priority Habitat of Rare Species for freshwater mussel species *Strophitus Undulatus*. A mussel survey, included in Appendix I, was conducted in January 2021, and specimens were identified in the project area. It has been determined that, prior to commencement of construction, translocation to a site downstream can be done anytime from early May to late September. A search of the Massachusetts Cultural Resources Information System (MaCRIS) shows no resources within the project area. Additionally, the project area is not within an Outstanding Resource Water (ORW) or Area of Critical Environmental Concern (ACEC).

The limits of Bordering Vegetated Wetlands (BVW) and Ordinary High Water (OHW) (Flags: A1-A19) were delineated and surveyed (Appendices G & H) in November 2020 to determine to what extent the project would impact these features. As noted within the Wetland Resource Delineation Report included in Appendix H, there is a small swath of scrub-shrub wetland located adjacent to the bank at the northeast end of the dam spillway (Flags: B1-B3). The wetland includes a narrow fringe of common winterberry with an understory of sensitive fern and broom sedge. The areas are in good condition and will not be impacted by the proposed construction activities. Therefore, no wetland mitigation will be required.

## **Proposed Bridge Replacement**

The proposed bridge replacement will consist of a precast concrete three-sided box culvert supported by precast concrete pedestal walls on precast concrete footings with approach slabs. The proposed structure will be constructed in a similar location and alignment as the existing bridge and widened to 37'-1" to accommodate the necessary roadway and shoulder width. The proposed profile will generally mirror the existing profile, to the extent possible. Refer to Appendix G for relevant project plans.

The removal of the existing structure and construction of the proposed replacement will follow the Massachusetts Stream Crossing Standards. The proposed abutments will be set back from the existing channel to provide a horizontal clear span of 22'-4", which is greater than or equal to 1.2 times the bank full width of 17.08'. Streambed and bank restoration associated with the permanent impacts will be required.

The channel directly under the structure will be restored to existing conditions in accordance with the plans and Streambed Restoration Specification (Item 983.36), with the existing streambed elevation being maintained. The bridge replacement is planned to be constructed using a two-stage process and accelerated bridge construction techniques to maintain a single lane of traffic along North Spencer Road during construction. The bottom of the proposed footers will be at El. 695.00. The proposed low chord will be at El. 709.79. A 3-foot-thick layer of riprap will provide protection for the bridge wingwalls. The riprap placed below the high-water line will be infilled and covered by a 12-inch-thick layer of replaced existing streambed material to restore the streambed to existing grade.

## **Construction Sequencing**

The construction sequence will occur as follows:

1. Setup North Spencer Road traffic controls and Hastings Road detour.
2. Perform Mussel Sweep and Translocation
3. Install erosion and sedimentation control measures.
4. Relocate aerial utilities.
5. Install temporary traffic controls and protective shielding for Stage 1.
6. Saw cut and remove deck plates, deck, beams, other components of the existing bridge above the abutments noted for Stage 1 demolition.
7. Install temporary excavation support system.
8. Install resource area protection measures such as the turbidity curtain(s), cofferdam, sheet piling, and other Control of Water features necessary for Stage 1.
9. Excavate and store the top 12" of stream bed material for later restoration.
10. Perform Stage 1 demolition of existing bridge backwalls, abutments, and footings, as well as cutting the existing bridge abutment. All work is to be performed from dewatered work zone areas and any necessary heavy equipment (e.g. crane) shall be located within the roadway.
11. Prepare the subgrade and install Stage 1 of proposed footings, pedestal walls, wingwalls, 3-sided box culvert, and rip-rap slope protection.
12. Install the temporary excavation support system closure and backfill.
13. Install riprap slope protection and Stage 1 bridge components adjacent to the roadway and outside of the resource area (approach slabs, bridge rail, etc.)
14. Perform steps #3 through 12 as necessary for Stage 2 of the existing bridge demolition and installation of the proposed 3-sided box culvert.
15. Remove Control of Water
16. Place stored streambed material.
17. Stabilize all disturbed areas, remove turbidity curtains and other erosion and sedimentation control measures.
18. Remove traffic controls and signage and open up North Spencer Road and Hastings Road to through traffic.

## Wetland/Land Under Water/Waters of the US Impacts

Temporary and permanent Land Under Water / Waters of the US impacts are anticipated due to the installation of control of water features and requirements for proper construction of the proposed bridge. Removal of the existing structure, the proposed structure configuration, and hydraulic performance requirements dictate that channel reshaping and work in the channel is necessary; however, it will be limited to areas between the sheet piles and bridge abutments/wingwalls and most impacts will occur within 20 feet of the proposed structure footprint. The central portion of the existing channel will remain in place and be protected from disturbance by the temporary control of water sheet piles. Additional Land Under Water / Waters of the US will be added due to the increased span. These areas will be filled with existing streambed materials. A 3-foot-thick layer of riprap armoring will be provided at all four wingwalls. The riprap placed below the high-water line will be overlaid with a 12-inch-thick layer of existing streambed material. To further limit impacts, the riprap slopes will be 1.5H:1V.

A summary of the impacts is included below.

RESOURCE AREA	IMPACT
Land Under Water/Waters of US	374± SF (Perm)
Land Under Water/Waters of US	1,043± SF (Temp)
New Land Under Water/Waters of US	310± SF
Bordering Vegetated Wetlands	0± SF
Bank of River	30 LF / 342± SF (Perm)
	25 LF / 162± SF (Temp)
Discharges of Fill Material	39± CY (Temp)
	55± CY (Perm)
Net Discharges of Material	94± CY

The temporary (no loss) impact to Land Under Water / Waters of the US is for work between the temporary Control of Water and the existing bridge abutments, as well as work to construct the proposed bridge, wingwalls, and wingwall riprap revetment. The permanent Land Under Water / Waters of the US impact is for the construction of the riprap revetment. The temporary Bank of River impacts are for areas of proposed grading between the permanent bank impacts and the temporary Control of Water sheet piles. The Permanent Bank of River impacts are for work to install the riprap revetment. Temporary Discharges of Fill Material include the dredging of existing streambed to be replaced after the proposed bridge is constructed. Permanent Discharges of Fill Material include riprap areas adjacent to wingwalls.

All work will be performed in the dry using temporary sheet piles, cofferdams, and dewatering equipment. Large machinery (e.g. crane) will be operated from the upland areas of roadway east and west of the bridge to remove existing bridge components and to perform channel reshaping. The erection of the new structure will occur using machinery operating from the upland areas of roadway and includes end walls/abutments and precast concrete 3-sided box culvert installation via crane. Land Under Water / Waters of the US is added because of the increase in bridge span.

## Sedimentation Control

Appropriate erosion and sedimentation controls and other construction best management practices will be employed during construction to avoid or minimize impacts to the Sevenmile River and adjacent resource areas. Sheet piles and sandbag cofferdams or equivalent will be

utilized to isolate disturbed work areas from areas of the streambed that will remain in place. Turbidity curtains and sediment control barriers will provide supplementary protection outside the limits of the cofferdams. These erosion and sedimentation controls will be placed around the work zone to prevent movement of disturbed material towards nearby resource areas.

Approximately 1 foot of existing streambed material between the sheet piles and the existing bridge abutments will be excavated and replaced to match existing grade as part of the project work. Any debris that has fallen into the stream due to deterioration of the existing bridge will be removed during construction.

## **Dewatering**

Temporary cofferdams and dewatering will be required for the removal of the existing structure and the construction of the proposed channel, bridge pedestal walls, and wingwalls. Control of water during construction will be accomplished using sheet pile cofferdam supplemented with sandbags at the downstream ends. Any sheet pile cofferdam placed adjacent to the foundations of the culvert will be cut off 1 foot below final grade and left in place. All excavation and placement of proposed riprap and streambed armoring up to or above the OHW elevation will be conducted within the cofferdams. All sediment retained by the cofferdams shall be settled and/or removed prior to the removal of the cofferdams.

## **Stormwater Management & Massachusetts Stormwater Standards**

The proposed bridge/roadway will have approximately the same footprint as the existing bridge/roadway. The existing roadway is slightly elevated above or generally level with the adjacent terrain. The proposed roadway and bridge are slightly wider than existing conditions and taper back to meet existing at the project limits. Additional width is required to meet bridge design criteria and will keep runoff out of the travel area in the vicinity of and over the bridge while minimizing the overall project footprint. The project includes approximately 152 feet of proposed vertical curb along the bridge as required for the proposed bridge rail and bridge rail transitions as well as approximately 140 feet of asphalt berm to replace and extend the existing asphalt berm along the northeast quadrant of the nearby intersection. As a result of the added width and other incidental roadway improvements, approximately 1,060± SF of additional impervious will be added. Both existing and proposed impervious areas will be pretreated by the existing Vegetated Filter Strips, which will be reinforced with native seeding along the length of the project.

The project site does not generally have curbs except concrete bridge curb and approximately 380 feet of low reveal asphalt (approximately 2") berm along the eastern side of North Spencer Road starting at the intersection with Hastings Road. Existing runoff sheet flows over the roadway, down the roadway embankments, and overland to the river. There are no existing or proposed stormwater conveyance facilities. In both existing and proposed conditions, runoff travels through densely vegetated areas between the edge of the roadway and the Sevenmile River. These vegetated areas generally qualify as a Vegetated Filter Strips (VFS) since it extends for a minimum of 25' and is less than or equal to 6% slope in all areas except those closest to the bridge structure, where the slopes exceed 6% along the wingwalls and banks. The VFS will be reinforced with native seeding in proposed loam areas and will serve to provide pretreatment in proposed conditions as well.

The bridge replacement project is subject to the Stormwater Standards. All the work occurs within existing developed areas, and existing runoff characteristics will broadly be maintained. A completed stormwater checklist is included.

1. *No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

There are no proposed stormwater conveyances in the project vicinity. Runoff from the project site sheets flows overland via VFS to the river. As there are no new untreated stormwater conveyances discharging to wetlands or waters of the Commonwealth, Standard #1 is fully met.

2. *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 as defined in 310 CMR 10.04.*

Approximately 1,060± sf of impervious coverage will be added due to minor widening needed to accommodate the width of the bridge. As such, stormwater runoff peak discharge rates from the proposed development will slightly exceed pre-development rates as summarized in the table below. For the calculations, a time of concentration of 10 minutes was assumed for both existing and proposed conditions. The project is proposing to reinforce the existing Vegetated Filter Strips (VFS) by specifying native seeding along proposed loam areas upstream of the existing VFS which are currently either regular grass or unvegetated, so some increase in the time of concentration can be reasonably expected as the vegetation becomes more established, which should reduce the already minimal increase in rates. Further, per the Hydraulic Study Report prepared by MassDOT in April 2023, the peak rates to the bridge (summarized below) dwarf those from the project area and the increases are negligible relative to these peaks. Existing conditions limit the available space for a proposed rate control facility, and it would not be practical to create space via tree clearing for the low calculated increases. Thus, Standard #2 is met to the maximum extent practicable.

<b>Storm Event</b>	<b>Ex Peak Rate (CFS)</b>	<b>Pr Peak Rate (CFS)</b>	<b>Ex Regional Peak to Bridge (CFS)</b>
<b>2-yr/24-hr</b>	0.90	0.97	166
<b>10-yr/24-hr</b>	1.41	1.52	376
<b>100-yr/24-hr</b>	2.22	2.38	840

3. *Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best 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 type. 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.*

Approximately 1,060± sf of impervious coverage will be added due to minor widening needed to accommodate the width of the bridge. The recharge volume for that increase is approximately 88± CF for 1-inch of runoff treatment. A linear infiltration practice was investigated to treat an equivalent volume, however, since this additional coverage is well distributed across the site



and the impacts will be mitigated by the reinforced existing VFS, it was not proposed as part of the design. As discussed above, existing conditions limit the available space for proposed stormwater management facilities, and creating more space would involve disrupting dense forest. Thus, Standard #3 is met to the maximum extent practicable.

4. *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.*

While there is an overall increase to impervious, the new impervious areas will be evenly distributed throughout the drainage area to the river and contained to the shoulders of the existing roadways, which drain via sheet flow to existing VFS. The existing VFS will be reinforced with native seeding on proposed loam areas. The existing roadways and vehicular travel they facilitate are the primary contributor to pollutants in the project area and none of the proposed work itself will lead to an increase in pollutant loads. Improvements to the longitudinal profile and cross slopes of the existing roadways will help ensure runoff reaches the VFS prior to reaching the river, which will mitigate some of the TSS load. Thus, Standard #4 is met to the maximum extent practicable.

5. *For land uses with higher potential pollutant loads, 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 land uses with higher potential pollutant loads 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 land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated there under at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.*

This project is not a land use associated with higher potential pollutant loads so Standard #5 is not applicable.

6. *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 "storm water 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.*

The project is not located within a Zone II or Interim Wellhead Protection Zone, Outstanding Resource Water, or Special Resource Water; however, the Sevenmile River is designated as a Coldwater Fishery, which is considered a critical area. The project will meet the pretreatment component of Standard #6 to the maximum extent practicable by utilizing and reinforcing the existing Vegetated Filter Strip which is specifically noted in the Massachusetts Stormwater Handbook as being usable near Coldwater fisheries. As noted in the discussion of Standards #2 and 3, existing site constraints make development of additional structural BMPs, such as a leaching basin, impractical considering the approximately 1,060 SF of additional impervious surface is a minor increase relative to the tributary area to the bridge, per the Hydraulic Study Report prepared by MassDOT.

- 7. 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.*

This project is considered a redevelopment project. Standard #1 is fully met. Standards #2 through 4 and 6 are met to the maximum extent practicable. Standard #5 does not apply. Standards #8-10 are fully met and are outlined below.

- 8. 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 proposed design includes erosion and sediment controls to minimize the potential for sedimentation in down-gradient resource areas as outlined in this document and the construction plans.

- 9. A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

The roadway is owned by MassDOT, however there are no specific existing or proposed stormwater management systems in the project area that require an Operation and Maintenance Plan. The bridge itself is owned by the Municipality according to the MassDOT Open Data Portal. An Operation and Maintenance Plan is included in Appendix J.

- 10. All illicit discharges to the stormwater management system are prohibited.*

The design plans submitted with this report have been designed in full compliance with Standard 10. The project area does not have any known illicit discharges. The Long-Term

Pollution Prevention Plan (LTPPP) includes measures to prevent illicit discharges. Appendix J includes the LTPPP for this project.

### Fisheries and Wildlife/Natural Heritage Endangered Species/Vernal Pools

The Sevenmile River is not designated as an Outstanding Resource Water. The project occurs entirely within NHESP mapped Estimated and Priority habitat. The area is not located within an Area of Critical Environmental Concern or Potential or Certified Vernal Pools. No specific fish species have been identified as part of this project within the Sevenmile River via field investigations or available online mapping.

According to the U.S. Fish and Wildlife Service’s (USFWS) Information for Planning and Consultation (IPaC) online mapping tool, the Northern Long Eared Bat (NLEB)(Myotis Septentrionalis) may be found within the project limits. Coordination has been undertaken with the USFWS and it has been determined that the project will have no effect on the species. Refer to Appendix D for more information.

### Massachusetts Stream Crossing Standards

The following table summarizes the project’s compliance with the Massachusetts Stream Crossing Standards. A more detailed discussion of each standard is included thereafter.

Standard	Proposed	Compliant
<b>1 – Spans that preserve natural channel preferred</b>	3-sided box	Y
<b>2 – Culvert Embedment (Pedestal Walls and Footers for Proposed Project)</b>	6.15 FT below stream bed	Y
<b>3 – Span is minimum of 1.2x bankfull width</b>	22’-4” span	Y
<b>4 – Natural bottom substrate within structure</b>	Natural stream	Y
<b>5 – Water depth &amp; velocity comparable to existing</b>	Comparable per 4/24/23 MassDOT Hydraulic Study Report	Y
<b>6 – Openness &gt; 0.82 feet</b>	193.7 SF/ 45.1 FT = 4.29 FT	Y
<b>7 – Match existing horizontal profile for constructed banks</b>	1:1.5 MAX	Y

- 1. Spans (bridges, 3-sided box culverts, open-bottom culverts, or arches) that preserve the natural stream channel are strongly preferred.*

Standard #1 has been met. The project proposes a pre-cast concrete 3-sided box culvert set on pre-cast concrete footers and pedestal walls.

- 2. If a culvert, then it should be embedded a minimum of 2 feet for all culverts, minimum of 2 feet and at least 25% for round pipe culverts, and when embedment material includes elements > 15 inches in diameter, embedment depths should be at least twice the  $D_{84}$  of the embedment material.*

Standard #2 has been met. The footers and pedestal walls that will support the proposed box culvert will be embedded to a depth of approximately 6.15’ below the streambed

elevation (footer bottom elevation = 695.00, channel bottom elevation = approximately 701.15 per MassDOT Hydraulic Study Report, dated April 24, 2023).

3. *Spans channel width (a minimum of 1.2 times the bankfull width)*

Standard #3 has been met. The bankfull width is approximately 17'-1", and the proposed span is 22'-4", which is approximately 1.3 times the bankfull width.

4. *Natural bottom substrate within the structure*

Standard #4 has been met. The project proposes to remove and storm the top 12" of existing streambed material that will be relaid once work within the stream is completed.

5. *Designed with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows.*

Standard #5 has been met. Per the Hydraulic Study Report prepared by MassDOT, last revised April 2023, the water depth and velocity in proposed conditions are comparable to existing conditions.

6. *Openness > 0.82 feet (0.25 meters)*

Standard #6 has been met since the openness ratio is 4.29 feet, which is greater than 0.82 feet.

7. *Banks should be present on each side of the stream matching the horizontal profile of the existing stream and banks.*

A small portion of the banks will need to be reconstructed in the vicinity of the proposed wingwalls. These areas will be constructed with rip-rap and have a maximum slope of 1:1.5, which is consistent with existing conditions in these areas and meets the Stream Crossing Standards. Therefore, Standard #7 has been met.

## **Alternatives Analysis**

The existing bridge is structurally deficient. The bridge has deteriorated to a point of action with respect to maintenance. Three general alternatives have been considered: no-build, repair of the existing structure, or replacement of the entire structure.

### Alternative 1 – No Build

The No-Build alternative would cost nothing and have no environmental impacts; however, it is not viable because the deficiencies in the deck and structure are too severe, and the bridge does not meet current AASHTO truck loading standards. Inspection reports prepared to date have noted severely deteriorated concrete supporting the bridge rails, spalled, rusting reinforcing steel, and section loss. Several of the bridge rail posts and anchor bolts are undermined due to concrete deterioration. Concrete disintegration, cracking, and efflorescence were noted on the concrete abutments and wingalls. These deficiencies necessitate further action to maintain safe crossing at the bridge.

### Alternative 2 – Repair of the Existing Structure

Repairs to the existing structure have been performed several times in recent years to keep the bridge open to two-way traffic, including emergency deck repairs via placing steel plates over deck holes in the northbound wheel path (2014) and the southbound wheel path (2017). Further repair options were considered in the Bridge Alternatives Analysis prepared by Gill Engineering Associates, Inc. in March 2018, but this alternative was not chosen because it would not bring the bridge in line with current statutory requirements, required ongoing maintenance, and would not appreciably extend the lifespan of the existing bridge due to the on-going deterioration of the beams and substructure. The ongoing maintenance and eventual need of replacement means this alternative would cost more in the long run than replacement now. Further, this would only delay the environmental impacts associated with replacement.

### Alternative 3 – Replacement of the Existing Structure

This is the chosen alternative. The proposed bridge will meet current statutory capacity requirements and the Massachusetts Stream Crossing standards while minimizing the extent of impacts to resource areas and the public. An accelerated construction schedule has been developed to minimize the duration of these impacts as well.

Alternatives to the proposed structure that varied dimensionally were investigated within the previously mentioned Bridge Alternatives Analysis. These alternatives do not meet the stream crossing standards in a way that is less disruptive to resource areas or the public since they are generally wider to provide additional space for sidewalk/bike paths connections. The increased spans would cost more and potentially result in encroachment into adjacent wetland areas, which are currently undisturbed by the project.

## **Summary/Conclusion**

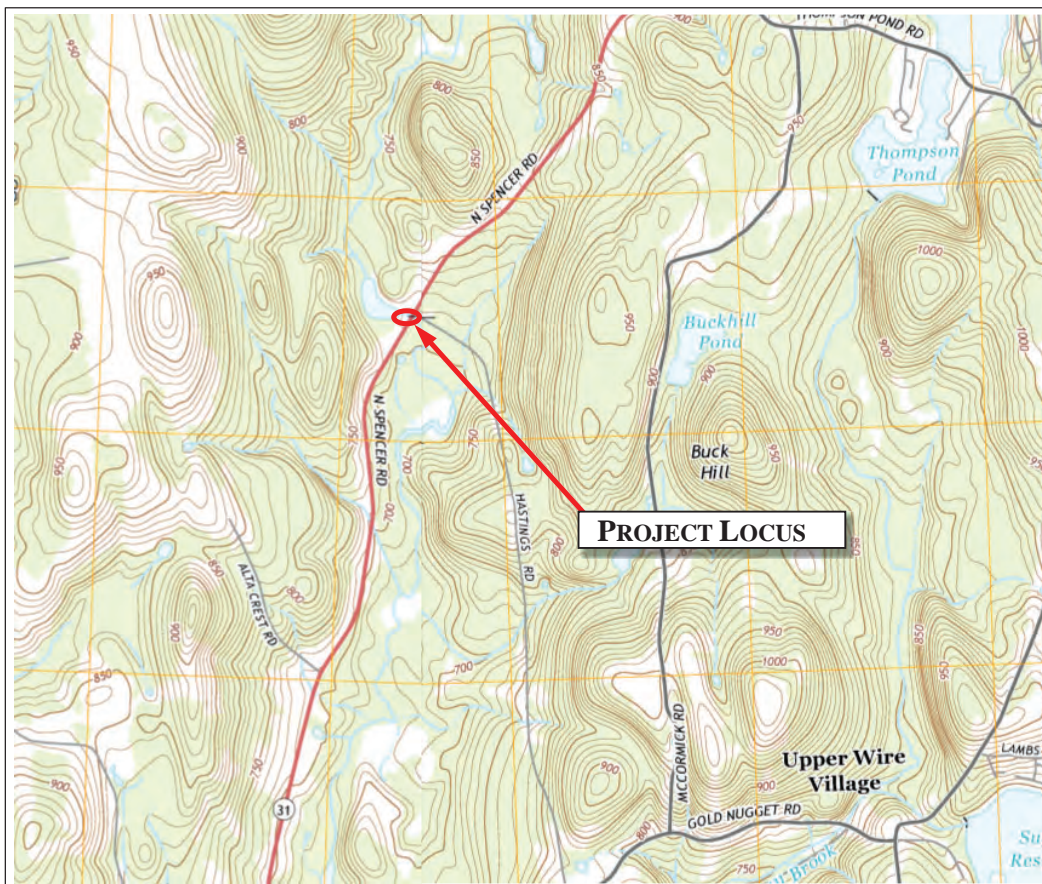
The existing bridge is structurally deficient and must be replaced. The proposed replacement project has been designed in a way that allows for this replacement while minimizing disruption to resource areas and providing stormwater management via a reinforced Vegetated Filter Strip. The applicant respectfully requests that MassDEP 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.

## **APPENDIX A: FIGURES**

- Locus Map
- Environmental Resources
  - NHESP Data, Wetlands, Regulated Areas, Outstanding Resource Waters
- Flood Hazard Zones

# PROJECT LOCUS MAP

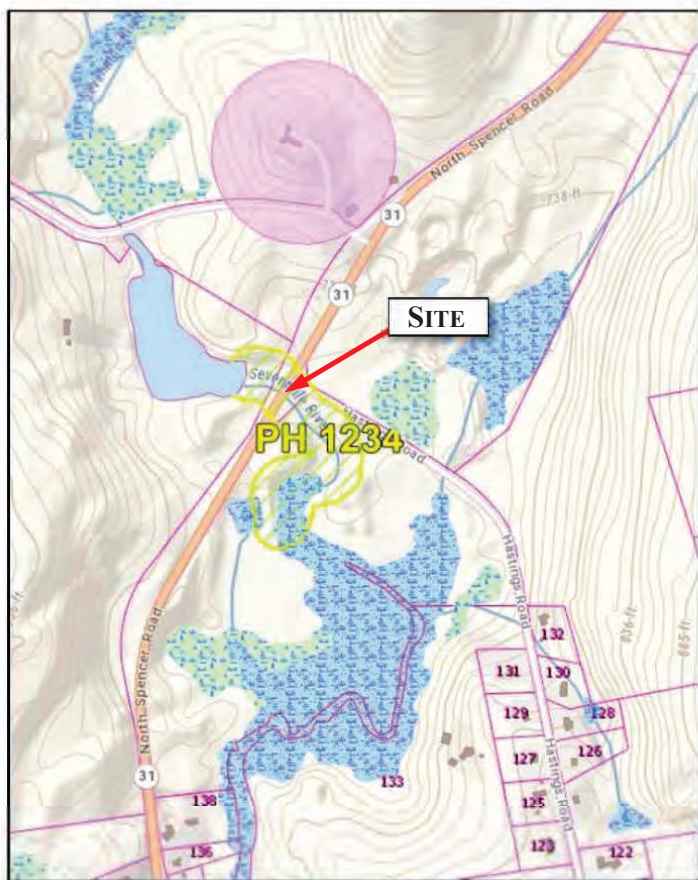
## BRIDGE S-23-012 REPLACEMENT NORTH SPENCER ROAD OVER SEVEN MILE RIVER SPENCER, MA



Reference: USGS TopoQuad – North Brookfield and Paxton Quadrangles





# ENVIRONMENTAL RESOURCES

## BRIDGE S-23-012 REPLACEMENT NORTH SPENCER ROAD OVER SEVEN MILE RIVER SPENCER, MA











Data Source: MassGIS OLIVER Data Viewer



### NHESP Data

-  NHESP Priority Habitat of Rare Species
-  NHESP Estimated Habitat of Rare Wildlife
-  Certified Vernal Pool
-  Potential Vernal Pool




### Wetlands

-  Marsh/Bog
-  Wooded Marsh
-  Cranberry Bog
-  Salt Marsh
-  Open Water
-  Reservoir w/PWSID
-  Tidal Flats
-  Beach/Dune

### Regulated Areas

-  Zone II Well Area
-  IWPA

### Outstanding Resource Waters (ORW)

-  ORW for ACEC
-  PWS Contributor
-  ORW for PWS and Other






# FLOOD HAZARD ZONES

## BRIDGE S-23-012 REPLACEMENT NORTH SPENCER ROAD OVER SEVEN MILE RIVER SPENCER, MA



### Legend

-  1% Annual Chance Flood (100-year)
-  0.2% Annual Chance Flood (500-year)
-  Regulatory Floodway



600 Unicorn Park Drive  
Woburn, MA 01801

781-932-3201  
[www.baysideengineering.com](http://www.baysideengineering.com)

Attachment 4

**APPENDIX B: 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, notice is given of a 401 Water Quality Certification application for the replacement of Bridge #S-23-012, on North Spencer Road (Route 31) over the Seven Mile River in the Town of Spencer, Massachusetts by the Massachusetts Department of Transportation – Highway Division, Ten Park Plaza, Room 7360, Boston, MA 02116. The main objective of this project is to replace a structurally deficient bridge with a new bridge on similar alignment and same functional equivalent. There will also be some minor roadway widening to accommodate additional shoulder width. 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](mailto:courtney.l.walker@dot.state.ma.us). Written comments should be sent to Heidi Davis, MassDEP Wetlands Program, 100 Cambridge Street, Suite 900, Boston, MA 02114 or [heidi.davis@mass.gov](mailto:heidi.davis@mass.gov) within twenty-one 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.

## **APPENDIX C: SECTION 106 DOCUMENTATION**



# CULTURAL RESOURCES PROJECT RECORD

City/Town:	Spencer	Project #	609179	Date Cleared	6/16/2023
Project Name	Bridge Replacement, Br. S-23-012, North Spencer Road over Seven Mile River	Date Filed	6/16/2023	Finding Under Review	<input type="checkbox"/>
Project Type:	Bridge Replacement	FHWA to MHC		Early Coord. Letter Sent:	<input checked="" type="checkbox"/>
Review:	Section 106 (PA)	Comment Received:	<input type="checkbox"/> MHC <input type="checkbox"/> LHC	Reviewer:	KJ
Finding:	Stip VB - No historic properties affected	Consultant			
Comments	PNFs sent to THPOs and BUAR 6/20/23				

Determination based on:  Scope of Work  Plans  Inventory  Site Visit  Archaeological Survey  
*Attach appropriate documentation for checked items*

## Projects Requiring No Massachusetts SHPO Review

### Programmatic Agreement, Appendix 1 (check all that apply) :

- |   |   |
|---|---|
| <input type="checkbox"/> 1) Interstate bridge or roadway projects                         | <input type="checkbox"/> 16) Bridge (less than 20' span)                  |
| <input type="checkbox"/> 2) Resurfacing, repair existing roadways                         | * <input type="checkbox"/> 17) Highway safety improvement                 |
| * <input type="checkbox"/> 3) Reconstruction on existing roadway                          | <input type="checkbox"/> 18) Drainage system element                      |
| * <input type="checkbox"/> 4) Roadway geometrics, intersections                           | * <input type="checkbox"/> 19) Traffic signal, safety improvement         |
| * <input type="checkbox"/> 5) Curbs and sidewalks   | * <input type="checkbox"/> 20) Intelligent Transportation System project  |
| <input type="checkbox"/> 6) Pavement markings, rumble strips, etc                         | <input type="checkbox"/> 21) Rest area, maintenance facility              |
| <input type="checkbox"/> 7) Curbs, sidewalks (MAAB, ADA)                                  | * <input type="checkbox"/> 22) Bicycle, pedestrian lane, path or facility |
| * <input type="checkbox"/> 8) Removal of trees  | <input type="checkbox"/> 23) Lighting system                              |
| <input type="checkbox"/> 9) Landscaping   | <input type="checkbox"/> 24) Sign   |
| <input type="checkbox"/> 10) Utilities  | <input type="checkbox"/> 25) Hazardous waste                              |
| <input type="checkbox"/> 11) Railroad crossing  | <input type="checkbox"/> 26) Highway fencing                              |
| <input type="checkbox"/> 12) Stream stabilization and restoration                         | <input type="checkbox"/> 27) Emergency repair                             |
| <input type="checkbox"/> 13) Wetland mitigation area                                      | <input type="checkbox"/> 28) Erosion control                              |
| * <input type="checkbox"/> 14) Bridge (NR "Not Eligible" or "Conditionally Not Eligible") | <input type="checkbox"/> 29) Noise barrier                                |
| * <input type="checkbox"/> 15) Bridge (concrete slab post 1900, steel stringer)           | * National Register eligibility evaluation required                       |

-OR-

### No Historic Properties Affected Programmatic Agreement Stipulation V.B. (check one):

- No NR listed or -eligible properties within Area of Potential Effect  
 No effect on National Register listed or -eligible properties

Reviewer's Initials: *KJ JMAH*



## CULTURAL RESOURCES PROJECT RECORD

### Summary of MassDOT Highway Division Finding (Appendix 1 and Section V.B. Projects only)

The Massachusetts Department of Transportation (MassDOT) proposes to replace Bridge S-23-012, which carries North Spencer Road over Seven Mile River in Spencer. Bridge S-23-012, constructed in 1938, consists of a single-span steel stringer superstructure supported on reinforced concrete abutments with wingwalls. The bridge has galvanized steel W-beam railings.

The proposed work will include full replacement of the bridge on existing alignment with a structure 6' wider than existing. The proposed bridge and approach roadway cross-section will include 12'-wide travel lanes in either direction, with a 5'-wide shoulder on the easterly side of the bridge and a 7' 9"-wide shoulder on the westerly side. The proposed new bridge will consist of a precast concrete three-sided rigid frame superstructure supported by precast concrete pedestal wall abutments on reinforced concrete spread footings. The bridge will have painted steel S3-TL4 railings. Construction of the replacement bridge will be phased, with one-lane open for alternating traffic. The road will be closed for short durations, as needed, with traffic detoured toward the east on Hastings Road and Cooney Road.

Roadway reconstruction along the bridge approaches will extend approximately 100' to the south and 160' to the north of the bridge, encompassing a total project length of 380 feet. Roadway reconstruction will also extend approximately 100' to the east along Hastings Road. Proposed work will include full-depth pavement reconstruction along the existing bridge approaches and along Hastings Road; minor roadway widening along the bridge approaches, to provide a consistent cross-section; grading roadside slopes along the bridge approaches; replacement and extension of guardrail along the bridge approaches, including guardrail installation at the southerly corner of the intersection with Route 31; installation of temporary erosion and sedimentation controls, and related work.

Review of the National Register of Historic Places revealed no National Register-listed districts or individual properties within or adjacent to the project area. Review of the Inventory of Historic and Archaeological Assets also revealed no inventoried properties or areas within or adjacent to the project area. A late 19th century dam is located 100 feet upstream of the bridge, but will not be effected by proposed work. Bridge S-23-012 was reviewed by Kurt Jergensen, Historic Bridge Specialist, and determined to be ineligible for listing in the National Register. Though the bridge has some minor historical interest as part of the large group of bridges built to replace structures washed out during the 1938 Hurricane, it is a typical mid-20th century steel stringer design with no architectural character and standard engineering details.

A review of the MHC's archaeological maps in MACRIS revealed no recorded sites in the vicinity of the project area. There are no recorded pre-Contact sites located within two miles of the bridge site. The nearest pre-Contact sites are: 19-WR-859 (Structure 447 Find Spot), a find spot located approximately 2.0 miles to the northeast; 19-WR-46, located approximately 2.2 miles to the south; 19-WR-427 (Spencer Road Site), a Late Archaic period workshop site located approximately 2.3 miles to the southwest.

It is the opinion of the MassDOT Archaeologist that low sensitivity can be ascribed to the project's direct area of potential effect based on the impacts of past bridge and roadway construction and unfavorable conditions (slope and wetlands). Soil borings indicate the roadway approaches to the bridge were constructed on 8 to 10-ft. of fill to carry the crossing over the river. A review of historic aerials and maps indicates a temporary roadway and bridge crossing was utilized easterly of the existing crossing during the 1938 bridge construction project. The majority of the current project work, including the bridge construction and road work, will be confined to the existing bridge alignment, roadway footprint and established roadway slopes.

Based on the nature and location of the proposed work, with no National Register-listed or -eligible resources present within or adjacent to the project area, the project meets the exemption requirements under Stipulation V.B of the Section 106 Programmatic Agreement and no further review of the proposed project is necessary.

Reviewer's Initials: \_\_\_\_\_

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:** Replacement of Bridge S-23-012 (MassDOT 609179)  
**Location /Address:** State Route 31 (North Spencer Road) over Sevenmile River  
**City/Town:** Spencer  
**Project Proponent**  
**Name:** Massachusetts Department of Transportation  
**Address:** 10 Park Plaza  
**City/Town/Zip/Telephone:** Boston, MA 02116 / T: 207-590-4999

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

<u>Agency Name</u>	<u>Type of License or funding (specify)</u>
FHWA	Federal Aid funding
US Army Corps of Engineers	Section 404 permit

**Project Description (narrative):**

The Massachusetts Department of Transportation (MassDOT) proposes to replace Bridge S-23-012, which carries State Route 31 over Sevenmile River in Spencer. Bridge S-23-012, constructed in 1938, consists of a single-span steel stringer superstructure supported on reinforced concrete abutments. The bridge has galvanized steel W-beam railings.

The proposed work will include full replacement of the bridge on existing alignment with a structure 6' wider than existing. The proposed bridge and approach roadway cross-section will include 12'-wide travel lanes in either direction, with a 5'-wide shoulder on the easterly side of the bridge and a 7' 9"-wide shoulder on the westerly side. The proposed new bridge will consist of a precast concrete three-sided rigid frame superstructure supported by precast concrete pedestal wall abutments on reinforced concrete spread footings. The bridge will have painted steel S3-TL4 railings. Construction of the replacement bridge will be phased, with one-lane open for alternating traffic. The road will be closed for short durations, as needed, with traffic detoured toward the east on Hastings Road and Cooney Road.

Roadway reconstruction along the bridge approaches will extend approximately 100' to the south and 160' to the north of the bridge, encompassing a total project length of 380 feet. Roadway reconstruction will also extend approximately 100' to the east along Hastings Road. Proposed work will include full-depth pavement reconstruction along the existing bridge approaches and along Hastings Road; minor roadway widening along the bridge approaches, to provide a consistent cross-section; grading roadside slopes along the bridge approaches; replacement and extension of guardrail along the bridge approaches, including guardrail installation at the southerly corner of the intersection with Route 31; installation of temporary erosion and sedimentation controls, and related work.

**950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH**

**APPENDIX A (continued)**

**Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.**

Bridge S-23-012 will be removed and replaced. The bridge was reviewed by Kurt Jergensen, Historic Bridge Specialist, and determined to be ineligible for listing in the National Register. Though Bridge S-23-012 was built as part of the large group designed to replace structures washed out during the 1938 Hurricane, it is a typical mid-20th century steel stringer design with no architectural character and standard engineering details.

**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).**

Bridge S-23-012 will be removed and replaced on the same alignment with a wider structure. The approach roadway cross-section will be widened by up to 7 feet, mostly along the southwesterly quadrant of the bridge.

**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.**

Review of the National Register of Historic Places revealed no National Register-listed districts or individual properties within or adjacent to the project area. Review of the Inventory of Historic and Archaeological Assets also revealed no inventoried properties or areas within or adjacent to the project area. A late 19<sup>th</sup> century dam is located 100 feet upstream of the bridge, but will not be effected by proposed work.

A review of the MHC's archaeological maps in MACRIS revealed no recorded sites in the vicinity of the project area. There are no recorded pre-Contact sites located within two miles of the bridge site. The nearest pre-Contact sites are: 19-WR-859 (Structure 447 Find Spot), a find spot located approximately 2.0 miles to the northeast; 19-WR-46, located approximately 2.2 miles to the south; 19-WR-427 (Spencer Road Site), a Late Archaic period workshop site located approximately 2.3 miles to the southwest.

It is the opinion of the MassDOT Archaeologist that low sensitivity can be ascribed to the project's direct area of potential effect based on the impacts of past bridge and roadway construction and unfavorable conditions (slope and wetlands). Soil borings indicate the roadway approaches to the bridge were constructed on 8 to 10-ft. of fill to carry the crossing over the river. The majority of the project work, including the bridge construction and road work, will be confined to the existing bridge alignment, roadway footprint and established roadway slopes.

**What is the total acreage of the project area?**

Woodland	<u>    &lt;1    </u>	acres	Productive Resources:		
Wetland	<u>         </u>	acres	Agriculture	<u>         </u>	acres
Floodplain	<u>    &lt;1    </u>	acres	Forestry	<u>         </u>	acres
Open Space	<u>         </u>	acres	Mining/Extraction	<u>         </u>	acres
Developed	<u>         </u>	acres	Total Project Acreage	<u>    &lt;2    </u>	acres

**What is the acreage of the proposed new construction?**

    <1     acres

**What is the present land use of the project area?**



**950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH**

**APPENDIX A (continued)**

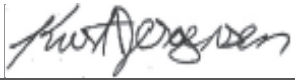
The Project area is situated amid hilly, wooded terrain, with a dam and small pond located upstream and wetlands downstream of the bridge.

**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.

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||

**Signature of person submitting this form:**  **Date:** 7/12/2023

**Name:** Kurt Jergensen

**Address:** 10 Park Plaza

**City/Town/Zip:** Boston, MA 02116

**Telephone:** 207-590-4999

**REGULATORY AUTHORITY**

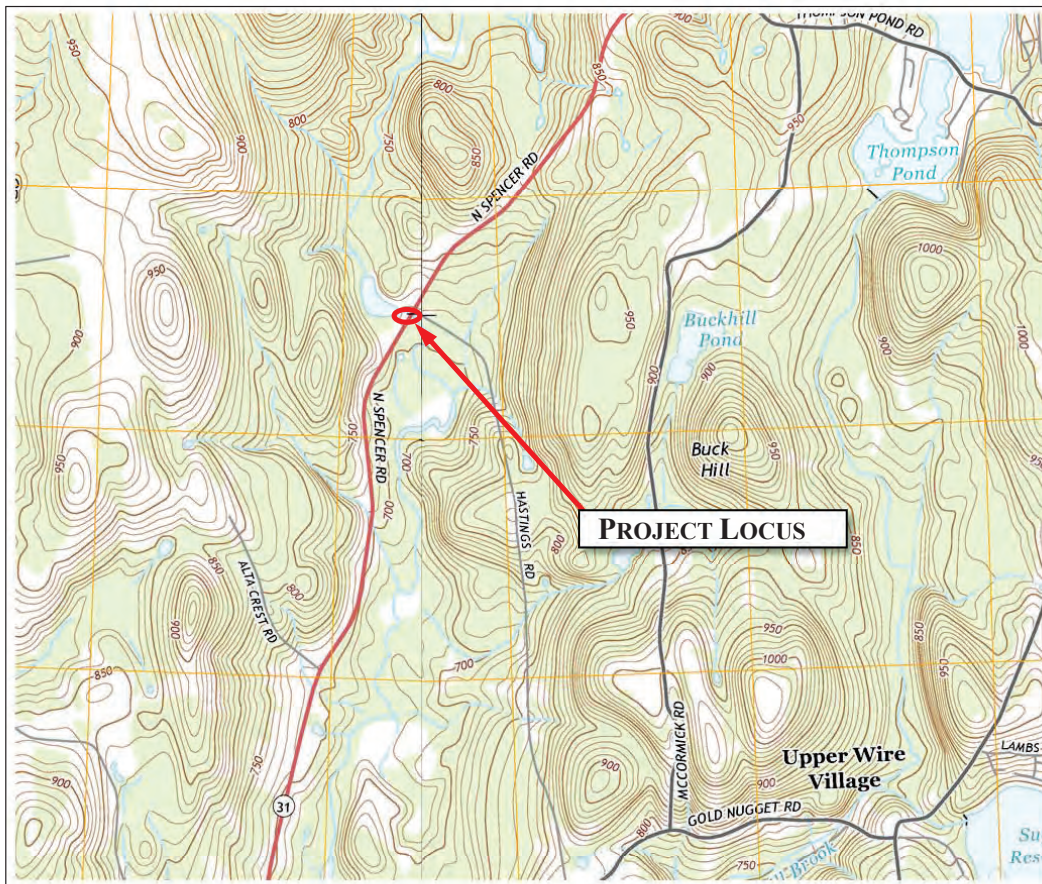
**950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.**

**7/1/93**

**950 CMR - 276**

# PROJECT LOCUS MAP

## BRIDGE S-23-012 REPLACEMENT NORTH SPENCER ROAD OVER SEVEN MILE RIVER SPENCER, MA



Reference: USGS TopoQuad – North Brookfield and Paxton Quadrangles

**Jergensen, Kurt E. (DOT)**

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**From:** postmaster@MassMail.State.MA.US  
**To:** Bettina Washington; tcrm2@wampanoagtribe-nsn.gov  
**Sent:** Thursday, July 13, 2023 9:31 AM  
**Subject:** Relayed: Spencer, Br. S-23-012 replacement (MassDOT #609179)

**Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:**

[Bettina Washington \(thpo@wampanoagtribe-nsn.gov\)](mailto:thpo@wampanoagtribe-nsn.gov)

[tcrm2@wampanoagtribe-nsn.gov \(tcrm2@wampanoagtribe-nsn.gov\)](mailto:tcrm2@wampanoagtribe-nsn.gov)

Subject: Spencer, Br. S-23-012 replacement (MassDOT #609179)



Spencer, Br.  
S-23-012 replac...

**Jergensen, Kurt E. (DOT)**

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**From:** Jergensen, Kurt E. (DOT)  
**Sent:** Thursday, July 13, 2023 9:30 AM  
**To:** Bettina Washington  
**Cc:** tcrm2@wampanoagtribe-nsn.gov; Harwood, Jameson (DOT)  
**Subject:** Spencer, Br. S-23-012 replacement (MassDOT #609179)  
**Attachments:** 001 - 609179 - Highway Design Plans.pdf; 001 - 609179 - 1st Structural Bridge Plans.pdf; Spencer PNF.doc; Locus map.pdf

<b>Tracking:</b>	<b>Recipient</b>	<b>Delivery</b>
	Bettina Washington	
	tcrm2@wampanoagtribe-nsn.gov	
	Harwood, Jameson (DOT)	Delivered: 7/13/2023 9:31 AM

Dear Ms. Washington,

MassDOT is submitting the enclosed information regarding the above-noted project to the Wampanoag Tribe of Gay Head (Aquinnah) to meet the Section 106 consultation requirements of 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 Lavalley, 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](mailto:Jameson.Harwood@state.ma.us).

Thank you very much.

Kurt Jergensen  
Historic Bridge Specialist  
Environmental Services  
MassDOT, Highway Division  
Ten Park Plaza, Boston, MA 02116  
Cell: 207-590-4999

**Jergensen, Kurt E. (DOT)**

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**From:** postmaster@MassMail.State.MA.US  
**To:** 106Review@mwtribe-nsn.gov; David Weeden  
**Sent:** Thursday, July 13, 2023 9:27 AM  
**Subject:** Relayed: Spencer, Br. S-23-012 replacement (MassDOT #609179)

**Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:**

[106Review@mwtribe-nsn.gov](mailto:106Review@mwtribe-nsn.gov) ([106Review@mwtribe-nsn.gov](mailto:106Review@mwtribe-nsn.gov))

[David Weeden](mailto:David.Weeden@mwtribe-nsn.gov) ([David.Weeden@mwtribe-nsn.gov](mailto:David.Weeden@mwtribe-nsn.gov))

Subject: Spencer, Br. S-23-012 replacement (MassDOT #609179)



Spencer, Br.  
S-23-012 replac...

**Jergensen, Kurt E. (DOT)**

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**From:** Jergensen, Kurt E. (DOT)  
**Sent:** Thursday, July 13, 2023 9:27 AM  
**To:** David Weeden  
**Cc:** 106Review@mwtribe-nsn.gov; Harwood, Jameson (DOT)  
**Subject:** Spencer, Br. S-23-012 replacement (MassDOT #609179)  
**Attachments:** 001 - 609179 - Highway Design Plans.pdf; 001 - 609179 - 1st Structural Bridge Plans.pdf; Spencer PNF.doc; Locus map.pdf

<b>Tracking:</b>	<b>Recipient</b>	<b>Delivery</b>
	David Weeden	
	106Review@mwtribe-nsn.gov	
	Harwood, Jameson (DOT)	Delivered: 7/13/2023 9:27 AM

Dear Mr. Weeden,

MassDOT is submitting the enclosed information regarding the above-noted project to the Mashpee Wampanoag Tribe to meet the Section 106 consultation requirements of 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 Lavalley, 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](mailto:Jameson.Harwood@state.ma.us).

Thank you very much.

Kurt Jergensen  
Historic Bridge Specialist  
Environmental Services  
MassDOT, Highway Division  
Ten Park Plaza, Boston, MA 02116  
Cell: 207-590-4999

**Jergensen, Kurt E. (DOT)**

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**From:** postmaster@MassMail.State.MA.US  
**To:** Tashtesook@aol.com  
**Sent:** Thursday, July 13, 2023 9:25 AM  
**Subject:** Relayed: Spencer, Br. S-23-012 replacement (MassDOT #609179)

**Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:**

[Tashtesook@aol.com \(tashtesook@aol.com\)](mailto:Tashtesook@aol.com)

Subject: Spencer, Br. S-23-012 replacement (MassDOT #609179)



Spencer, Br.  
S-23-012 replac...

**Jergensen, Kurt E. (DOT)**

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**From:** Jergensen, Kurt E. (DOT)  
**Sent:** Thursday, July 13, 2023 9:25 AM  
**To:** Tashtesook@aol.com  
**Cc:** Harwood, Jameson (DOT)  
**Subject:** Spencer, Br. S-23-012 replacement (MassDOT #609179)  
**Attachments:** 001 - 609179 - Highway Design Plans.pdf; 001 - 609179 - 1st Structural Bridge Plans.pdf; Spencer PNF.doc; Locus map.pdf

<b>Tracking:</b>	<b>Recipient</b>	<b>Delivery</b>
	Tashtesook@aol.com	
	Harwood, Jameson (DOT)	Delivered: 7/13/2023 9:25 AM

Dear Mr. Brown,

MassDOT is submitting the enclosed information regarding the above-noted project to the Narragansett Indian Tribe to meet the Section 106 consultation requirements of 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 Lavalley, 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](mailto:Jameson.Harwood@state.ma.us).

Thank you very much.

Kurt Jergensen  
Historic Bridge Specialist  
Environmental Services  
MassDOT, Highway Division  
Ten Park Plaza, Boston, MA 02116  
Cell: 207-590-4999



**Jergensen, Kurt E. (DOT)**

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**From:** Jergensen, Kurt E. (DOT)  
**Sent:** Thursday, July 13, 2023 9:28 AM  
**To:** Robinson, David S (EEA)  
**Cc:** Harwood, Jameson (DOT)  
**Subject:** Spencer, Br. S-23-012 replacement (MassDOT #609179)  
**Attachments:** 001 - 609179 - Highway Design Plans.pdf; 001 - 609179 - 1st Structural Bridge Plans.pdf; Spencer PNF.doc; Locus map.pdf

Dear Mr. Robinson,

MassDOT is submitting the enclosed information regarding the above-noted project to the Board of Underwater Archaeological Resources to meet the Section 106 consultation requirements of 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](mailto:Jameson.Harwood@state.ma.us).

Thank you very much.

Kurt Jergensen  
Historic Bridge Specialist  
Environmental Services  
MassDOT, Highway Division  
Ten Park Plaza, Boston, MA 02116  
Cell: 207-590-4999

## **APPENDIX D: 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:

June 28, 2023

Project code: 2023-0099162

Project Name: 609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD OVER THE SEVEN MILE RIVER

Subject: Consistency letter for the '609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD OVER THE SEVEN MILE 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 June 28, 2023 to verify that the **609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD OVER THE SEVEN MILE RIVER** (Proposed Action) may rely on 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 will have no effect on the endangered Indiana bat (*Myotis sodalis*) or the endangered northern long-eared bat (*Myotis septentrionalis*). If the Proposed Action is not modified, **no consultation is required for these two species**. 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 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 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 advise the lead Federal action agency accordingly.

The following species may occur in your project area and **are not** covered by this determination:

- Monarch Butterfly *Danaus plexippus* Candidate

## **PROJECT DESCRIPTION**

The following project name and description was collected in IPaC as part of the endangered species review process.

### **NAME**

609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD  
OVER THE SEVEN MILE RIVER

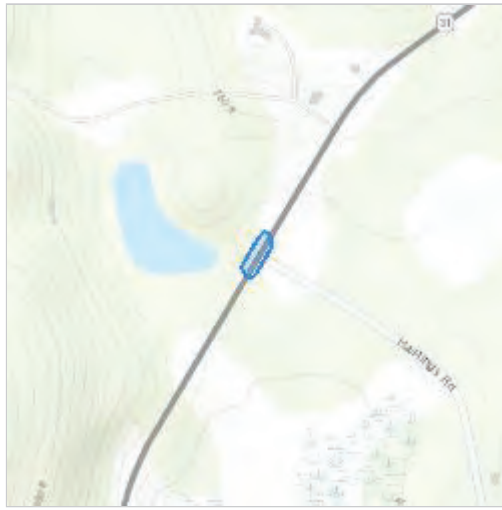
### **DESCRIPTION**

609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD  
(ROUTE 31) OVER THE SEVEN MILE RIVER

The proposed bridge project consists of replacing the existing bridge structure with a new single span bridge overpass structure. There will be no pedestrian accommodation improvements, however the useable shoulder will be increased making it safer for bicyclists to cross the bridge.

Monarch Butterfly: Candidate Species only, no conservation measures at this time.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.29185435,-72.00044385,14z>



## DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the endangered northern long-eared bat.

Therefore, no 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 for these two species.

## QUALIFICATION INTERVIEW

1. Is the project within the range of the Indiana bat<sup>[1]</sup>?

[1] See [Indiana bat species profile](#)

**Automatically answered**

No

2. Is the project within the range of the northern long-eared bat<sup>[1]</sup>?

[1] See [northern long-eared bat species profile](#)

**Automatically answered**

Yes

3. [Semantic] Does your proposed action intersect an area where Indiana bats and northern long-eared bats are not likely to occur?

**Automatically answered**

Yes

## **DETERMINATION KEY DESCRIPTION: FHWA, FRA, FTA PROGRAMMATIC CONSULTATION FOR TRANSPORTATION PROJECTS AFFECTING NLEB OR INDIANA BAT**

This key was last updated in IPaC on June 14, 2023. 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](mailto:hana.l.isihara@dot.state.ma.us)

Phone: 6178964454

## **LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Federal Highway Administration

## **APPENDIX E: SPECIFICATIONS/SPECIAL PROVISIONS**

- Item 156.5 – Crushed Stone for Filter Blanket
- Item 697.2 – Floating Silt Fence
- Item 698.3 – Geotextile Fabric for Separation
- Item 698.4 – Geotextile Fabric for Permanent Erosion Control
- Item 767.121 – Sediment Control Barrier
- Item 799 – Mussel Translocation
- Item 983.35 – Streambed Material Removed and Relaid
- Item 983.36 – Natural Streambed Material
- Item 991.1 – Control of Water Structure No. S-23-012 (CCL)

**ITEM 156.5****CRUSHED STONE FOR FILTER BLANKET****CY**

The work under this Item shall conform to the relevant provisions of Subsection 150.68 of the Standard Specifications and the following:

The work shall include placing crushed stone for filter blanket to the limits shown on the Plans for use as a bedding/foundation element for riprap at the wingwall toes. The crushed stone shall conform to Section M2.01.2 of the Standard Specifications. The required geotextile fabric is to be paid for under Item 698.4 Geotextile Fabric for Permanent Erosion Control.

The crushed stone shall be placed as shown in the details on the Plans and in conformance with the Standard Specifications.

**METHOD OF MEASUREMENT AND PAYMENT**

Crushed Stone for Filter Blanket will be measured for payment per Cubic Yard, complete in place. Crushed Stone for Filter Blanket will be paid for at the Contract Unit Price per Cubic yard, which price shall include the costs of all labor, tools, materials and equipment required to complete the work.

**ITEM 697.2****FLOATING SILT FENCE****FOOT**

The work under this section shall consist of furnishing and erecting floating silt fence turbidity barrier with steel posts to act as a silt barrier for work within Sevenmile River. The floating silt fence shall be installed prior to commencing any work in or above the river and shall be installed, removed, reset, extended, modified, etc. as necessary to complete the work while minimizing impacts to the environment.

The floating silt fence shall be placed in the river in reasonable conformity with the locations shown on the contract drawings and as directed by the Engineer. Submit catalog cut and Independent Laboratory test results for full compliance with the properties listed below for the Engineer's approval prior to application. The floating silt fence shall be in place and approved by the Engineer prior to any contract work that will interface with the river.

The Contractor shall maintain the floating silt fence in satisfactory working order until removed, including any necessary replacements of damaged or deteriorated sections, at no additional compensation. The floating silt fence in the Sevenmile River shall be maintained until all work within or above the Sevenmile River has been completed. Sediment deposited into the area enclosed by the floating silt fence shall be removed and lawfully disposed prior to relocating or removal of the floating silt fence barrier(s).

Installation procedures may be varied to comply with manufacturers recommended procedures with the approval of the Engineer and the MassDOT representative. If required, the Contractor shall submit alternate installation and/or staging procedures for approval.

**MATERIALS**

In-water Floating Silt Fence shall meet the following property specifications:

1. Product Description: An oleophilic siltation curtain with flotation members, tension link in floatation section, a permeable curtain and a ballast chain enclosed in bottom pocket.
2. Length: As required. Provide multiple sections when the length of the work area exceeds 30 feet.
3. Draft: 1 foot to 6 feet. Contractor shall field verify draft requirements.
4. Flotation Element: Cylindrical, internal closed cell foam.
5. Net Buoyancy: 6" dia. 12/lbs/ft 8" dia. 21/lbs.ft
6. Flotation Section Fabric: Fabric shall be impermeable 22 ounce per square yard PVC coated nylon or polyester in international orange or high visibility yellow.
7. Floating Silt Curtain: Floating Silt Fence curtain fabric shall be permeable fabric selected from MassDOT QCML meeting or exceeding the following properties:



**ITEM 697.2 (Continued)**

PROPERTY	MIN. REQUIREMENT	TEST
Weight	5.5 oz/yd <sup>2</sup>	
Tensile Strength	220 lbs.	ASTM D-4632
Elongation @ Break	15%	ASTM D-4632
Mullen Burst	470 psi	ASTM D-3786
Puncture Strength	100 lbs.	ASTM D-4833
Tear Strength	100 lbs.	ASTM D-4533
Abrasion Resistance	N/A	
EOS US Std. Sieve	#70	ASTM D-4751
Flow Rate	18 gal. /min. /S.F.	ASTM D-4491

8. Tension Cables: 5/16-inch PVC coated galvanized aircraft cable top tension enclosed in top portion of the floatation section. It shall secure to each end of connector of the curtain sections. Cable system shall be tamperproof.
9. Ballast: 5/16-inch 1.1 lbs/ft. or heavier if required, galvanized steel chain enclosed in bottom pocket of the entire length of floating silt fence.
10. Section Connectors: Aluminum universal connectors on each end of floatation section. Below the connectors, the skirts shall be joined by polypropylene rope ties between the grommets on the two skirts. The ballast chains can be shackled.
11. Intermediate Tensioning and Anchoring: Provide additional tensioning and anchoring in order to establish and maintain U shaped or other configuration indicated and to keep the curtain out of the work area and retain sediments within the work area (inside the floating silt fence barrier).
12. Steel posts shall be a minimum of 10 feet in length and 4 inches diameter galvanized fence post or other manufacturer approved supporting device approved by the Engineer.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

The floating silt fence will be measured in place by the foot of fence satisfactorily installed. This work will be paid for at the contract unit price per foot of Floating Silt Fence, complete in place. Such payment shall be considered full compensation for all materials, labor, tools and equipment needed to install, maintain, relocate, clean and remove turbidity curtains and remove and dispose of silt fence and debris as specified herein.

The cost of relocating, resetting, removal and disposal of the floating silt fence shall be included in the cost of the initial installation. The unit price shall include all materials, labor, tools, and equipment incidental and necessary for the installation, relocation, removal and disposal of floating silt fence.

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**ITEM 698.3      GEOTEXTILE FABRIC FOR SEPARATION      SQUARE YARD**

The work performed under this item shall consist of furnishing and installing geotextile fabric below the crushed stone for bridge foundations as shown on the Plans and as required by the Engineer.

**MATERIALS**

The geotextile fabric shall conform to the requirements of AASHTO M 288, Class 2, for fabric used for separation and must be on the MassDOT QCML. Construction and installation shall be in accordance with AASHTO M 288 including Appendix A and the following:

**CONSTRUCTION**

Atmospheric exposure of the geotextile fabric to the elements following lay down shall be a maximum of 14 days.

For seams that are sewn in the field, the Contractor shall provide at least a six-foot length of sample sewn seam for the approval of the Engineer before the geotextile fabric is installed. The seams sewn for sampling shall be sewn using the same type of equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross machine direction, samples of seams for both directions shall be provided. The seam assembly description shall be submitted by the Contractor along with the seam samples. This description shall include the seam type, stitch type, sewing thread, and stitch density. If the Contractor elects to sew seams instead of overlap, colored thread must be used.

Geotextile shall be placed in intimate contact with soils without wrinkles or folds, and shall be anchored on a smooth graded surface approved by the Engineer. The geotextile shall be placed in such a manner that placement of the overlaying materials will not excessively stretch or tear it.

Adjacent geotextile sheets shall be joined by either sewing or overlapping. At roll ends, overlapped seams shall overlap a minimum of 12 inches, except when placed under water, where they shall overlap a minimum of 3 feet. Adjacent rolls shall overlap a minimum of 12 inches.

Care shall be taken during installation to prevent damage to the geotextile as a result of the installation process. Should the geotextile be damaged, a geotextile patch shall be placed over the damaged area extending a minimum of 3 feet beyond the limits of the damage.

Placement of crushed stone for bridge foundations shall take place so as to avoid stretching and subsequent tearing of the geotextile fabric. Stone shall not be dropped from a height exceeding three feet.

Field monitoring shall be performed to verify that the stone placement does not damage the geotextile. Any geotextile damaged during backfill placement shall be replaced as required by the Engineer, at the Contractor's expense.

The Contractor shall take care not to allow more than two weeks of exposure to direct sunlight. Fabric rolls shall not be dropped more than two feet.

**ITEM 698.3 (Continued)**

**COMPENSATION**

Geotextile fabric for separation will be measured for payment by the square yard, complete in place. The square yard measurements are based on the proposed crushed stone footprints. No additional compensation shall be provided for fabric to continue up the sides.

Geotextile fabric for separation will be paid for at the Contract unit price per square yard, which price shall include all labor, materials, equipment and incidental costs required to complete the work. Overlaps and fold-overs are considered incidental to the unit price and shall be not be measured separately for cost.

**ITEM 698.4****GEOTEXTILE FABRIC FOR PERMANENT  
EROSION CONTROL****SY**

Work under this item shall consist of furnishing and installing geotextile fabric below the riprapped embankments as shown on the Plans or as required by the Engineer.

**MATERIALS**

The geotextile fabric for permanent erosion control shall conform to Department Material Specification M9.50.0 Class I non-woven, shall be in accordance with AASHTO M 288 and shall be on the MassDOT Qualified Construction Materials List.

**CONSTRUCTION**

Atmospheric exposure of the geotextile fabric to the elements following lay down shall be a maximum of 14 days.

For seams that are sewn in the field, the Contractor shall provide at least a six-foot length of sample sewn seam for the approval of the Engineer before the geotextile fabric is installed. The seams sewn for sampling shall be sewn using the same type of equipment and procedures as will be used for the production seams. If seams are sewn in both the machine and cross machine direction, samples of seams for both directions shall be provided. The seam assembly description shall be submitted by the Contractor along with the seam samples. This description shall include the seam type, stitch type, sewing thread, and stitch density. If the Contractor elects to sew seams instead of overlap, colored thread must be used.

Geotextile shall be placed in intimate contact with soils without wrinkles or folds and shall be anchored on a smooth graded surface approved by the Engineer. The geotextile shall be placed in such a manner that placement of the overlaying materials will not excessively stretch or tear it.

Adjacent geotextile sheets shall be joined by either sewing or overlapping. At roll ends, overlapped seams shall overlap a minimum of 12 inches, except when placed under water, where they shall overlap a minimum of 3 feet. Adjacent rolls shall overlap a minimum of 12 inches.

Care shall be taken during installation to prevent damage to the geotextile as a result of the installation process. Should the geotextile be damaged, a geotextile patch shall be placed over the damaged area extending a minimum of 3 feet beyond the limits of the damage.

The riprap placement shall begin at the toe of slope and proceed up the slope. Placement shall take place so as to avoid stretching and subsequent tearing of the geotextile. Stones shall not be dropped from a height exceeding 3 feet.

Field monitoring shall be performed to verify that the riprap placement does not damage the geotextile. Any geotextile damaged during backfill placement shall be replaced as required by the Engineer, at the Contractor's expense.



The Contractor shall take care not to allow more than two weeks of exposure to direct sunlight. Fabric rolls shall not be dropped more than two feet.

#### METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Geotextile fabric for permanent erosion control will be measured for payment by the square yard, complete in place. No additional payment will be made for overlapping material.

Geotextile fabric for permanent erosion control will be paid for at the Contract unit price per square yard, which price shall include all labor, materials, equipment and incidental costs required to complete the work. Overlaps and fold-overs are considered incidental to the unit price and shall not be measured separately for cost.

**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 damaged by construction activities shall be repaired or replaced as directed by the Engineer at the Contractors expense.

**ITEM 799.****MUSSEL TRANSLOCATION****LS**

The work under this Item shall include Mussel Sweeps and Translocation in accordance with NHESP Guidelines and the submittal approved by the Engineer.

**HISTORY**

As part of the planning process for this bridge construction project a freshwater mussel survey in the Sevenmile River was conducted by Biodiversity LLC, Leverett MA. The results of their survey indicated targeted species were found, therefore preconstruction relocation is required.

**SUBMITTAL**

The Contractor shall submit a Mussel Sweeps and Translocation Plan. The submittal shall contain location plans and procedures for finding and relocating the mussels. The following is a draft relocation plan.

**DRAFT PLAN**

Mussel sweeps and translocations will be conducted in accordance with *NHESP Endangered Species Translocation Guidelines: Freshwater Mussels*. *Strophitus undulatus* (creeper) is the only target (state-listed) mussel species in the project area.

Translocation will be conducted within the construction footprint, a 50-meter downstream buffer, and a 25-meter upstream buffer.

Translocation can be done anytime from early May to late September, only during the following conditions: water temperature >60.0F, high water clarity, normal river flows (i.e., average or below-average discharge), and fair weather.

Biologists will conduct a visual and tactile search throughout the survey area. Visual searches will be conducted through the entire area. Tactile searches will focus on areas near where *S. undulatus* are found and where juvenile habitat exists; this will entail sweeping/fanning fine sediments, using fingertips to gently rake the bottom, and excavating within quadrats.

A minimum of 50 0.25m<sup>2</sup> quadrats will be excavated to a depth of 10cm and washed through a 5-mm sieve to detect buried mussels. Mussel counts will be recorded separately for visual surveys and quadrats (surface vs. buried).

*S. undulatus* will be gathered and held underwater in enclosures during the collection process. If 10 or more *S. undulatus* are found, each mussel will be tagged with a durable plastic tag affixed with super glue, measured, and photographed. If fewer than 10 are found, they will not be tagged, nor will follow-up monitoring be required.

*S. undulatus* will be transported to a translocation site. They will be carefully placed near each other in the streambed. If 10 or more *S. undulatus* were found, then biologists will install permanent markers on the streambed to facilitate finding these mussels during follow-up monitoring.

**ITEM 799. (Continued)**

Tagged mussels will be checked for survival and movement one month and one year following translocation. Tag numbers, mortality, and any movement outside of the translocation area will be recorded during the 1-month survey, and the same information along with shell lengths and conditions of all tagged mussels will be recorded during the 1-year survey.

A written report will be prepared according to the standards outlined in the *NHESP Endangered Species Translocation Guidelines: Freshwater Mussels* and submitted to the Engineer.

**COMPENSATION**

Payment for all work under this Item 799. shall be made at the contract unit price, lump sum, which shall include all work detailed above and contained in the approved submittal. Submittal preparation, and required revisions as stated by the Engineer are considered incidental to this Item.

Payment of eighty-five (85) % of the contract price shall be made upon acceptance of the written report submitted after the one-month survey. Payment of the final fifteen (15) % of the contract price shall be paid upon acceptance of the written report submitted after the one-year survey.



<b><u>ITEM 983.35</u></b>	<b><u>STREAMBED MATERIAL REMOVED AND RELAID</u></b>	<b><u>CUBIC YARD</u></b>
<b><u>ITEM 983.36</u></b>	<b><u>NATURAL STREAMBED MATERIAL</u></b>	<b><u>CUBIC YARD</u></b>

Work under these items shall provide for the removal, stockpiling and reinstallation of natural streambed material.

DESCRIPTION

This work shall consist of removing, stockpiling, and replacing streambed material in the proposed bridge replacement and the upstream and downstream approaches in the limits as shown in the plans. The streambed restoration shall replicate the existing natural channel bed outside the work area in terms of material, roughness, shape, profile, and appearance. The ultimate product will, to the extent possible, replicate the function and appearance of the natural stream channel. This will allow the natural movement of water, sediment, large wood, ice, aquatic organisms, and wildlife through the structure.

The Contractor shall coordinate with his/her sub-contractors 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 a Fluvial Geomorphologist (Geomorphologist) or Wildlife Biologist to provide on-site oversight and assistance during streambed restoration construction to ensure the restoration is constructed as shown on the Plans, 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, 857-262-3378 / david.j.paulson@state.ma.us) to set up an initial (virtual or in person) meeting with MassDOT’s Geomorphologist, Contractor, District Environmental Engineer, and Resident Engineer. At this meeting, the Geomorphologist or MassDOT Wildlife Biologist 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 additional onsite meeting to discuss the streambed restoration with the Geomorphologist and respective parties from MassDOT. The Geomorphologist or Wildlife Biologist 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.

The placement of streambed material under this item shall not begin without approval of the Engineer.





**ITEMS 983.35 AND 983.36 (Continued)**

**MATERIAL**

The top 12 inches excavated streambed material shall be removed and stockpiled to facilitate reinstallation and replication of the natural streambed. This streambed material shall be stockpiled on-site during construction activities and shall be protected to prevent the material from blending with other soils on the work site. The excavated streambed material below the top 12 inches shall be stockpiled and reused to fill the voids in the proposed riprap placed below the top streambed restoration layer. Streambed material will be sourced from the channel under the existing structure where the existing main flow is located.

In the event that there is not enough available suitable material, additional streambed restoration material shall be locally sourced that matches the composition of the existing native streambed where the project is located. The following gradation may be used as a guide.

Streambed Material Gradation

Stone Size (mm)	Stone Size (inches)	Particle*	% Finer
1,024	40	Medium boulder	100
256	10	Very large cobble	70
64	2.5	Very coarse gravel	30
0.5	0.02	Coarse sand	9

\*(Wentworth, 1992)

The streambed material shall be approved by the Resident Engineer and Geomorphologist prior to use.

Related Items

Riprap Stone shall conform to the requirements of Item 983.1 and shall be paid for under that item.

**CONSTRUCTION**

Channel

The streambed material shall be reinstalled to the limits as shown on the Streambed Restoration Plan and to an average thickness of 12 inches, with variations in thickness as necessary to replicate existing channel conditions. The initial placement of streambed material shall fill / choke the voids in the underlying riprap where applicable. Fill voids by shaking stone with the teeth of an excavator bucket, hand tamping with metal tamping rods, and by spraying water to settle fines between large stones. Plate compactors shall not be used. The purpose of filling the voids is to prevent subsurface flow where surface water disappears into large voids between the stone fill below the channel bed surface during low flow conditions. The final streambed shape and appearance shall be finalized in the field as directed by the Geomorphologist.

**ITEMS 983.35 AND 983.36 (Continued)**

Reinstallation of the stockpiled streambed material shall be placed to restore streambed habitat and fish passage. The streambed materials shall be installed during normal low water conditions behind cofferdams in accordance with the environmental permits.

**Completion**

Once all material has been placed in the stream channel and approved by the Geomorphologist and Resident Engineer, the Contractor shall remove the cofferdams in such a way as 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 maintain the general configuration of the existing stream bedform and there shall be minimal to no subsurface flow upon final inspection by the Resident Engineer and Geomorphologist. The project must be passable by fish and other aquatic organisms following construction.

**METHOD OF MEASUREMENT**

The Streambed Material Removed and Relaid, to be measured for payment per Cubic Yard, will be the complete and accepted work for restoration of the streambed within the limits shown on the Plans as approved by the Resident Engineer and Geomorphologist.

The Natural Streambed Material to be measured for payment per Cubic Yard as required to supplement the stockpiled material and approved by the Resident Engineer.

**BASIS OF PAYMENT**

The Geomorphologist will be provided by MassDOT at no cost to the Contractor.

The work to be done under these Items shall be paid for at the Contract unit price, which shall include full compensation for all labor, tools, equipment, materials, and incidental expenses necessary to excavate, stockpile and re-lay streambed material to the lines and grades shown on the Contract plans or as directed by the Engineer.

**ITEM 991.1      CONTROL OF WATER STRUCTURE NO. S-23-012 (CCL)      LS**

The work under this item shall conform to the relevant provisions of Subsection 140.60E. Water Control in Foundation Area of the MassDOT Standard Specifications for Highways and Bridges, the Contract Drawings, and the following:

The work shall consist of installing and maintaining a temporary water control system in areas of demolition of the existing bridge and proposed bridge construction including wingwall construction and installation of riprap at the face of the wingwalls as shown on the Plans. The Contractor shall furnish all labor, materials and equipment required for doing the work as described above and as shown on the Plans, in the dry. Furthermore, the operations of Control of Water neither shall cause the accumulation of siltation nor any adverse effect to the water or the environment.

Work under this item shall include all materials, equipment and labor needed to construct and install temporary control of water systems. The temporary control of water systems includes water sedimentation and erosion control. The temporary control of water systems shall be nonpermanent which does not harm the ecology of the river, land under water, and surrounding land, and shall be comprised of sand bags, cofferdams, steel sheeting or other approved impervious curtains, and dewatering to facilitate construction activities. Operations of Control of Water shall not adversely affect the quality of the required construction.

Steel sheeting or bracing necessary to complete the work shall conform to the provisions of Subsection 950 and is considered incidental to this Item.

Control of water shall include treatment to remove sedimentation and potential water contaminants in a manner which complies with the water quality requirements of the Massachusetts Department of Environmental Protection (MA DEP), the U.S. Army Corps of Engineers (ACOE) and the U.S. Environmental Protection Agency (EPA). **Direct discharge from the settling basin into the river/brook shall not be permitted.**

Water pumps and hoses used shall be in good working condition and of adequate power and size to handle the dewatering operation(s). Before installing the dewatering settling basin, all other erosion control measures shall be installed. Dewatering settling basin operations shall be maintained in working condition including periodic removal of accumulated sediment within the basin. Additional erosion control measures shall be employed as required by the Engineer to prevent erosion and sedimentation of the streambed.

**Submittal**

Prior to the commencement of any work at the site, the Contractor shall submit to the Engineer and for review and approval, a detailed plan for water control, including the design of steel sheeting, the construction of the water control system for bridge and retaining wall work. The submittal shall include working drawings and calculations detailing the methods and materials proposed to account for all anticipated loads and construction conditions while maintaining a safe work area.

**ITEM 991.1 (Continued)**

The Water Control Plan shall include a Sedimentation and Erosion Control Plan and Containment Plan. The plans shall be adequate in detail to define specifics regarding materials, sizes, connections and incidental items associated with the work. The furnishing of such plans shall not serve to relieve the Contractor's responsibility for the safety of the work or his responsibility for the successful completion of the project. The proposed plans submitted shall be designed and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts.

Upon completion of water control, the materials and equipment used to maintain the cofferdam(s) and sedimentation treatment basin(s) shall become the property of the Contractor and shall be removed by the Contractor from the site. The area affected shall be restored to its natural condition in a manner subject to the Engineer's approval.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Control of Water – Structure No. S-23-012 will be paid for at the Contract lump sum price, which shall include, but not be limited to, the design of the water control systems, as well as all equipment, materials and labor needed for the installation, maintenance, removal, disposal of the materials used for water control, and disposal of any siltation materials caused by the pumping operation. All costs required for transport, special handling, inspection, testing, etc., shall be included in the Contract bid price, which shall also include all labor, materials, equipment, tools, and incidental costs required to complete the work.

Progressive payment of the Lump Sum will be as follows. Twenty-five (25%) percent of the Lump Sum Price Bid for this Item will be paid after the approved installation of the water control system for Stage I Construction. Twenty-five (25%) percent of the Lump Sum Price Bid for this Item will be paid after the approved installation of the water control system for Stage II Construction. The final fifty (50%) percent of the Lump Sum Price Bid for this Item will be paid upon the complete removal of the water control system from the project site at the completion of the work. No separate payment will be made for the removal and disposal of the sediment material collected from the dewatering systems, but all costs in connection therewith shall be included in the Contract unit price bid.

## **APPENDIX F: SITE PHOTOS**

Site Photos  
North Spencer Road / ST 31 – Spencer, MA



**Photo No. 1 – ST 31 West fascia looking North**



**Photo No. 2 – ST 31 West fascia looking South**

Site Photos  
North Spencer Road / ST 31 – Spencer, MA



**Photo No. 3** – Hastings Road looking East

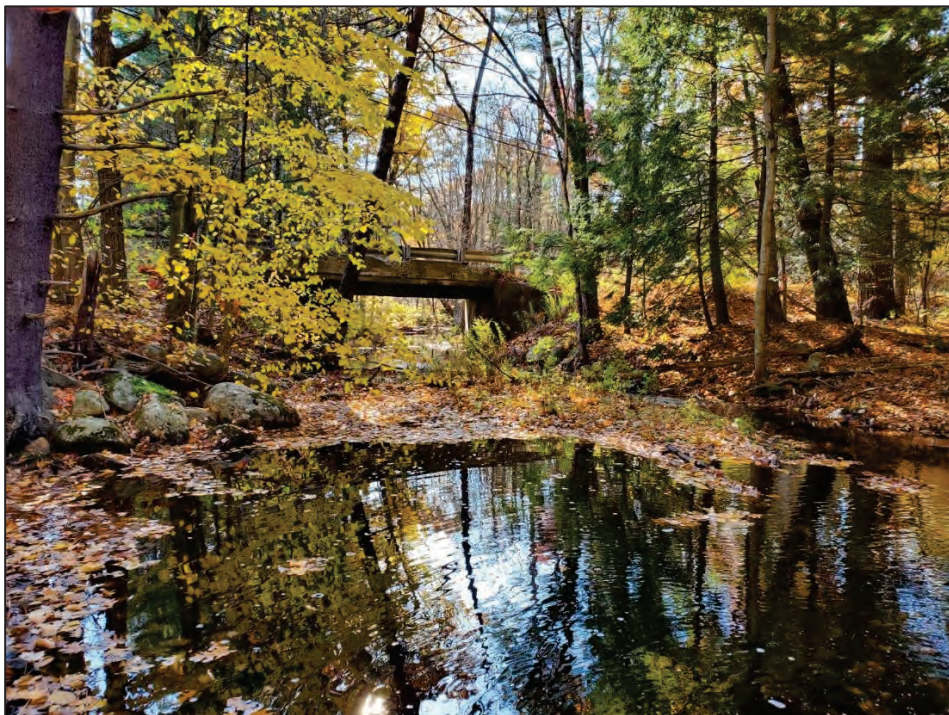


**Photo No. 4** – ST 31 / Hastings Road intersection

Site Photos  
North Spencer Road / ST 31 – Spencer, MA



**Photo No. 5** – Looking west at upstream channel



**Photo No. 6** – West Elevation



Site Photos  
North Spencer Road / ST 31 – Spencer, MA



**Photo No. 7** – Looking east at downstream channel



**Photo No. 8** – East Elevation

Site Photos  
North Spencer Road / ST 31 – Spencer, MA



**Photo No. 9** – Typical Underside looking east



**Photo No. 10** – Wearing Surface / road plates

Site Photos  
North Spencer Road / ST 31 – Spencer, MA



**Photo No. 11** – Southwest quadrant



**Photo No. 12** – Southeast quadrant

Site Photos  
North Spencer Road / ST 31 – Spencer, MA



**Photo No. 13** – Northeast quadrant



**Photo No. 14** – Northwest quadrant

Site Photos  
North Spencer Road / ST 31 – Spencer, MA



**Photo No. 15** – Private dam 150 ft +/- upstream



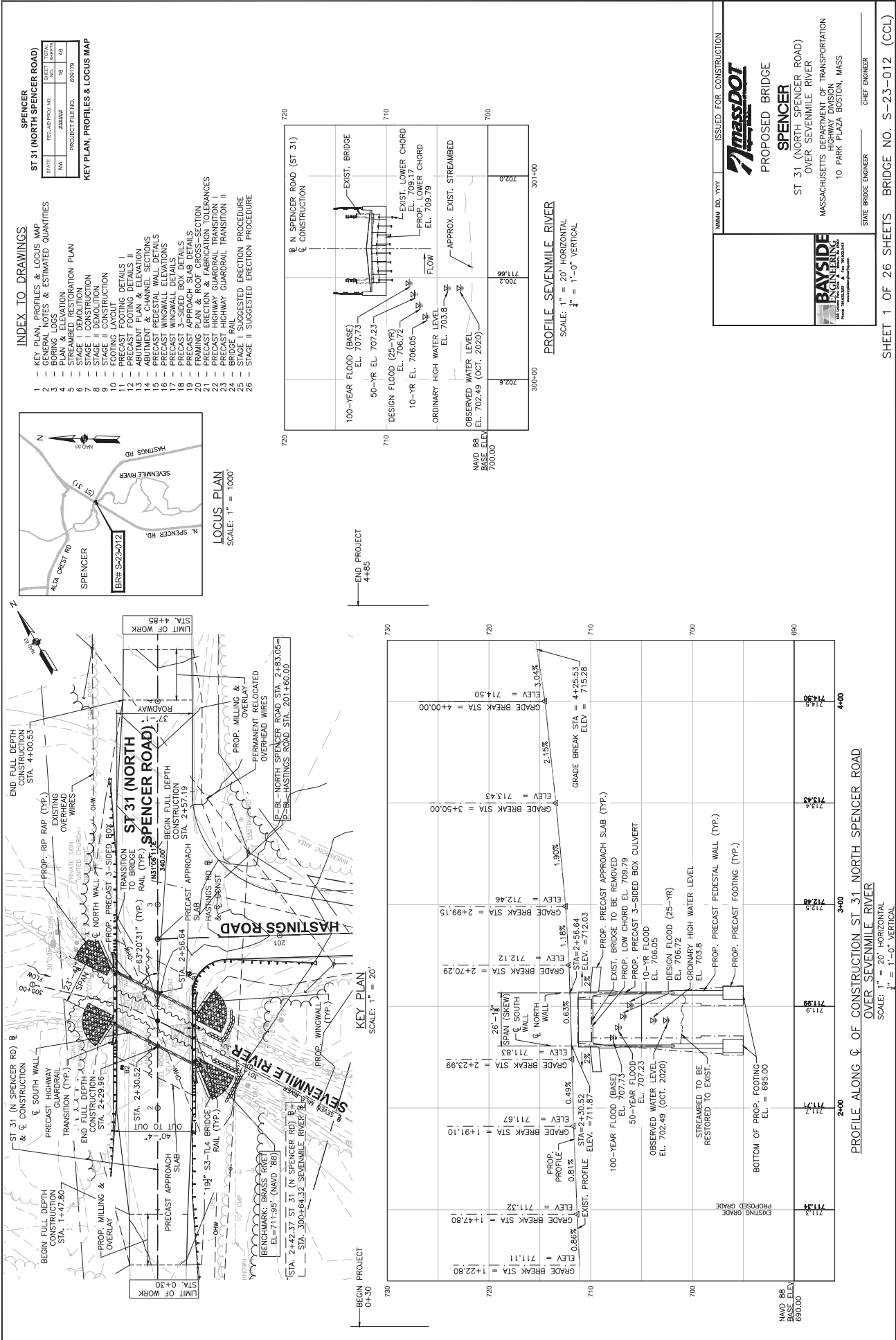
**Photo No. 16** – Dam spillway

## **APPENDIX G: PROJECT PLANS AND DETAILS**









**SPENCER ST 31 (NORTH SPENCER ROAD)**

STATE	MA	SHEET NO.	10	TOTAL SHEETS	40
FED. AID PROJ. NO.	88000000	NO.	10	TOTAL NOS.	40
PROJECT FILE NO.	880719				

**KEY PLAN, PROFILES & LOCUS MAP**

**MassDOT**  
ISSUED FOR CONSTRUCTION

**PROPOSED BRIDGE**  
**SPENCER**  
ST 31 (NORTH SPENCER ROAD)  
OVER SEVENMILE RIVER  
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
10 PARK PLAZA BOSTON, MASS

**BAYSIDE ENGINEERING**  
100 WASHINGTON ST., SUITE 200  
BOSTON, MA 02108  
TEL: 617-552-1100  
WWW.BAYSIDEENGINEERING.COM

STATE BRIDGE ENGINEER \_\_\_\_\_ CHIEF ENGINEER \_\_\_\_\_

**GENERAL NOTES:**

DESIGN IN CONFORMANCE WITH THE 2020 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS LRFD BRIDGE DESIGN SPECIFICATIONS FOR HL-93 LOADING. EXISTING BRIDGE PLANS FOR THE BRIDGE, DATED OCTOBER 1938, MAYBE SEEN AT THE OFFICE OF THE BRIDGE ENGINEER, MASSACHUSETTS HIGHWAY DEPARTMENT, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

MASSDOT BENCH MARK: VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT AND ELEVATIONS ARE BASED ON A BRASS RIVET WITH AN ELEVATION OF 711.95 LOCATED AT TOP OF THE SOUTHEAST WINGWALL.

DATE TO BE PLACED ON THE INSIDE FACE OF THE SOUTHWESTERLY AND NORTHWESTERLY HIGHWAY GUARDRAIL TRANSITIONS. A SHEET SHOWING THE SIZE AND CHARACTER OF THE NUMERALS WILL BE FURNISHED, THE DATE USED SHALL BE THE LATEST YEAR OF THE CONTRACT COMPLETION AS OF THE DATE THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CONSTRUCTED. BOTH HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY ANTI-CORROSION: TO BE USED IN THE PREPARATION OF CONSTRUCTION DRAWINGS AND A COPY OF THE FILES MAY BE OBTAINED FROM MASSDOT.

SCALES: NOTES ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZED PRINTS (A3).

FOUNDATIONS: FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL: UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

CONCRETE: ALL CONCRETE SHALL BE 4000 PSI HP CEMENT CONCRETE, EXCEPT AS NOTED BELOW: TRANSITIONS TO PRECAST 1-SIDED BOX OR THE PRECAST APPROACH SLAB SHELF, PRECAST PEDESTAL WALLS, AND PRECAST WINGWALL STEM SHALL BE 5000 PSI  $\frac{3}{4}$  685 HP CEMENT.

REINFORCEMENT: STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS. ALL BARS SHALL BE LAPPED AS FOLLOWS:

- 1. NONE
- 2. 12" OF CONCRETE BELOW BAR
- 3. COATED BARS, COVER  $\geq 3d$ , OR CLEAR SPACING  $\geq 6d$
- 4. COATED BARS, ALL OTHER CASES
- 5. CONDITION 1, AND 3.
- 6. CONDITION 2, AND 4.

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ALL REINFORCEMENT SHALL BE COATED.

UTILITIES: EXISTING UTILITIES SHALL BE LOCATED AND PROTECTED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS TO RELOCATE OVERHEAD WIRES AND UTILITY POLES AS REQUIRED BY THE CONSTRUCTION.

TRAFFIC: THE BRIDGE WILL BE OPEN TO TRAFFIC DURING ALL PHASES OF DEMOLITION AND CONSTRUCTION, REFER TO THE TEMPORARY TRAFFIC CONTROL PLANS FOR THE ASSOCIATED DETOUR.

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

DATE	DESIGNER'S NO.	SHEET NO.	TOTAL SHEETS

PROJECT FILE NO. 609179

**GENERAL NOTES & ESTIMATED QUANTITIES**

**TRAFFIC DATA**

DESIGN YEAR	ROADWAY TYPE	ROADWAY WIDTH	ROADWAY LENGTH
AVERAGE DAILY TRAFFIC - PRESENT	2042	1	YEAR
AVERAGE DAILY TRAFFIC - DESIGN YEAR	5150	ADT	
DESIGN HOURLY VOLUME	6535	ADT	
DIRECTIONAL DISTRIBUTION	502	N/A	
TRUCK PERCENTAGE - AVERAGE DAY	N/A		
TRUCK PERCENTAGE - PEAK HOUR	2%	PHIT	
DESIGN SPEED	45 MPH	DES	
DIRECTIONAL DESIGN HOURLY VOLUME	251	DDHV	

**SEISMIC DESIGN CRITERIA**

DESIGN RETURN PERIOD:	1000 YR
DESIGN SPECTRA	
AS	0.098
S <sub>B</sub>	0.214
SD1	0.091
SITE CLASS	D
SEISMIC DESIGN CATEGORY (SDC)	A

**HYDRAULIC DESIGN DATA**

DRAINAGE AREA (SQ. MILES)	6.27
DESIGN FLOOD DISCHARGE (C.F.S.)	531
DESIGN FLOOD FREQUENCY (YEARS)	25
DESIGN FLOOD VELOCITY (F.P.S.)	4.32
DESIGN FLOOD ELEVATION (FEET, NAVD)	706.72
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	840
BASE FLOOD ELEVATION (FEET, NAVD)	707.73
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT	
RETURN FREQUENCY (YEARS)	50
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	0.82
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT	
RETURN FREQUENCY (YEARS)	100
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	1.02
CHECK FLOOD PIER SCOUR DEPTH (FEET)	N/A
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	N/A
VELOCITY (FT./MIN)	N/A
PERCENTAGE OF RAINFALL (INCHES)	N/A
MAXIMUM ELEVATION (FEET, NAVD)	N/A
DATE (MM/YYYY)	N/A
HISTORY OF ICE FLOES	NONE
EVIDENCE OF SCOUR AND EROSION	NONE

**TEMPORARY WATER CONTROL DESIGN DATA**

DESIGN FLOOD DISCHARGE (C.F.S.)	166
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S.)	5.93
*DESIGN FLOOD ELEVATION (FEET, NAVD)	706.89

\*THIS IS THE RECOMMENDED TOP OF COTTERDAM ELEVATION

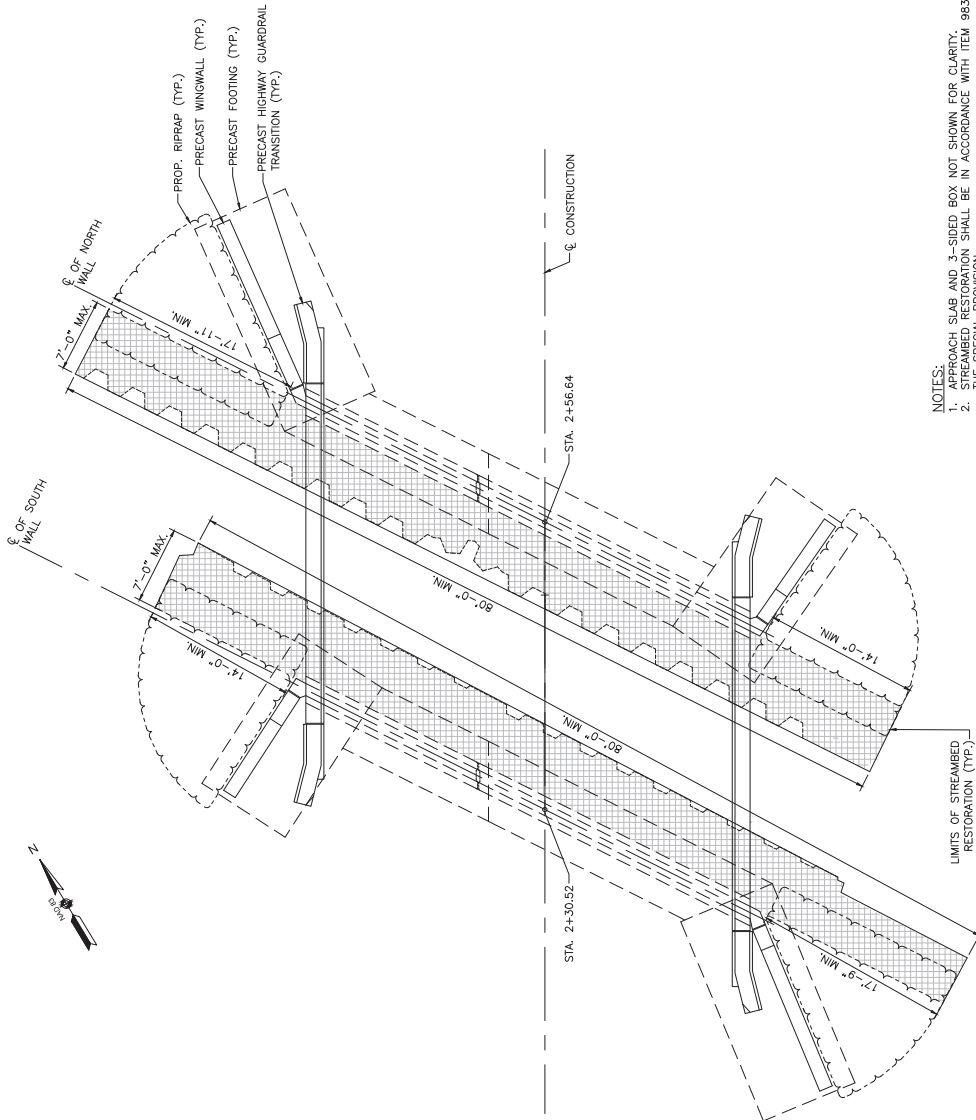
**ESTIMATED QUANTITIES (NOT GUARANTEED)**

ITEM DESCRIPTION	QUANTITY	UNITS
DEMOLITION OF SUBSTRUCTURE OF BRIDGE BR. NO. S-23-012 (0E)	1	TON
CONCRETE EXCAVATION	400	CY
BRIDGE EXCAVATION	840	CY
CLASS B ROCK EXCAVATION	85	CY
GRAVEL BORROW FOR BRIDGE FOUNDATIONS	40	CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES & PIPES	560	CY
CRUSHED STONE FOR BRIDGE FOUNDATIONS	235	TON
CRUSHED STONE FOR FILTER BLANKET	45	CY
SUPERPAVE BRIDGE SURFACE COURSE-9.5 POLYMER (SPC-B-9.5-P)	11	TON
SUPERPAVE BRIDGE PROTECTIVE COURSE-9.5 POLYMER (SPC-B-9.5-P)	25	TON
TEXTILE FABRIC FOR SEPARATION	190	SQ
GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL	130	LS
MUSSEL TRANSLOCATION	230	FT
TEMPORARY BARRIER - LIMITED DEFLECTION (1L-3)	230	FT
TEMPORARY BARRIER - LIMITED DEFLECTION (1L-3) REMOVE AND RESET	160	TON
RIPRAP	45	CY
STREAMBED MATERIAL REMOVED AND RELAND	25	CY
TEMPORARY EXCAVATION SUPPORT - BR NO. S-23-012 (CCL)	1	LS
CONTROL OF WATER - STRUCTURE NO. S-23-012 (CCL)	1	LS
TEMPORARY PROTECTIVE SHIELDING, BRIDGE NO. S-23-012 (CCL)	1	LS
BRIDGE STRUCTURE, BRIDGE NO. S-23-012 (CCL)	1	LS

ISSUED FOR CONSTRUCTION	
DATE	
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORITY	
STATE BRIDGE ENGINEER	
DATE	

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**  
**STREAMBED RESTORATION PLAN**

DATE	FED. APPROVAL NO.	SHEET NO.	TOTAL SHEETS
MA	PROJECT FILE NO.	20	40
		PROJECT FILE NO. 609179	



- NOTES:**
1. APPROACH SLAB AND 3-SIDED BOX NOT SHOWN FOR CLARITY.
  2. STREAMBED RESTORATION SHALL BE IN ACCORDANCE WITH ITEM 983.35 OF THE SPECIAL PROVISIONS.
  3. STREAMBED RESTORATION SHOWN AS THIS: [Symbol]

**STREAMBED RESTORATION PLAN**  
SCALE: 1/8" = 1'-0"

ISSUED FOR CONSTRUCTION
DATE
DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:
STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE

SHEET 5 OF 26 SHEETS BRIDGE NO. S-23-012 (COL)

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

DATE	REV. APPROVAL	SHEET TOTAL
MA	#####	21 OF 40
PROJECT FILE NO. 609179		

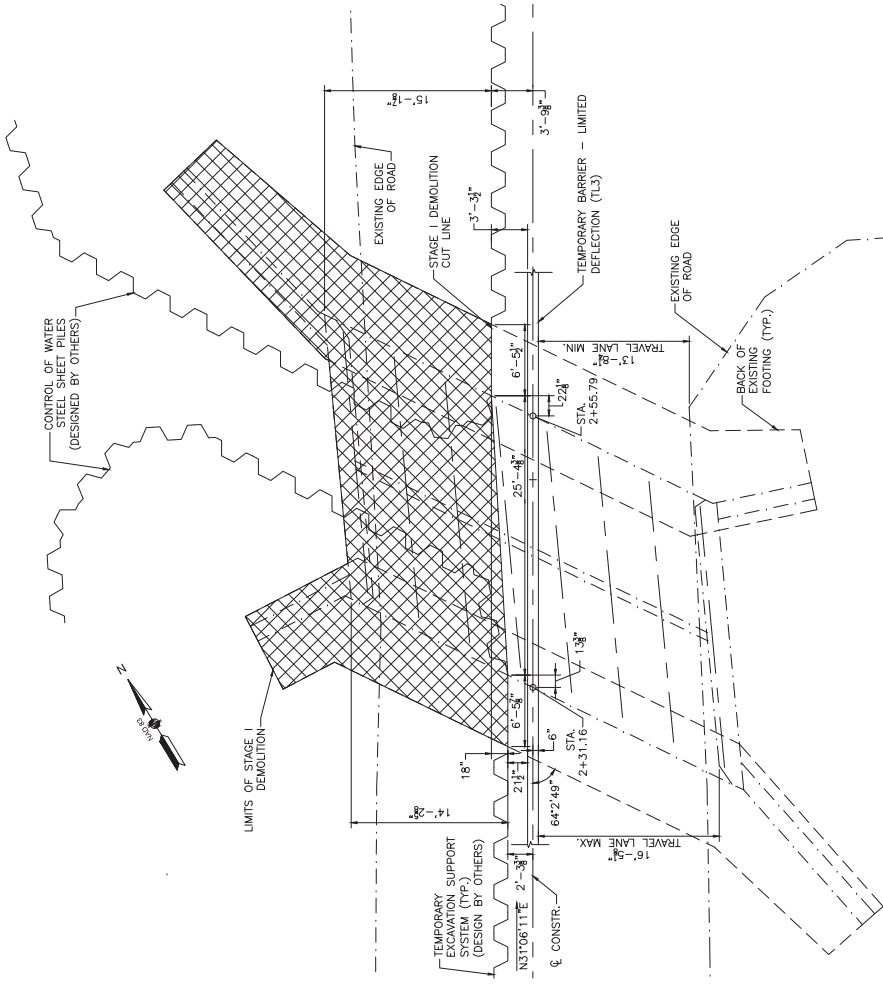
**STAGE I DEMOLITION**

**DEMOLITION NOTE:**

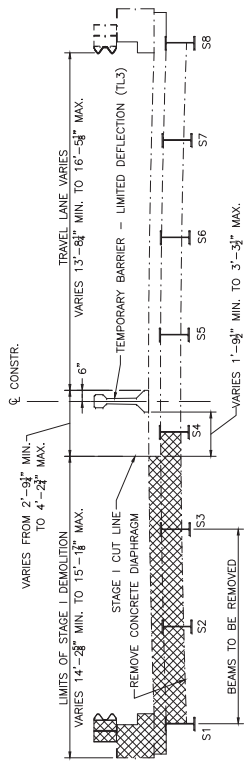
1. SEE EXISTING SUBSTRUCTURE SECTIONS THIS SHEET.
2. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH ITEM 114.1 AND 127.1 OF THE SPECIAL PROVISIONS.

**STAGE I DEMOLITION SEQUENCE:**

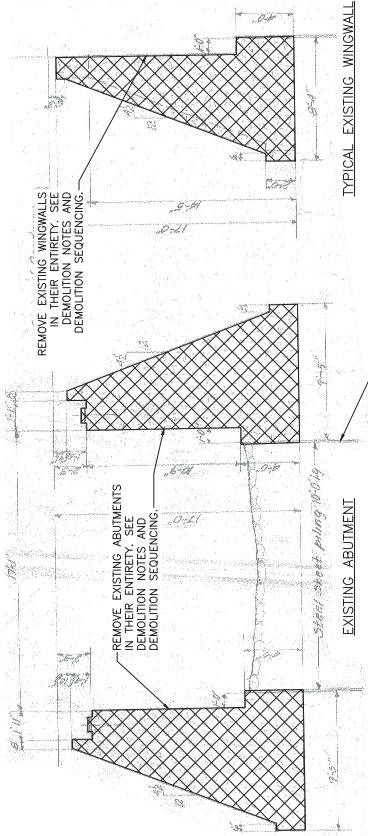
1. RELOCATE OVERHEAD UTILITIES.
2. INSTALL TEMPORARY PROTECTIVE CONTROLS FOR STAGE I.
3. INSTALL TEMPORARY PROTECTIVE SHIELDING TO THE WEST OF THE STAGE I DEMOLITION LINE.
4. SAW CUT NEAT LINES IN THE DECK AT THE STAGE 1 DEMOLITION CUT LINE.
5. REMOVE THE DECK PLATES, DECK BEAMS S1-S3, BEARINGS, INTERMEDIATE DIAPHRAGM, AND END DIAPHRAGMS WEST OF THE STAGE 1 DEMOLITION CUT LINE WITHOUT DAMAGING THE COMPONENTS TO REMAIN.
6. TEMPORARY EXCAVATION SUPPORT SYSTEM (DESIGNED BY OTHERS).
7. INSTALL CONTROL OF WATER (DESIGNED BY OTHERS).
8. REMOVE AND STORE THE TOP 12 INCHES OF STREAMBED MATERIAL TO THE LIMITS SHOWN ON THE STREAMBED RESTORATION PLAN IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
9. EXCAVATE THE ABUTMENTS & WINGWALLS WEST OF THE STAGE I DEMOLITION CUT LINE.
10. SAW CUT NEAT LINES ON ALL FACES OF THE BACKWALLS, ABUTMENTS, AND FOOTINGS WEST OF THE STAGE I DEMOLITION CUT LINE.
11. REMOVE THE NORTHWEST AND SOUTHWEST WINGWALLS AND FOOTINGS IN THEIR ENTIRETY.
12. REMOVE THE BACKWALLS, ABUTMENTS, AND FOOTINGS WEST OF THE STAGE I DEMOLITION CUT LINE WITHOUT DAMAGING THE COMPONENTS TO REMAIN.
13. CUT DOWN EXISTING ABUTMENT SHEET PILES TO THE BOTTOM OF THE LIMITS OF CRUSH STONE FOR BRIDGE FOUNDATION (SEE SHEET 14).



**STAGE I DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"



**STAGE I DEMOLITION SECTION**  
SCALE: 1/8" = 1'-0"



**EXISTING SUBSTRUCTURE SECTIONS**  
SCALE: 1/8" = 1'-0"

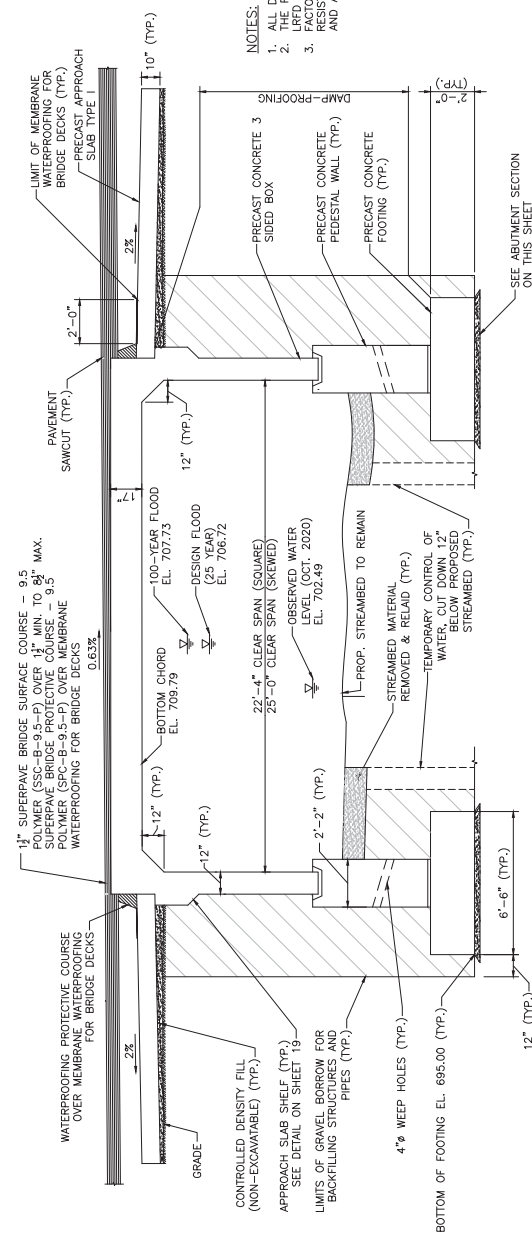
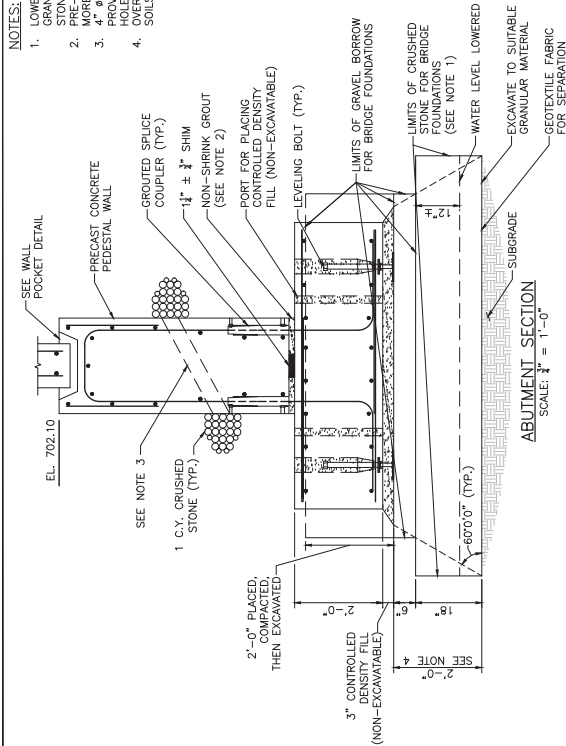
ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER	USE ONLY PRINTS OF LATEST DATE

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET TOTAL
MA	#####	23 OF 40
	PROJECT FILE NO.	609179

**ABUTMENT & CHANNEL SECTIONS**

- NOTES:**
1. LOWER WATER LEVEL AS MUCH AS POSSIBLE WITHOUT DISTURBING THE GRANULAR SOIL (SIDES & BOTTOM) AND THEN TIGHTEN THE CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS)
  2. WEAPONS SHALL BE PLACED WITH NON-SHRINK GROUT WITH THICKNESS MORE THAN SIX TIMES THE DIAMETER OF THE WEAPON.
  3. 4" Ø WEEP HOLES 10'-0" O.C. MAX. (JUST ABOVE PROTECTIVE COURSE). PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE. EXCAVATION OF SUBGRADE IS REQUIRED WHEN THERE ARE CLAY SOILS LOCATED AT THE BOTTOM OF FOOTING.
  4. SOILS LOCATED AT THE BOTTOM OF FOOTING.



- NOTES:**
1. ALL DIMENSIONS ARE ON THE SQUARE UNLESS OTHERWISE NOTED.
  2. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE STRUCTURE UNLESS NOTED OTHERWISE.
  3. ALL DIMENSIONS ARE TO THE CENTERLINE OF THE STRUCTURE UNLESS NOTED OTHERWISE.

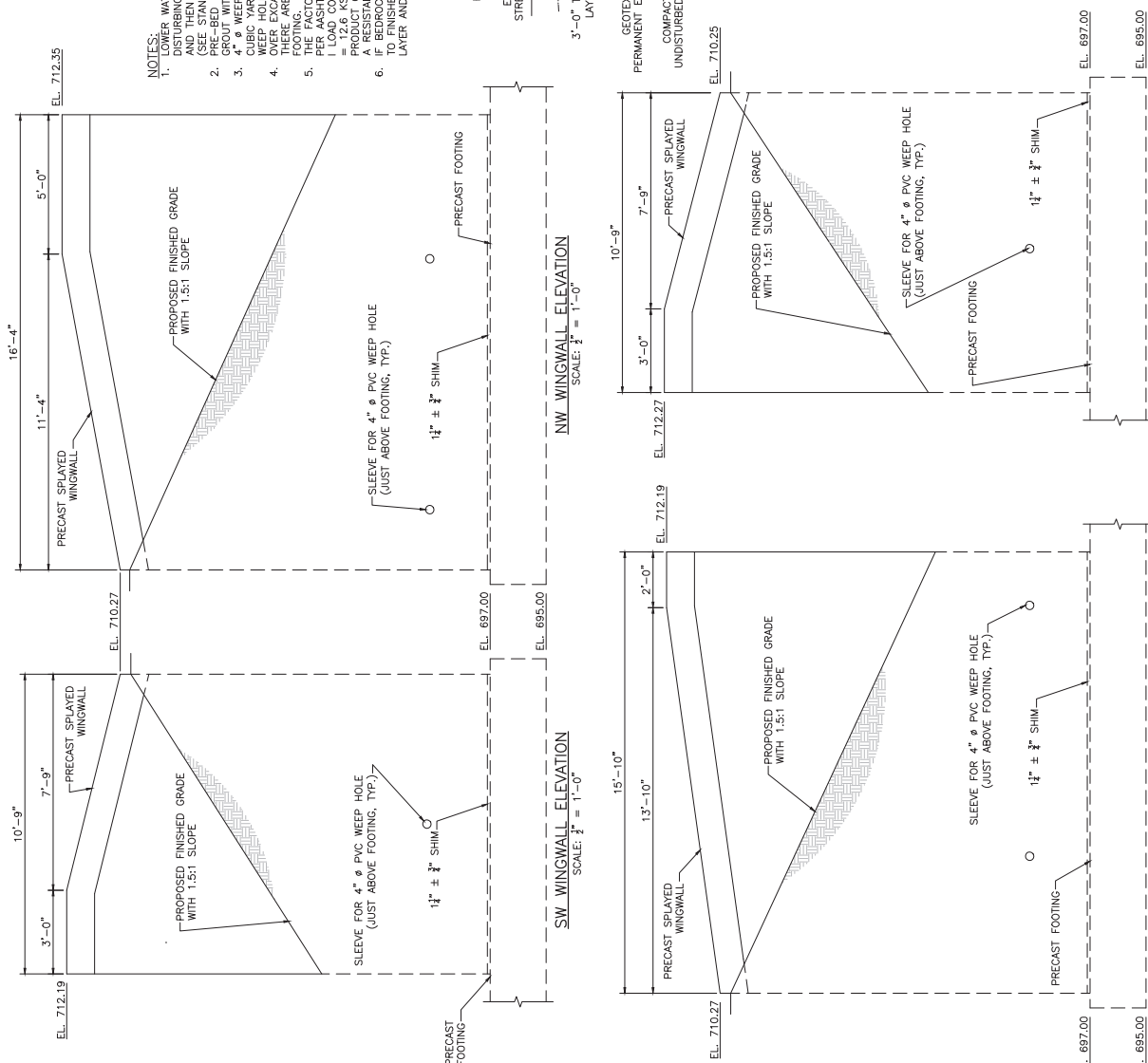
MA. NO. YYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
	THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:
	STATE BRIDGE ENGINEER
	USE ONLY PRINTS OF LATEST DATE

SHEET 14 OF 26 SHEETS BRIDGE NO. S-23-012 (COL)

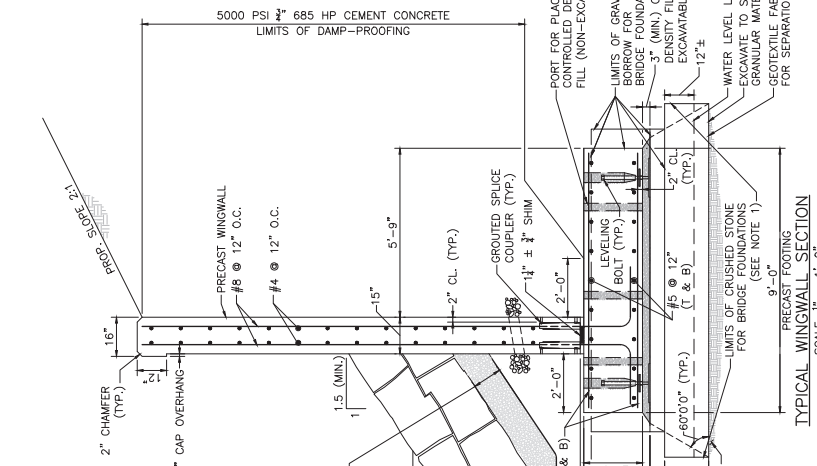
**SPENCER**  
ST 31 (NORTH SPENCER ROAD)

DATE	DESIGN APPROVAL	SHEET NO.	TOTAL SHEETS
1/14	1/14	11	40

PROJECT FILE NO. 609179



- NOTES:**
1. MAINTAIN WATER LEVEL AS MUCH AS POSSIBLE WITHOUT DISTURBING THE GRANULAR SOIL (SIDES & BOTTOM) AND THEN TIGHTEN THE CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS)
  2. PRE-BED PRECAST ELEMENT WITH NON-SHRINK GRANULAR FILL TO 12" MIN. O.C. MAX. PROVIDE 1" CAP OVERHANG
  3. 4" Ø WEEP HOLES 10'-0" O.C. MAX. PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE
  4. DEEP EXCAVATION OF SUBGRADE IS REQUIRED WHEN THERE ARE CLAY SOILS LOCATED AT THE BOTTOM OF FOOTING.
  5. THE FACTORED BEARING PRESSURE = 4.3 KSF AS PER ASSOCIATED BRIDGE SPECIFICATIONS (STRENGTH = 12.6 KSF). FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.
  6. TO FINISHED GRADE. ELIMINATE CRUSHED STONE LAYER AND GEOTEXTILE FABRIC.

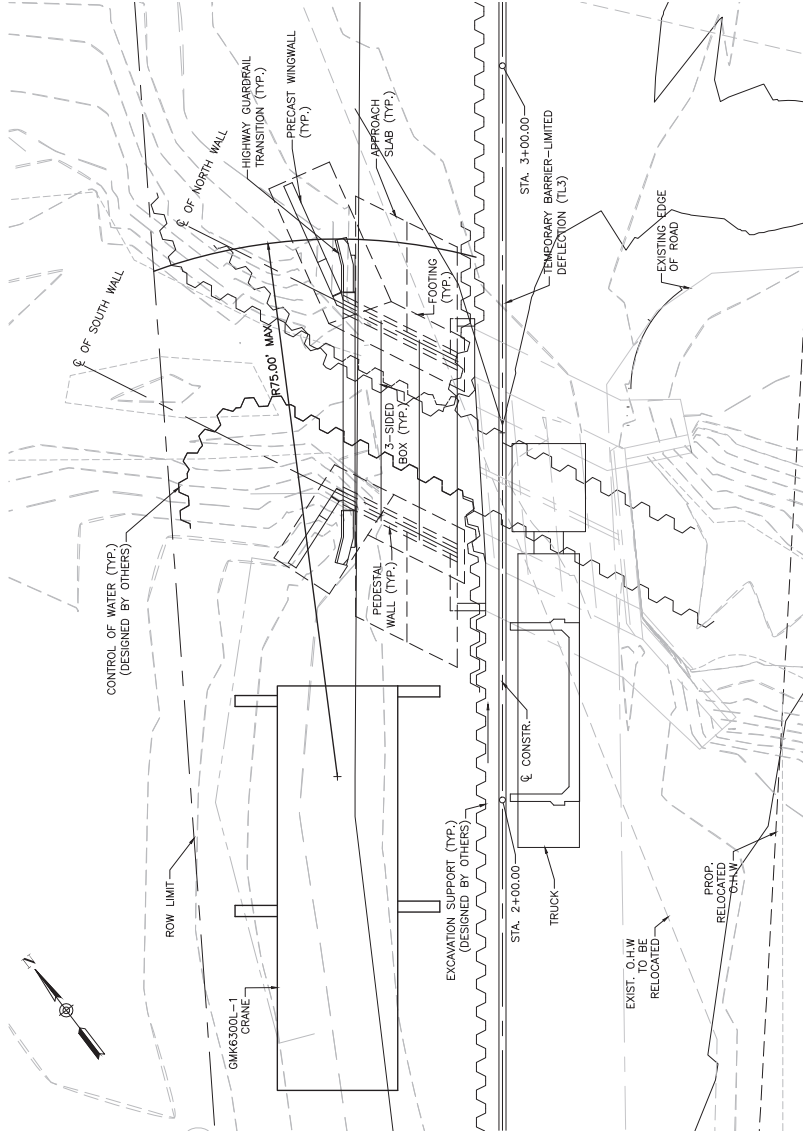


ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:		STATE BRIDGE ENGINEER
USE ONLY PRINTS OF LATEST DATE		

SHEET 16 OF 26 SHEETS BRIDGE NO. S-23-012 (CCL)

SPENCER  
ST 31 (NORTH SPENCER ROAD)  
STAGE I SUGGESTED ERECTION PROCEDURE

STATE	FED. AID PROJ. NO.	SHEET TOTAL
MA	#####	40
PROJECT FILE NO.	609179	



SUGGESTED STAGE I  
ERECTION PROCEDURE

SCALE: 1" = 1'-0"

NOTES:

1. CRANE IS A GROVE GMK6300L-1 WITH 203,900 LBS OF COUNTER-WEIGHT. THE CRANE CAPACITY IS 74,000 LBS WITH A REACH OF 75.00 FEET AND A FACTORED WEIGHT OF 60,000 LBS.
2. THE CRANE WILL BE TEMPORARILY STORED IN THE NORTHBOUND LANE.
3. THE CRANE CAPACITY IS 74,000 LBS WITH A REACH OF 75.00 FEET.

STAGE I SUGGESTED LIFTING PROCEDURE:

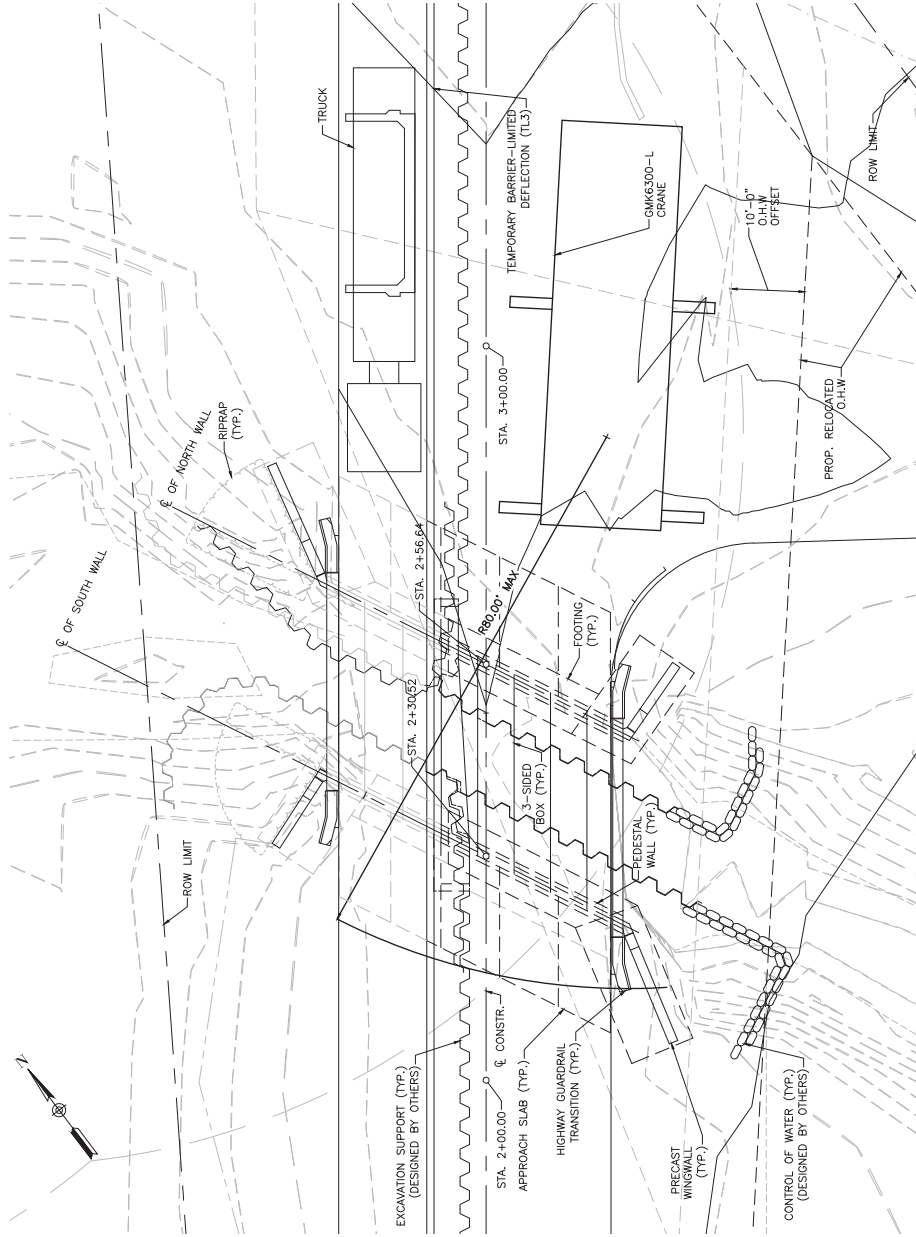
1. TRAFFIC WILL TEMPORARILY STOP IN THE NORTHBOUND LANE.
2. THE TRUCK WILL STOP IN THE NORTHBOUND LANE WITH THE PRECAST ELEMENT.
3. THE CRANE WILL LIFT THE PRECAST ELEMENT OFF OF THE TRUCK AND LOWER IT INTO POSITION.
4. THE NORTHBOUND LANE WILL BE RE-OPENED TO TRAFFIC.
5. PRECAST ELEMENT #2 WILL BE INSTALLED IN STAGE II.
6. PRECAST ELEMENT #1 TO BE INSTALLED IN STAGE I:
  - A. SOUTH FOOTING UNITS 1 & 2
  - B. SOUTH PEDESTAL WALL UNIT 1
  - C. SOUTH PEDESTAL WALL UNIT 2
  - D. NORTH PEDESTAL WALL UNIT 1
  - E. 3-SIDED BOX UNITS 1-3
  - F. SOUTHWEST WINGWALL
  - G. NORTHEAST WINGWALL
  - H. NORTHWEST WINGWALL GUARDRAIL TRANSITION
  - I. NORTHWEST HIGHWAY GUARDRAIL TRANSITION
  - J. SOUTH APPROACH SLAB UNITS 1 & 2
  - K. NORTH APPROACH SLAB UNITS 1 & 2

MA. NO. YYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	
STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#####	41	40
PROJECT FILE NO.		609179	

**STAGE II SUGGESTED ERECTION PROCEDURE**



**SUGGESTED STAGE II ERECTION PROCEDURE**  
SCALE: 1" = 1'-0"

**NOTE:**  
1. CRANE IS A GROVE CMK6300-L WITH 203,900 LBS OF COUNTER-WEIGHT.  
2. THE CRITICAL LIFT IS SOUTH FOOTING UNIT 4 WITH A REACH OF 80.00 FEET AND FACTORED WEIGHT OF 55,000 LBS.  
3. THE CRANE CAPACITY WITH A REACH OF 80.00 FEET IS 68,000 LBS.

**STAGE II SUGGESTED LIFTING PROCEDURE:**

1. TRAFFIC WILL BE TEMPORARILY STOPPED IN THE SOUTHBOUND LANE.
2. THE TRUCK WILL STOP IN THE SOUTHBOUND LANE WITH PRECAST ELEMENT.
3. THE CRANE WILL LIFT THE PRECAST ELEMENT OFF OF THE TRUCK AND LOWER IT INTO POSITION.
4. THE PRECAST ELEMENT WILL BE POSITIONED AND BEING LOWERED INTO POSITION.
5. PRECAST STEPS 3 & 4 FOR REMAINING PRECAST ELEMENTS.
6. PRECAST ELEMENT TO BE INSTALLED IN STAGE II:
  - A. SOUTH FOOTING UNITS 3 & 4
  - B. SOUTH PEDESTAL WALL UNIT 2
  - C. NORTH PEDESTAL WALL UNIT 1 & 4
  - D. NORTH PEDESTAL UNIT 2
  - E. 3-SIDED BOX UNITS 4-8
  - F. SOUTH EAST WINGWALL
  - G. SOUTH EAST HIGHWAY GUARDRAIL TRANSITION
  - H. SOUTH EAST HIGHWAY GUARDRAIL TRANSITION
  - I. NORTH EAST HIGHWAY GUARDRAIL TRANSITION
  - J. SOUTH APPROACH SLAB UNITS 3-5
  - K. NORTH APPROACH SLAB UNITS 3-5

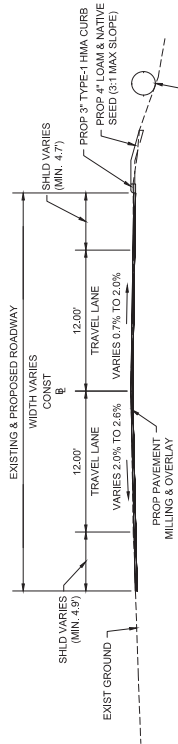
MA. NO. YYY	DATE	ISSUED FOR CONSTRUCTION

THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: \_\_\_\_\_ STATE BRIDGE ENGINEER  
USE ONLY PRINTS OF LATEST DATE



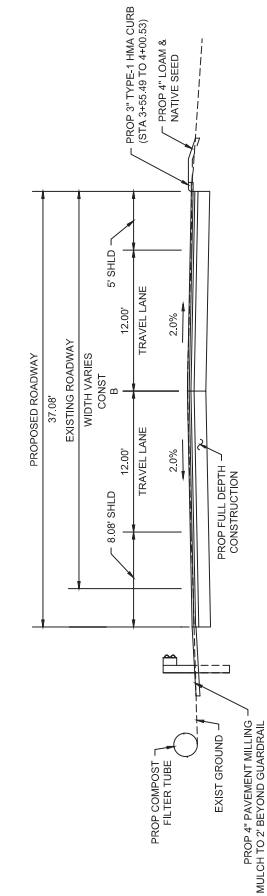
SPENCER		SHEET TOTAL	
ST 31 (NORTH SPENCER ROAD)		NO.	SHEETS
DATE	DESIGN APPROVAL	31	40
1/24	1/24		
PROJECT FILE NO.		609179	

TYPICAL SECTIONS - N SPENCER RD



**TYPICAL SECTION  
NORTH SPENCER ROAD  
PAVEMENT MILLING AND OVERLAY**

STA. 4+00.50 TO 4+23.53

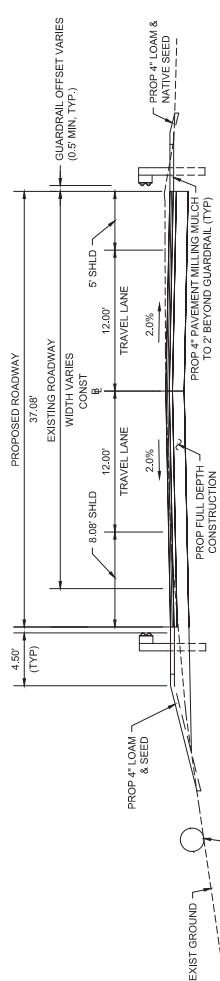


**TYPICAL SECTION  
NORTH SPENCER ROAD  
FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

N.T.S.

STA. 0+00.00 TO 4+00.50

(\*MINOR BOX WIDENING 17' AND UP ALONG ENTIRE STATION RANGE)

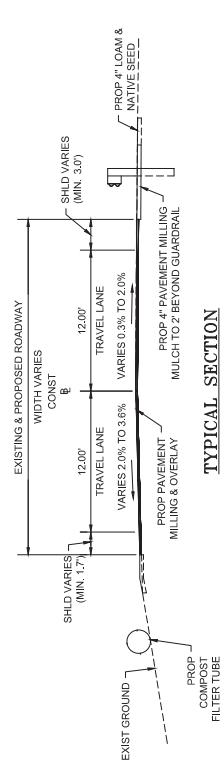


**TYPICAL SECTION  
NORTH SPENCER ROAD  
FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

N.T.S.

STA. 1+47.00 TO 1+70.00

(\*MINOR BOX WIDENING 17' AND UP ALONG ENTIRE STATION RANGE)



**TYPICAL SECTION  
NORTH SPENCER ROAD  
PAVEMENT MILLING AND OVERLAY**

N.T.S.

STA. 1+52.80 TO 1+77.80

**PAVEMENT NOTES**

PROPOSED FULL DEPTH PAVEMENT SURFACE: 1.5\"/>

INTERMEDIATE: 2.0\"/>

BASE: 4.0\"/>

SUBBASE: 12\"/>

PROPOSED PAVEMENT MILLING & OVERLAY SURFACE: 1.5\"/>

ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/SY OVER EXISTING PAVEMENT FINE MILL, VARIABLE DEPTH (0.2-5\") TO MEET PROPOSED GRADING

PROPOSED HMA BRIDGE WEARING COURSE (AS PER BRIDGE ENGINEER APPROVAL) SURFACE: 1.5\"/>

PROTECTIVE: VARIES 1.5\"/>

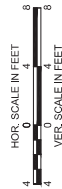
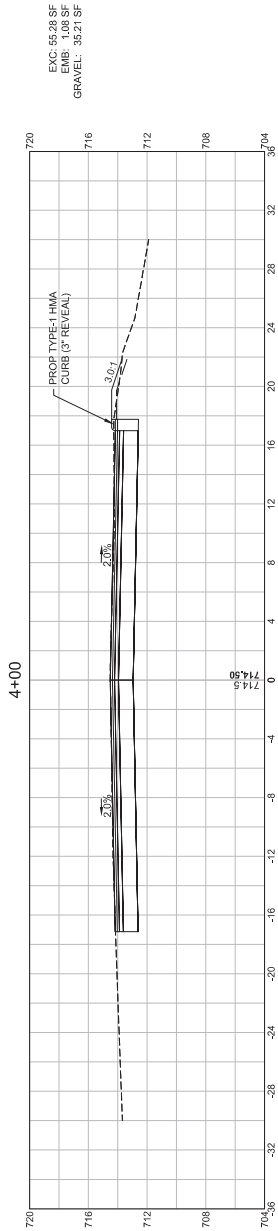
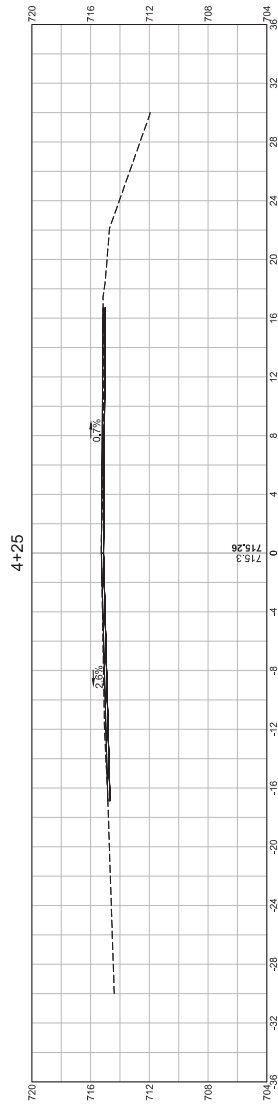
NOTE: 1. ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/SY OVER MILLED SURFACE ASPHALT EMULSION FOR TACK COAT AT 0.06 TO 0.08 GAL/SY OVER INTERMEDIATE AND BASE COURSE. TACK SHALL BE RS-1H.

2. PLACE SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B-9.5-P) IN LIFTS NOT TO EXCEED 1.875\"/>

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

DATE	DESIGNED BY	CHECKED BY	SHEET NO.	TOTAL SHEETS
1/15/11	1/15/11	1/15/11	42	40
PROJECT FILE NO. 609179				

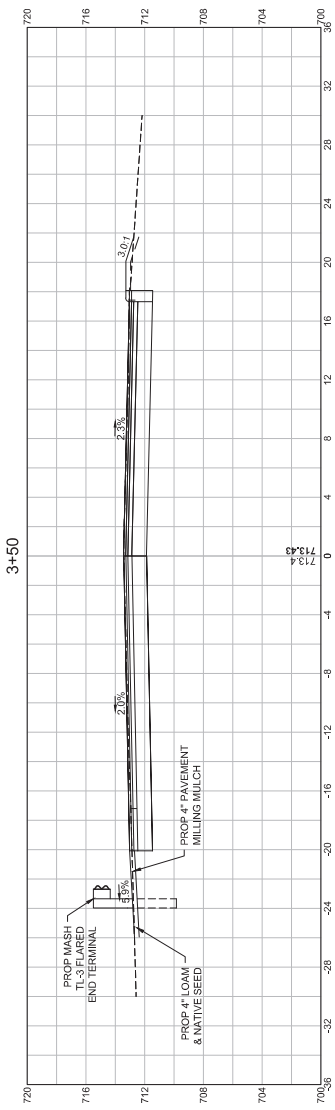
**CROSS SECTIONS ST 31**



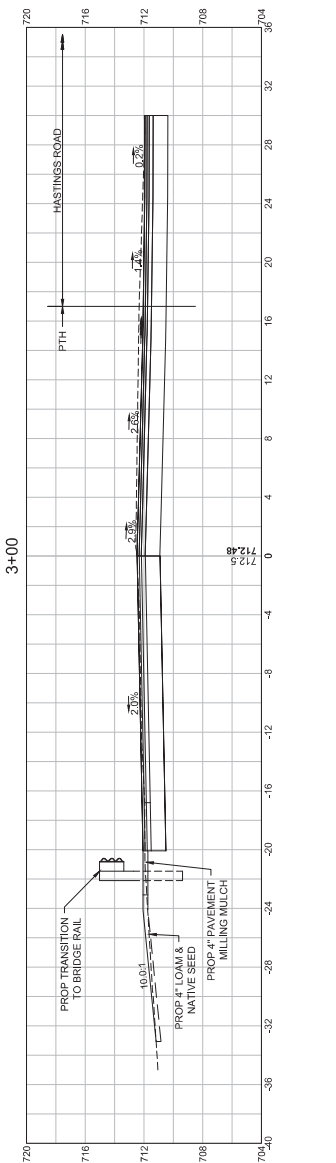
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET TOTAL
MA	#####	40 OF 40
PROJECT FILE NO. 609179		

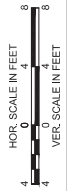
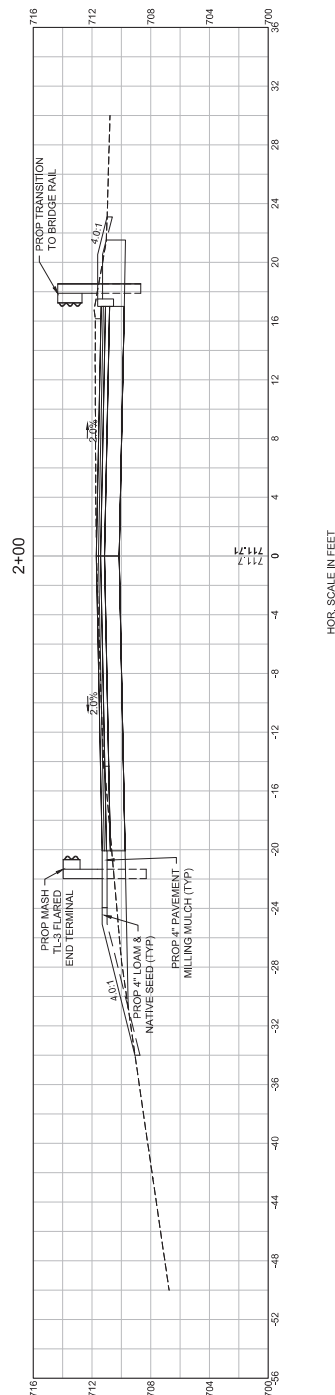
EXC: 59.81 SF  
 EMB: 1.55 SF  
 GRAVEL: 38.49 SF



EXC: 61.60 SF  
 EMB: 2.20 SF  
 GRAVEL: 37.07 SF



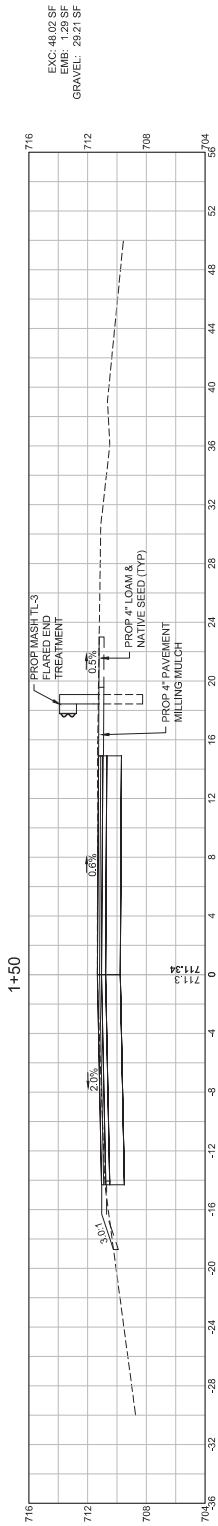
EXC: 71.33 SF  
 EMB: 5.28 SF  
 GRAVEL: 53.62 SF



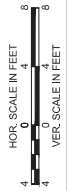
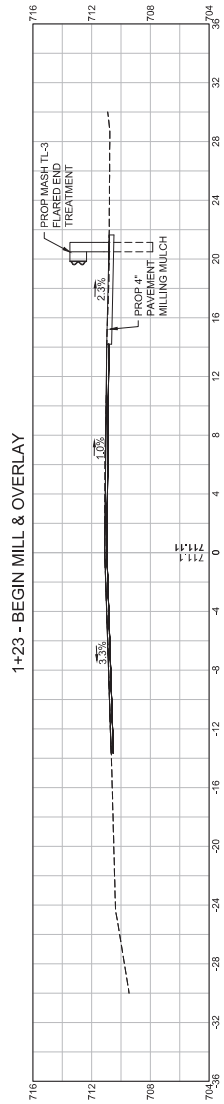
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

DATE	DESIGNED BY	CHECKED BY	TOTAL SHEETS
10/11/11	10/11/11	10/11/11	42
10/11/11	10/11/11	10/11/11	40
PROJECT FILE NO.			609179

**CROSS SECTIONS ST 31**



EXC: 48.02 SF  
 GRVEL: 28.21 SF



## **APPENDIX H: WETLAND RESOURCE DELINEATION REPORT**



**Wetland Resource Delineation Report  
North Spencer Road (Route 31) over Seven Mill River  
Spencer, MA  
November 25, 2020**

The project site is the location of improvements to the North Spencer Road bridge over the Seven Mile River in Spencer, MA. The project location is indicated in Figure 1 below.

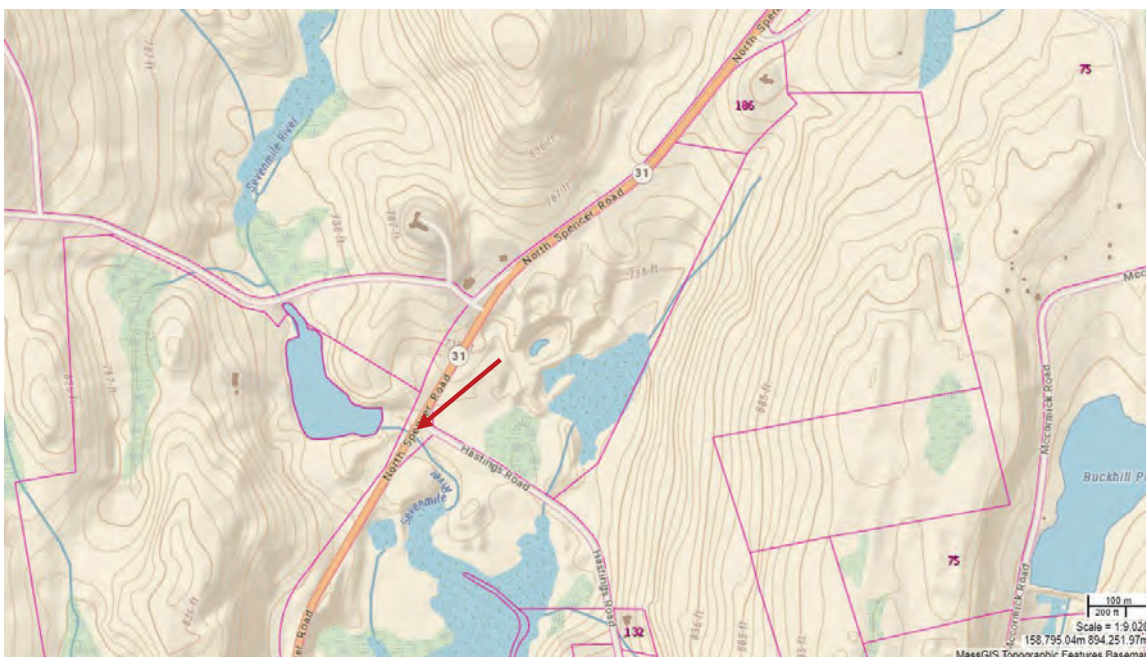


Fig. 1: MassGIS Base Map

Rimmer Environmental Consulting (REC) conducted a field inspection of the project area on October 15 and 27, 2020. At that time, wetland resources subject to jurisdiction under the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) and the Town of Spencer Conservation Commission Rules and Regulations were delineated. Numbered sequences of flags were placed in the field to delineate the boundary between upland and wetland resources.

The following is a description of resource areas present:

*Riverfront Area*

The Seven Mile River is indicated as a perennial stream on the USGS topographic map of the project site and is therefore presumed under 310 CMR 10.58 to contain a 200-foot Riverfront Area extending horizontally from the limits of mean high water (MHW) under state and local wetland regulations. MHW was identified by changes in slope, changes

in vegetation and water marks and undercut banks. It was delineated by flags D1-D12 and A1-A4 on the downstream south bank, and A5-A8, and C1-C15 on the downstream north bank. The upstream Riverfront Area extended to the dam and includes flags A9-A13 on the north bank and A14-A19 on the south bank.

#### *Land Under a Waterbody (LUW)*

LUW resource was not specifically delineated but includes land beneath the river to the mean annual low water (MALW) level. This resource is regulated under both state and local wetland protection regulations

#### *Inland Bank*

Inland Bank is regulated under 310 CMR 10.54 as well as the local wetland bylaw and includes the land that abuts and confines a waterbody. The upper boundary of Bank is defined as the first observable break in slope or the mean annual flood level, whichever is lower, and the lower boundary is the mean annual low flow level. Within this portion of the Seven Mile River, the upper boundary of Bank resource was determined to be coincident with the limit of Riverfront Area described above.

#### *Bordering Vegetated Wetland*

There is small area of scrub-shrub wetland extending from the upstream north bank which beginning at flag B1 and extending to flag B3. The wetland includes a narrow fringe of common winterberry (*Ilex verticillata*) with an understory of sensitive fern (*Onoclea sensibilis*) and broom sedge (*Carex scoparia*). The adjacent pland consists of eastern white pine (*Pinus strobus*) and multiflora rose (*Rosa multiflora*).

The southwest bank also contains wetland extending from it. This wetland was delineated by flags E1-E5 and is a forested swamp dominated by red maple (*Acer rubrum*) in the overstory with alder buckthorn (*Frangula alnus*) in the understory. Poison ivy (*Toxicodendron radicans*), bristly dewberry (*Rubus hispidus*) and sensitive fern are common groundcover in this area.

On the north side of Hastings Road, approximately 285 feet southeast of the intersection with North Spencer Road, is a finger of a larger off-site wetland that extends to the road shoulder. The vegetative community is similar to the E series described above. It was delineated by flags F1-F6.

DEP Bordering Vegetated Wetland Delineation Field Data Forms are attached which provide additional documentation of this wetland boundary. There is a 100-foot Buffer Zone extending horizontally from these flags under both state and local wetland regulations.

#### *Bordering Land Subject to Flooding (BLSF)*

BLSF includes land subject to inundation from rising creeks, rivers, streams, and other waterbodies as defined in 310 CMR 10.57 and the Spencer Wetland Bylaw. Its upper boundary is generally determined by reference to the most current FEMA flood

mapping. The FEMA map provided as Figure 2 below indicates this portion of the Seven Mile River contains a Zone A 100-year flood elevation extending from its banks. No elevation is provided. There is no Buffer Zone associated with this resource under state regulations, but there is under the local wetland regulations.



Fig. 2: FEMA Flood Map

### Other Resources

The site is located within Estimated Habitat of Rare Wetland Wildlife and Priority Habitat and as determined by reference to the most recently available data on MassGIS. Prior notification to the Division of Fisheries and Wildlife – Natural Heritage and Endangered Species Program (NHESP) will be required prior to commencement of work in this area.



Fig. 3: NHESP Priority Habitat





10-15-20 View downstream



10-15-20 View upstream

## DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: Spencer Prepared by: REC Project location: North Spencer Rd/Seven Mile Ri DEP File #: \_\_\_\_\_

Check all that apply:

- Vegetation alone presumed adequate BVW boundary: fill out section I only
- Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- Method other than dominance test used (attach additional information)

**Section I. Vegetation:** Observation plot Number: wef Transect number: B2 Date of delineation: 10/15/20

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree				
shrub				
common winterberry/Ilex verticillata	38	100	Y	FACW*
Groundcover				
sensitive fern/Onoclea sensibilis	20.5	66	Y	FACW*
pointed broom sedge/Carex scoparia	10.5	34	Y	FACW*

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

**Vegetation conclusion:**

**Number of dominant wetland indicator plants: 3** Number of dominant non-wetland plants: **0**

**Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?**  yes  no

*If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent*

MADEP; 3/95

## Section II. Indicators of Hydrology

### Hydric Soil Interpretation

#### 1. Soil Survey

Is there a published soil survey for this site?

Title/date:

Map number:

Soil type mapped:

Hydric soil inclusions:

Are field observations consistent with soil survey?  yes  no

Remarks:

#### 2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
A	0-3	10YR 2/2	
B	3-12"	10YR 4/2	10YR 5/8

Remarks

#### 3. Other

Conclusion: Is soil hydric?  yes  no

Other Indicators of Hydrology: (check all that apply and describe)

Site inundated: \_\_\_\_\_

Depth to free water in observation hole: \_0"\_\_\_\_\_

Water marks: \_\_\_\_\_

Drift lines: \_\_\_\_\_

Sediment deposits: \_\_\_\_\_

Drainage patterns in BVW: \_\_\_\_\_

Oxidized rhizospheres: \_\_\_\_\_

Water-stained leaves: \_\_\_\_\_

Recorded data(stream, lake, or tidal gauge; aerial photo, other): \_\_\_\_\_

Other: \_\_\_\_\_

### Vegetation and Hydrology Conclusion

Yes No

Number of wetland indicator plants

≥ number of non-wetland indicator plants:

Wetland hydrology present:

Hydric soil present

Other indicators of hydrology present:

Sample location is in a BVW

## DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: Spencer Prepared by: REC Project location: North Spencer Rd/Seven Mile Ri DEP File #: \_\_\_\_\_

Check all that apply:

- Vegetation alone presumed adequate BVW boundary: fill out section I only
- Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- Method other than dominance test used (attach additional information)

**Section I. Vegetation:** Observation plot Number: up Transect number: B2 Date of delineation: 10/15/20

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree eastern white pine/Pinus strobus	63	100	Y	FACU
Shrub multiflora rose/Rosa multiflora Groundcover	20.5	100	Y	FACU

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

**Vegetation conclusion:**

**Number of dominant wetland indicator plants: 0** **Number of dominant non-wetland plants: 2**

**Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?**  yes  no

*If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent*

MADEP; 3/95

## Section II. Indicators of Hydrology

### Hydric Soil Interpretation

#### 1. Soil Survey

Is there a published soil survey for this site?

Title/date:

Map number:

Soil type mapped:

Hydric soil inclusions:

Are field observations consistent with soil survey?  yes  no

Remarks:

#### 2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
A	0-2'	10YR 2/2	
B	2-16'	10YR 4/4	

Remarks

#### 3. Other

Conclusion: Is soil hydric?  yes  no

Other Indicators of Hydrology: (check all that apply and describe)

Site inundated: \_\_\_\_\_

Depth to free water in observation hole: \_\_\_ \_\_\_\_\_

Water marks: \_\_\_\_\_

Drift lines: \_\_\_\_\_

Sediment deposits: \_\_\_\_\_

Drainage patterns in BVW: \_\_\_\_\_

Oxidized rhizospheres: \_\_\_\_\_

Water-stained leaves: \_\_\_\_\_

Recorded data(stream, lake, or tidal gauge; aerial photo, other): \_\_\_\_\_

Other: \_\_\_\_\_

### Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants $\geq$ number of non-wetland indicator plants:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetland hydrology present: Hydric soil present	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other indicators of hydrology present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample location is in a BVW	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: Spencer Prepared by: REC Project location: North Spencer Rd/Seven Mile Ri DEP File #: \_\_\_\_\_

Check all that apply:

- Vegetation alone presumed adequate BVW boundary: fill out section I only
- Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- Method other than dominance test used (attach additional information)

**Section I. Vegetation:** Observation plot Number: wef Transect number: E2 Date of delineation: 10/27/20

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree red maple/Ace rubrum shrub	63	100	Y	FAC*
common winterberry/Ilex verticillata Groundcover	20.5	100	Y	FACW*
bristly dewberry/Rubus hispidus	20.5	100	Y	FACW*

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

**Vegetation conclusion:**

**Number of dominant wetland indicator plants: 3** Number of dominant non-wetland plants: **0**

**Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?**  yes  no

*If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent*

MADEP; 3/95

## Section II. Indicators of Hydrology

### Hydric Soil Interpretation

#### 1. Soil Survey

Is there a published soil survey for this site?

Title/date:

Map number:

Soil type mapped:

Hydric soil inclusions:

Are field observations consistent with soil survey?  yes  no

Remarks:

#### 2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
A	0-4	10YR 2/2	
B	4012"	10YR 4/2	10YR 5/8

Remarks

#### 3. Other

Conclusion: Is soil hydric?  yes  no

Other Indicators of Hydrology: (check all that apply and describe)

Site inundated: \_\_\_\_\_

Depth to free water in observation hole: \_\_\_\_\_

Water marks: \_\_\_\_\_

Drift lines: \_\_\_\_\_

Sediment deposits: \_\_\_\_\_

Drainage patterns in BVW: \_\_\_\_\_

Oxidized rhizospheres: \_\_\_\_\_

Water-stained leaves: \_\_\_\_\_

Recorded data (stream, lake, or tidal gauge; aerial photo, other): \_\_\_\_\_

Other: \_\_\_\_\_

### Vegetation and Hydrology Conclusion

Yes No

Number of wetland indicator plants  $\geq$  number of non-wetland indicator plants:

Wetland hydrology present:  
Hydric soil present

Other indicators of hydrology present:

Sample location is in a BVW

## DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: Spencer Prepared by: REC Project location: North Spencer Rd/Seven Mile Ri DEP File #: \_\_\_\_\_

Check all that apply:

- Vegetation alone presumed adequate BVW boundary: fill out section I only
- Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- Method other than dominance test used (attach additional information)

**Section I. Vegetation:** Observation plot Number: up Transect number: E2 Date of delineation: 10/27/20

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree black cherry/ <i>Prunus serotina</i>	63	100	Y	FACU
Shrub honeysuckle/ <i>Lonicera tatarica</i>	20.5	50	Y	FACU
multiflora rose/ <i>Rosa multiflora</i>	20.5	50	Y	FACU

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

**Vegetation conclusion:**

**Number of dominant wetland indicator plants: 0** **Number of dominant non-wetland plants: 3**

**Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?**  yes  no

*If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent*

MADEP; 3/95



## Section II. Indicators of Hydrology

### Hydric Soil Interpretation

#### 1. Soil Survey

Is there a published soil survey for this site?

Title/date:

Map number:

Soil type mapped:

Hydric soil inclusions:

Are field observations consistent with soil survey?  yes  no

Remarks:

#### 2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
A	0-4 4-12"	10YR 2/2	
B		10 YR 4/6	

Remarks

#### 3. Other

Conclusion: Is soil hydric?  yes  no

Other Indicators of Hydrology: (check all that apply and describe)

Site inundated: \_\_\_\_\_

Depth to free water in observation hole: \_\_\_\_

Water marks: \_\_\_\_\_

Drift lines: \_\_\_\_\_

Sediment deposits: \_\_\_\_\_

Drainage patterns in BVW: \_\_\_\_\_

Oxidized rhizospheres: \_\_\_\_\_

Water-stained leaves: \_\_\_\_\_

Recorded data(stream, lake, or tidal gauge; aerial photo, other): \_\_\_\_

Other: \_\_\_\_\_

### Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants	<input type="checkbox"/>	<input checked="" type="checkbox"/>
≥ number of non-wetland indicator plants:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetland hydrology present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hydric soil present	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other indicators of hydrology present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample location is in a BVW	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: Spencer Prepared by: REC Project location: North Spencer Rd/Seven Mile Ri DEP File #: \_\_\_\_\_

Check all that apply:

- Vegetation alone presumed adequate BVW boundary: fill out section I only
- Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- Method other than dominance test used (attach additional information)

**Section I. Vegetation:** Observation plot Number: wef Transect number: F2 Date of delineation: 10/27/20

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree red maple/Ace rubrum shrub	63	100	Y	FAC*
common winterberry/Ilex verticillata Groundcover	38	100	Y	FACW*
bristly dewberry/Rubus hispidus	20.5	100	Y	FACW*

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

**Vegetation conclusion:**

**Number of dominant wetland indicator plants: 3** Number of dominant non-wetland plants: **0**

**Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?**  yes  no

*If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent*

MADEP; 3/95

## Section II. Indicators of Hydrology

### Hydric Soil Interpretation

#### 1. Soil Survey

Is there a published soil survey for this site?

Title/date:

Map number:

Soil type mapped:

Hydric soil inclusions:

Are field observations consistent with soil survey?  yes  no

Remarks:

#### 2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
A	0-5	10YR 2/1	
B	4012"	10YR 4/2	

Remarks

#### 3. Other

Conclusion: Is soil hydric?  yes  no

Other Indicators of Hydrology: (check all that apply and describe)

Site inundated: \_\_\_\_\_

Depth to free water in observation hole: \_\_\_\_

Water marks: \_\_\_\_\_

Drift lines: \_\_\_\_\_

Sediment deposits: \_\_\_\_\_

Drainage patterns in BVW: \_\_\_\_\_

Oxidized rhizospheres: \_\_\_\_\_

Water-stained leaves: \_\_\_\_\_

Recorded data(stream, lake, or tidal gauge; aerial photo, other): \_\_\_\_

Other: \_\_\_\_\_

### Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants	<input checked="" type="checkbox"/>	<input type="checkbox"/>
≥ number of non-wetland indicator plants:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wetland hydrology present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hydric soil present	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other indicators of hydrology present:	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample location is in a BVW	<input checked="" type="checkbox"/>	<input type="checkbox"/>

## DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Form

Applicant: Spencer Prepared by: REC Project location: North Spencer Rd/Seven Mile Ri DEP File #: \_\_\_\_\_

Check all that apply:

- Vegetation alone presumed adequate BVW boundary: fill out section I only
- Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out sections I and II
- Method other than dominance test used (attach additional information)

**Section I. Vegetation:** Observation plot Number: up Transect number: F2 Date of delineation: 10/27/20

A. Sample layer and plant species (by common name/scientific name)	B. Percent cover (or basal area)	C. Percent Dominance	D. Dominant Plant (yes or no)	E. Wetland Indicator Category*
Tree eastern white pine/Pinus strobus	63	85	100	FACU
Shrub honeysuckle/Lonicera tatarica	20.5	50	Y	FACU
witch hazel/Hamamelis virginiana	20.5	50	Y	FACU

Use an asterisk to mark wetland indicator plants: species listed in the Wetlands Protection Act (MGL c. 131, s. 40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FAC-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

**Vegetation conclusion:**

**Number of dominant wetland indicator plants: 0** **Number of dominant non-wetland plants: 3**

**Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?**  yes  no

*If vegetation alone is presumed adequate to delineate the BVW boundary, submit this form with the Request for Determination of Applicability or Notice of Intent*

MADEP; 3/95

## Section II. Indicators of Hydrology

### Hydric Soil Interpretation

#### 1. Soil Survey

Is there a published soil survey for this site?

Title/date:

Map number:

Soil type mapped:

Hydric soil inclusions:

Are field observations consistent with soil survey?  yes  no

Remarks:

#### 2. Soil description

Horizon	Depth	Matrix Color	Mottles Color
A	0-4 4-12"	10YR 2/2	
B		10 YR 4/6	

Remarks

#### 3. Other

Conclusion: Is soil hydric?  yes  no

Other Indicators of Hydrology: (check all that apply and describe)

Site inundated: \_\_\_\_\_

Depth to free water in observation hole: \_\_\_\_

Water marks: \_\_\_\_\_

Drift lines: \_\_\_\_\_

Sediment deposits: \_\_\_\_\_

Drainage patterns in BVW: \_\_\_\_\_

Oxidized rhizospheres: \_\_\_\_\_

Water-stained leaves: \_\_\_\_\_

Recorded data(stream, lake, or tidal gauge; aerial photo, other): \_\_\_\_

Other: \_\_\_\_\_

### Vegetation and Hydrology Conclusion

	Yes	No
Number of wetland indicator plants	<input type="checkbox"/>	<input checked="" type="checkbox"/>
≥ number of non-wetland indicator plants:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Wetland hydrology present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hydric soil present	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other indicators of hydrology present:	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sample location is in a BVW	<input type="checkbox"/>	<input checked="" type="checkbox"/>



**APPENDIX I: MUSSEL SURVEY REPORT & DRAFT  
TRANSLOCATION PLAN**

January 25, 2021

REPORT

Freshwater Mussel Survey in the Sevenmile River for Proposed Replacement of the North Spencer Road Bridge (Spencer, MA)

**Introduction:** Biodrawversity LLC conducted a freshwater mussel survey in the Sevenmile River as part of the planning and permitting for the replacement of the North Spencer Road Bridge in Spencer, Massachusetts. The survey was intended to document the presence, distribution, and density of any state-listed mussel species in areas that would be affected by the proposed project, to develop a management plan if target species were found, and to identify a potential translocation site a safe distance away from the project area. Based on previous surveys in the Sevenmile River, target mussel species included only *Strophitus undulatus* (Creeper; Species of Special Concern).

**Survey Date and Conditions:** The survey was conducted on October 22, 2020. Weather was sunny and warm. The Massachusetts Natural Heritage and Endangered Species Program (NHESP) was consulted about survey timing, as mussel surveys are typically completed by late September. Nevertheless, central Massachusetts was in a moderate drought, streamflows were very low, and mild weather kept water temperatures in the upper 50s. Mussels were still active. Fallen leaves made it challenging to survey some areas of the streambed, but otherwise conditions were ideal for the survey.

**Survey Methods:** The mussel survey was conducted in all areas where the stream bottom may be affected by project-related construction, including a buffer extending upstream to the Spencer Abbey Dam, and a 100-meter downstream buffer (Figure 1). Biologists searched for freshwater mussels at the sediment surface by snorkeling and wading with a clear-bottom bucket. A potential translocation site a safe distance downstream from the project area was also identified and assessed; an upstream relocation site was not considered because of the short distance from the bridge to the Spencer Abbey Dam. Biologists recorded the shell length, shell condition, habitat (depth and substrate), and location (using GPS) of every state-listed mussel. Biologists also photographed mussels and their habitat.

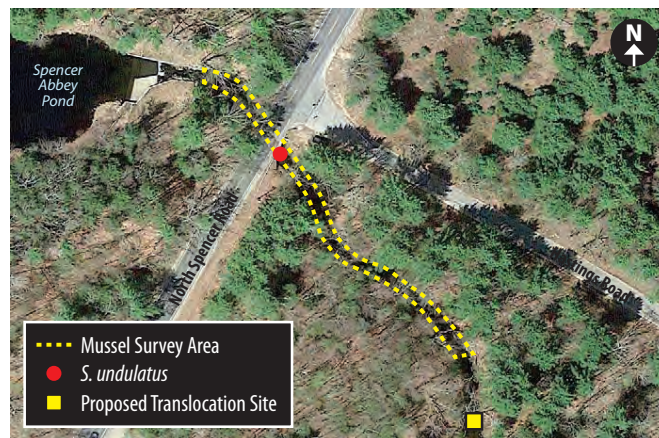
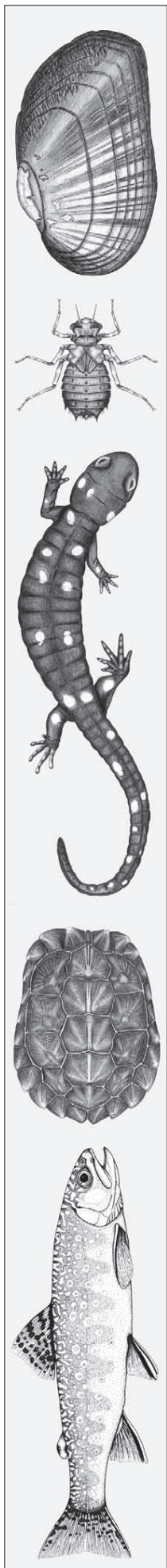


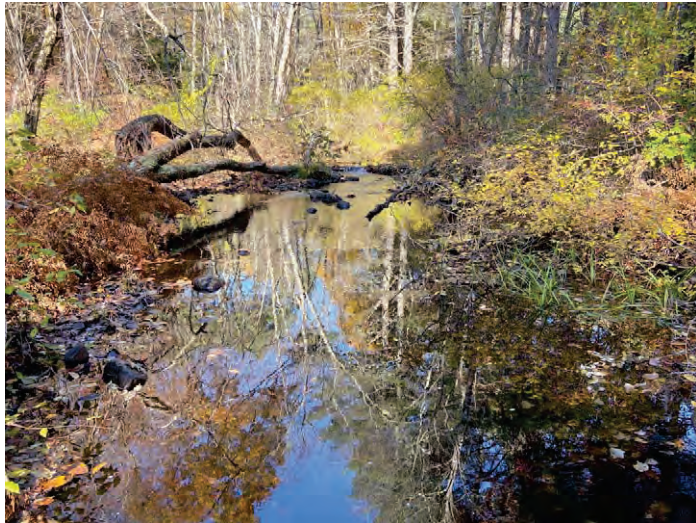
Figure 1. Survey area, state-listed mussel location, and proposed translocation site in the Sevenmile River at the North Spencer Road bridge.

**Survey Results:** Four species were found, including *S. undulatus*, *Alasmidonta undulata* (triangle floater), *Elliptio complanata* (eastern elliptio), and *Pyganodon cataracta* (eastern floater). Only *S. undulatus* is state-listed in Massachusetts. Several hundred *E. complanata*, ~150 *A. undulata*, fewer than 10 *P. cataracta*, and one *S. undulatus* were found. The *S. undulatus* was 87.0 mm in length, exhibited moderate-heavy shell erosion, and was found in shallow water (~10 inches) in a patch of *Sparganium* just downstream from the bridge (Figure 1).

Because *S. undulatus* was detected near the bridge, likely triggering the requirement for a pre-construction translocation effort, a potential translocation site was identified and assessed down-







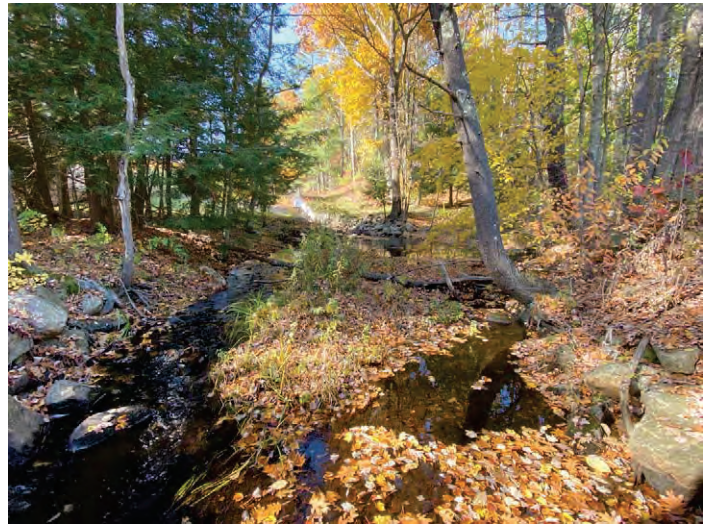
Sevenmile River near the downstream end of the mussel survey area.



Sevenmile River just downstream from the North Spencer Road bridge.



North Spencer Road bridge; this is where *S. undulatus* was detected.



Sevenmile River upstream from the North Spencer Road bridge.

stream from the survey area (Figure 1). A brief survey confirmed the presence of mussels (*E. complanata* and *A. undulata* only) and habitat that would be suitable for *S. undulatus*. Water depth was generally less than 2.0 ft, water velocity was slow, substrate was a mix of silt, sand, gravel and cobble, and there was instream cover (large woody debris).

**Conclusion:** The state-listed *S. undulatus* was detected in an area that would be affected by bridge replacement. Therefore, NHESP will likely require a pre-construction mussel sweep to collect and translocate mussels to a safe location. NHESP has developed standard protocols for these types of projects. A draft mussel management plan is included in this report, based on NHESP protocols and site-specific considerations.



*Strophitus undulatus* (creeper) found during the survey.



One of the >100 *Alasmidonta undulata* (triangle floater) found.

## DRAFT MUSSEL TRANSLOCATION PLAN

- Mussel sweeps and translocations will be conducted in accordance with *NHESP Endangered Species Translocation Guidelines: Freshwater Mussels*. *Strophitus undulatus* (creeper) is the only target (state-listed) mussel species in the project area.
- Translocation will be conducted within the construction footprint, a 50-meter downstream buffer, and a 25-meter upstream buffer. These buffer distances are fairly standard for these types of bridge replacement projects, but may be adjusted depending on the final design and construction plans, which are not yet completed.
- Translocation can be done anytime from early May to late September, only during the following conditions: water temperature >60.0F, high water clarity, normal river flows (i.e., average or below-average discharge), and fair weather.
- Biologists will conduct a visual and tactile search throughout the survey area. Visual searches will be conducted through the entire area. Tactile searches will focus on areas near where *S. undulatus* are found and where juvenile habitat exists; this will entail sweeping/fanning fine sediments, using fingertips to gently rake the bottom, and excavating within quadrats.
- A minimum of 50 0.25m<sup>2</sup> quadrats will be excavated to a depth of 10cm and washed through a 5-mm sieve to detect buried mussels. Mussel counts will be recorded separately for visual surveys and quadrats (surface vs. buried).
- *S. undulatus* will be gathered and held underwater in enclosures during the collection process. If 10 or more *S. undulatus* are found, each mussel will be tagged with a durable plastic tag affixed with super glue, measured, and photographed. If fewer than 10 are found, they will not be tagged, nor will follow-up monitoring be required.
- *S. undulatus* will be transported to a translocation site identified during the initial survey. They will be carefully placed near each other in the streambed. If 10 or more *S. undulatus* were found, then biologists will install permanent markers on the streambed to facilitate finding these mussels during follow-up monitoring.
- Tagged mussels will be checked for survival and movement one month and one year following translocation. Tag numbers, mortality, and any movement outside of the translocation area will be recorded during the 1-month survey, and the same information along with shell lengths and conditions of all tagged mussels will be recorded during the 1-year survey.
- A written report will be prepared according to the standards outlined in the *NHESP Endangered Species Translocation Guidelines: Freshwater Mussels*.



February 7, 2022

Ms. Mary Baker-Wood  
Town of Spencer Historical Commission  
157 Main Street  
Spencer, MA 01562

**RE: MASSDOT PROJECT # 609179 - BRIDGE REPLACEMENT, S-23-012  
NORTH SPENCER ROAD (ST 31) OVER SEVEN MILE RIVER  
SECTION 106 REVIEW**

Dear Ms. Baker-Wood:

The Massachusetts Department of Transportation, Highway Division (MassDOT) is planning to replace Bridge No. S-23-012, which carries North Spencer Road (Route 31) over the Seven Mile River in Spencer. It is anticipated that this project will be supported in part with federal funds and will require review under Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800). The enclosed project information is provided for the Spencer Historical Commission review in compliance with the regulations governing Section 106.

**Scope of Work:** The existing bridge has reached the end of its service life and needs to be replaced. The existing bridge structure will be replaced while maintaining vehicle traffic during construction. The proposed structure will be 40'-0" wide with a curb to curb roadway width of 36'-9". The proposed structure will be a precast concrete three-sided box with precast concrete footings. The structure clear span length will be 25'0", or 1.2 times the existing clear span of 20' 3". New curbing, guardrail, and paving of the area adjacent to the bridge will be include as part of the project.

MassDOT Highway Division and the Town of Spencer request that the Spencer Historical Commission review the enclosed materials at its earliest convenience, and solicit any comments that the Commission wishes to make regarding this project. Written comments should be submitted to: Carrie Lavalley, P.E., Chief Engineer, MassDOT Highway Division, 10 Park Plaza, Boston, MA 02116, Attn: Jeffrey Shrimpton.

If you have any questions concerning the enclosed project information, please feel free to contact William F. Brown (774-266-1712) [william.f.brown@state.ma.us](mailto:william.f.brown@state.ma.us) of MassDOT Highway Division's Project Management Section. If you have any questions concerning the Section 106 process, please feel free to contact Jeffrey Shrimpton [jeffrey.shrimpton@state.ma.us](mailto:jeffrey.shrimpton@state.ma.us) (857-368-8824) of MassDOT Highway Division's Cultural Resources Unit.

Sincerely yours,

A handwritten signature in black ink that reads "Lucas H. Perkins".

BAYSIDE ENGINEERING, INC.  
Lucas H. Perkins  
Project Engineer & Surveyor

atts: locus map

cc: B. Simon SHPO/MHC, with attachments  
J. Shrimpton, MassDOT, with attachments

## **APPENDIX J: O&M AND LTPPP**

# ***Replacement of Bridge No. S-23-012 over Sevenmile River***

Stormwater Management System  
Operation and Maintenance Plan and  
Long-Term Pollution Prevention Plan  
*Spencer, MA*

PREPARED FOR

---

***massDOT***

10 Park Plaza  
Boston, MA 02116

PREPARED BY

---



600 Unicorn Park Drive  
Woburn, MA, 01801

7/27/2023



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# 1

## Stormwater Management System Operation and Maintenance (O&M) Plan

This Stormwater Management System Operation and Maintenance (O&M) Plan describes the approach for inspection and maintenance of drainage infrastructure and structural stormwater control measures (SCMs) to minimize contaminant loading for the Proposed Replacement of Bridge No. S-23-012 along North Spencer Road (ST 31) over Sevenmile River in Spencer, Massachusetts. In general, inspection and maintenance activities will be conducted consistent with the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer System (MS4) and MassDOT's anticipated NPDES Transportation Separate Storm Sewer System (TS4) Permit.

This document has been prepared per the requirements of Massachusetts Department of Environmental Protection (MassDEP) Regulations 310 CMR 10.05 (6)(k)(9) and satisfies the requirements of Massachusetts Stormwater Standard 9.

### 1.1 Responsible Party

In accordance with MassDOT procedures, the MassDOT District 3 office located in Worcester, MA, is responsible for the maintenance of all stormwater management systems on MassDOT roads within the project area.

Questions or concerns regarding activities associated with this O&M Plan should be addressed to MassDOT's District 3 office located at 499 Plantation Parkway, Worcester, MA 01605, phone (857) 368-3000, during regular weekday hours, or to MassDOT's Highway Operations Center located in South Boston, MA at (800) 227-0608 during all other times and days, including weekends and holidays.

### 1.2 Inspection and Maintenance Measures and Record-Keeping

The stormwater management system covered by this O&M Plan consists of the following measures:

- *Vegetated Filter Strip*



MassDOT uses a performance-based inspection and maintenance program for SCMs. MassDOT’s overall approach is to inspect SCMs, and based on the results of the inspections, perform maintenance to preserve functionality.

MassDOT’s O&M program is data driven. Inspections and maintenance are recorded by personnel using hand-held tablets in the field to document sediment accumulation, maintenance action performed, and follow-up actions needed. Data are recorded in MassDOT’s asset management system which is accessible in the field (mobile) or the office (desktop).

The table below summarizes data that is generally collected for each asset type. For all assets, the inspector and inspection date are recorded. Photo documentation of structure condition is taken and attached to the inspection record.

Inspection Form	Applicable Stormwater Assets	Information Collected
SCMs	Consistent with the MassDOT Stormwater Design Guide (SDG), SCM categories include: <ul style="list-style-type: none"> <li>› Infiltration SCMs</li> <li>› Stormwater wetland SCMs</li> <li>› Bioretention SCMs</li> <li>› Other SCMs</li> </ul>	<ul style="list-style-type: none"> <li>› SCM accessibility</li> <li>› Presence of standing water</li> <li>› Level of erosion</li> <li>› Sediment accumulation</li> <li>› Trash/Debris accumulation</li> <li>› Vegetation condition</li> <li>› Overall SCM condition</li> </ul>

Inspection and maintenance records can be made available using the asset management system through request with the MassDOT District 3 Environmental Engineer. Records will be kept for at least three years. Representatives of the Spencer Conservation Commission, MassDEP, and US EPA may obtain access to these records, upon request. Additionally, MassDOT will allow members and agents of MassDEP and the Conservation Commission(s) to enter and inspect the premises, upon request, to evaluate and ensure that the Operation and Maintenance Plan requirements for each SCM are being followed.

Maintenance actions will not occur at any set frequency, but rather will be based on condition and impact to functionality. Maintenance to be performed on the stormwater system includes:

<i>Stormwater Feature</i>	<i>Potential Maintenance Actions</i>	
<i>Surface SCMs</i>	<ul style="list-style-type: none"> <li>• <i>Remove and properly dispose of accumulated material (e.g., sediment, trash, leaf litter, debris)</i></li> <li>• <i>Mow vegetated areas and remove and dispose of grass clippings (maintain 4-6" of dense grass cover)</i></li> <li>• <i>Regrade areas that show signs of unwanted ponding and channelization</i></li> <li>• <i>Stabilize or reconstruct eroded areas and reseed</i></li> <li>• <i>Replace stones/soil and/or replant vegetation</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Remove woody growth</i></li> <li>• <i>Treat invasive plants according to MassDOT Landscape Design Section</i></li> <li>• <i>Infiltration and bioretention SCMs only:</i> <ul style="list-style-type: none"> <li>○ <i>Address issues of standing water</i></li> <li>○ <i>Drain and reconstruct SCM</i></li> <li>○ <i>If rehabilitation is not possible, then retrofit to be a wet SCM while considering safety implications</i></li> </ul> </li> </ul>

Based on the results of the inspection, repairs will be made in accordance with MassDOT standard practices. Maintenance will be prioritized given the urgency of the required maintenance and availability of staff, contracts, etc. Maintenance may require contracting if existing contracts are unavailable to perform the work. More intensive remedial activities may require permitting and/or an engineering solution.

### 1.3 Erosion and Sediment Control Measures during Maintenance Activities

For maintenance activities that could result in discharges of sediments or other contaminants into wetlands, waterways, or other resource areas regulated under 310 CMR 10.00, the responsible maintenance personnel will employ measures to prevent migration of these sediments/contaminants. Such temporary measures may include, but are not necessarily limited to, the use of siltation barriers, catch basin silt sacks/filter bags, pipe plugs, cofferdams deployed within the stormwater structure, turbidity curtains, or other practices designed to prevent such discharges.

Where maintenance occurs in areas that are confined, with no risk of discharge to adjacent water bodies, no special measures may be needed. Examples include, but are not limited to: mowing

### 1.4 O&M Budget

MassDOT performs maintenance for stormwater management systems as part of their routine operation and maintenance budget for roadways and bridges. Budgets are managed at the district level and vary by fiscal year, depending on funding sources.

# 2

## Long-Term Pollution Prevention Plan

This Long-Term Pollution Prevention Plan (LTPPP) describes the approach for pollution prevention and related maintenance activities for the Proposed Replacement of Bridge No. S-23-012 along North Spencer Road (ST 31) over Sevenmile River in Spencer, Massachusetts. In general, long-term pollution prevention and related maintenance activities will be conducted consistent with:

- The National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Small Municipal Separate Storm Sewer System (MS4),
- MassDOT's anticipated NPDES Transportation Separate Storm Sewer System (TS4) Permit, and
- Measures outlined in MassDOT's Stormwater Management Plan (SWMP).

This LTPPP satisfies the requirements related to pollution prevention under Massachusetts Stormwater Standards 4, 5, 6, and 10.

### 2.1 Practices for Long-Term Pollution Prevention

For the facilities covered, long-term pollution prevention includes the following measures.

#### 2.1.1 Litter Pick-up

MassDOT will conduct litter pick-up from the stormwater management facilities in conjunction with routine road maintenance activities.

#### 2.1.2 Inspection and Maintenance of Stormwater Assets

MassDOT will conduct inspection and maintenance of drainage infrastructure and the stormwater control measures (SCMs) in accordance with the O&M Plan, as described in Section 1.

#### 2.1.3 Maintenance of Landscaped Areas

Routine mowing will be conducted according to standard MassDOT practices.

Except in rare circumstances, MassDOT does not use fertilizers, herbicides, and pesticides for the maintenance of facilities. Exceptions include using fertilizer to ensure the survival of new

plantings and herbicides to control invasive plants. Use of fertilizers and herbicides is reviewed and approved by the MassDOT Landscape Design Section and District 3 Environmental Engineer prior to application. Local Conservation Commission review may also be required.

### 2.1.4 Snow and Ice Management

Snow and Ice Management will be conducted consistent with the practices outlined in the MassDOT Snow and Ice Control Program Environmental Status and Planning Report (ESPR), formerly known as the Snow and Ice Control Generic Environmental Impact Report (GEIR).

In accordance with the Snow and Ice Control ESPR, no sand is used on MassDOT properties for snow and ice control. The exception to this rule is within reduced salt areas where high sodium levels have been found in drinking water sources. No portions of the site are within a water supply watershed or reduced-salt area.

### 2.1.5 Street Sweeping

Routine highway cleaning, with a brush-type street sweeper, will be conducted in accordance with standard MassDOT practices. Sweeping will occur annually in the Spring.

### 2.1.6 Prohibition of Illicit Discharges

The MassDEP Stormwater Management Standard 10 prohibits illicit discharges to the stormwater management system. Illicit discharges are discharges that do not consist entirely of stormwater, except for certain specified non-stormwater discharges.

In accordance with the existing MS4 permit and anticipated TS4 permit requirements, examples of discharges from the following sources are not considered illicit discharges:

- › Firefighting activities\*
- › Foundation drains
- › Water line flushing
- › Footing drains
- › Landscape irrigation
- › Individual residential car washing
- › Uncontaminated groundwater
- › Rising groundwater
- › Diverted stream flows
- › Flows from riparian habitats/wetlands
- › Potable water sources
- › Dechlorinated swimming pool water
- › Street wash waters
- › Wash water from residential buildings (no detergents)
- › Condensation from air conditioning units
- › Run-on from private driveways caused by precipitation
- › Lawn watering
- › Water from crawl space pumps

\*Water from firefighting activities is allowed and need only be addressed where they are identified as significant sources of pollutants to waters of the United States.

Based on plan review and confirmation in the field, there are no known or proposed illicit connections associated with the Proposed Replacement of Bridge No. S-23-012 along North Spencer Road (ST 31) over Sevenmile River in Spencer, Massachusetts. Should an interconnection to the stormwater management system be identified, the MassDOT PM will coordinate with the District Permits Engineer to confirm if the connections are authorized. For unauthorized connections, the MassDOT PM and/or MassDOT Environmental Services Section will investigate the connections and if they are determined to be illicit, the connections will be managed through MassDOT's Illicit Discharge Detection and Elimination (IDDE) program and/or through other agencies.



---

# Department of Environmental Protection

100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Maura T. Healey  
Governor

Kimberley Driscoll  
Lieutenant Governor

Rebecca L. Tepper  
Secretary

Bonnie Heiple  
Commissioner

December 5, 2023

Massachusetts Department of Transportation Highway Division  
Ten Park Plaza, Suite 4160  
Boston, MA 02116  
ATTN: Courtney Walker

RE: 401 WATER QUALITY CERTIFICATION  
Administrative Completeness and Technical Deficiency Review  
401 WQC Application No: 23-WW11-0020-APP

AT: Route 31 over the Sevenmile River (Bridge No. S-23-012)  
Spencer, MA

Dear Ms. Walker:

MassDEP has completed its Administrative Review of the application for the above-referenced application and notes that the application still requires proof of public notice to be administratively complete.

MassDEP has completed its Technical Review of the application for the above-referenced application and is requesting that you submit the following additional information:

1. Sheet 29 of the plans indicates that the sheeting used to control water will be cut off 12 inches below the proposed streambed. Please evaluate removing the sheeting in its entirety post construction as leaving it in place could potentially create a barrier to aquatic organism passage if there is any downcutting of the streambed.
2. There is riprap proposed at all four wingwalls for scour protection. Riprap contains large voids that can trap wildlife such as turtles. Use of modified rockfill with live stake plantings should be evaluated.

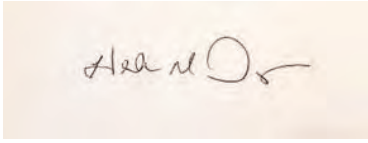
3. There are riprap revetments proposed under the bridge creating permanent impacts to LUW. Implementing a wildlife shelf with natural streambed material on one or both walls of the culvert should be evaluated.
4. The USGS StreamStats website estimates that the bankfull width of the Sevenmile River to be approximately 31.6 feet at the project site. This value is very different from the bankfull width of 17 feet, 1 inch noted in the application (which is identical to the width of the existing bridge span). Bankfull width measurements should never be taken at the span but should be measured 5- to 10 bankfull widths away from the structure. MassDEP acknowledges that bankfull width is not as wide as the StreamStats value at this site but estimates bankfull width to be a minimum of 20 feet. Consequently, it does not appear that Standard 3 of the Stream Crossing Standards has been met.
5. The narrative accompanying the application states that the design flood (25-year discharge) for the bridge is at EL 707.22; however, the plans show the 25-year flood elevation to be at EL 706.22. Please resolve this discrepancy.
6. The application states that a stormwater checklist was provided but it was not included. Please provide the checklist.
7. According to the application, the proposed project will increase impervious area by approximately 1060 square feet; this is to be pre-treated by the existing Vegetated Filter Strips which are to be reinforced with native seeding. This may represent an improvement in existing conditions as required by the redevelopment standards at 314 CMR 9.06(6)(a)7. However, the Stormwater Handbook states that filter strips may be used near a cold-water fishery **as part of a pre-treatment train**. As no other treatment component is proposed, filter strips do not meet the pretreatment component of Standard #6 to the maximum extent practicable. As a standalone Stormwater Control Measure (SCM), filter strips only provide a maximum TSS removal of 10%.

There should be further evaluation of measures that meet Standard 6 to the maximum extent practicable as the project is within a critical area. As there appears to be substantial area available (given that the filter strips are 25 feet in length), SCMs such as water quality swales constructed in accordance with the handbook should be evaluated. The handbook notes that water quality swales, if lined, are one of the best BMPs for areas discharging to cold-water fisheries.

Upon receipt of all requested supplemental information, MassDEP has 30 calendar days in which to issue or deny a certification.

Should you have any questions relative to this letter, please contact me at heidi.davis@mass.gov or Tyler Lewis at [tyler.lewis@mass.gov](mailto:tyler.lewis@mass.gov).

Sincerely,

A rectangular image showing a handwritten signature in black ink on a light-colored background. The signature appears to be "Heidi M. Davis" with a stylized flourish at the end.

Heidi M. Davis  
Highway Unit Supervisor

Ecc: DEP – CERO – Judy Schmitz  
MassDOT – Melissa Lenker  
MassDOT – Kylie Abouzeid  
USACE – Dan Vasconcelos  
Spencer Conservation Commission – Lauren Vivier - [lvivier@spencerma.gov](mailto:lvivier@spencerma.gov)  
Christopher Sokolowski – Bayside Engineering, Inc.





January 9, 2024

Massachusetts Department of Environmental Protection  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Attn: Heidi Davis

Re: DEP 401 WQC Application No. 23-WW11-0020-APP  
Bridge Replacement – Bridge No. S-23-012 Route 31 over Sevenmile River – Spencer, MA

Dear Ms. Davis,

Bayside Engineering Inc. has reviewed the Technical Review comments from MassDEP for the project and offers the following responses:

1. Comment: Sheet 29 of the plans indicates that the sheeting used to control water will be cut off 12 inches below the proposed streambed. Please evaluate removing the sheeting in its entirety post construction as leaving it in place could potentially create a barrier to aquatic organism passage if there is any downcutting of the streambed.

**Response: The proposed structure is a 3-sided precast box culvert type bridge and sheet piles are anticipated for control of water. The sheet piles will need to extend well below the bottom of the footers to maintain stability during excavation activities and retain water during normal flows and the design storm event. Since the sheeting will need to remain in place until the precast box culvert is secured atop the precast pedestal wall, the machinery required to remove the piles will be unable to access the piles under the bridge to remove them. The plans have been amended to indicate that sheet piling shall be removed where possible to minimize the amount that is left in place.**

2. Comment: There is riprap proposed at all four wingwalls for scour protection. Riprap contains large voids that can trap wildlife such as turtles. Use of modified rockfill with live stake plantings should be evaluated.

**Response: The plans have been altered to propose the use of modified rockfill with live stake plantings.**

3. Comment: There are riprap revetments proposed under the bridge creating impacts to LUW. Implementing a wildlife shelf with natural streambed material on one or both walls of the culvert should be evaluated.

**Response: Under the bridge, per the Streambed Restoration Plan and Items 983.35 Streambed Material Removed And Relaid and item 983.36 Natural Streambed Material, the streambed will be restored to replicate the function and appearance of the natural streambed. The implementation of a wildlife shelf with natural streambed material has been evaluated. In periods of Normal to Low Flow, the difference in streambed width between the existing abutments versus the proposed culvert walls provides some new streambed that can be graded during construction such that this area is passable by wildlife. The plans have been revised to provide this direction to the contractor.**



4. Comment: The USGS StreamStats website estimates that the bankfull width of the Sevenmile River to be approximately 31.6 feet at the project site. This value is very different from the bankfull width of 17 feet, inch noted in the application (which is identical to the width of the existing bridge span). Bankfull width measurements should never be taken at the span but should be measured 5- to 10 bankfull widths away from the structure. MassDEP acknowledges that bankfull width is not as wide as the StreamStats value at this site but estimates bankfull width to be a minimum of 20 feet. Consequently, it does not appear that Standard 3 of the Stream Crossing Standards has been met.

**Response: As a replacement crossing, Standard 3 needs to be met to the maximum extent practicable. The bankfull width value used was based on feedback from MassDOT hydraulics section that stated the bankfull width of the channel is controlled by the width between the ends of the upstream dam's training walls, which extend beyond the spillway. An average of several measurements taken from the field survey in this area resulted in a bankfull width of 17'1". Without the dam's influence, it is possible that the bankfull width of the stream is larger than was measured in the field. It should be noted that during early project coordination, the owners of the dam, Saint Joseph's Abbey, indicated that they have no intention of removing the dam. If a bankfull width of 20' is assumed, the proposed horizontal clear span would be slightly greater than 1:1, which is an improvement relative to existing conditions. Further, it would only be 1'8" less than the 1.2x standard. The proposed bridge will provide full aquatic organism passage, and the shallow depths present during much of the year, combined with the high openness ratio will ensure the crossing provides passage for many species of wildlife.**

5. Comment: The narrative accompanying the application states that the design flood (25-year discharge) for the bridge is at EL 707.22; however, the plans show the 25-year flood elevation to be at EL 706.22. Please resolve this discrepancy.

**Response: Elevation 707.22 is the design flood elevation for the existing structure and elevation 706.72 is the design flood elevation for the proposed structure.**

6. Comment: The application states that a stormwater checklist was provided but it was not included. Please provide the checklist.

**Response: A stormwater checklist is included as an attachment.**

7. Comment: According to the application, the proposed project will increase impervious area by approximately 1060 square feet; this is to be pre-treated by the existing Vegetated Filter Strips which are to be reinforced with native seeding. This may represent an improvement in existing conditions as required by the redevelopment standards at 314 CMR 9.06(6)(a)7. However, the Stormwater Handbook states that filter strips may be used near a cold-water fishery as part of a pre-treatment train. As no other treatment component is proposed, filter strips do not meet the pretreatment component of Standard #6 to the maximum extent practicable. As a standalone Stormwater Control Measure (SCM), filter strips only provide a maximum TSS removal of 10%.

There should be further evaluation of measures that meet Standard 6 to the maximum extent practicable as the project is within a critical area. As there appears to be substantial area available (given that the filter strips are 25 feet in length), SCMs such as water quality swales constructed in accordance with the handbook should be evaluated. The handbook notes that water quality swales, if lined, are one of the best BMPs for areas discharging to cold-water fisheries.



**Response: An evaluation of the table of Best Management Practices for Cold-Water Fisheries notes that grass channels and water quality swales are treatment options. An analysis of existing conditions shows that the Vegetated Filter strips flow to existing channels within forested areas of the Vegetated Filter Strips on the west side of North Spencer Road, which is where most of the additional impervious area occurs. Modification of these existing channels to convert them into water-quality channels was evaluated, but facilitating construction of this conversion would require disturbance and removal of established vegetation including the possible removal of mature trees. This is not practicable given the small increase in impervious area relative to the much larger overall watershed area to the bridge. Please refer to the chart contained under the discussion of Stormwater Standard #2 in the accompanying revised narrative.**

Respectfully Submitted,

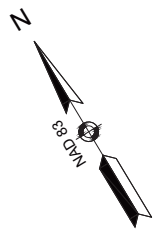
A handwritten signature in black ink that reads "Christopher Sokolowski". The signature is written in a cursive style.

Christopher Sokolowski  
Sr. Engineer



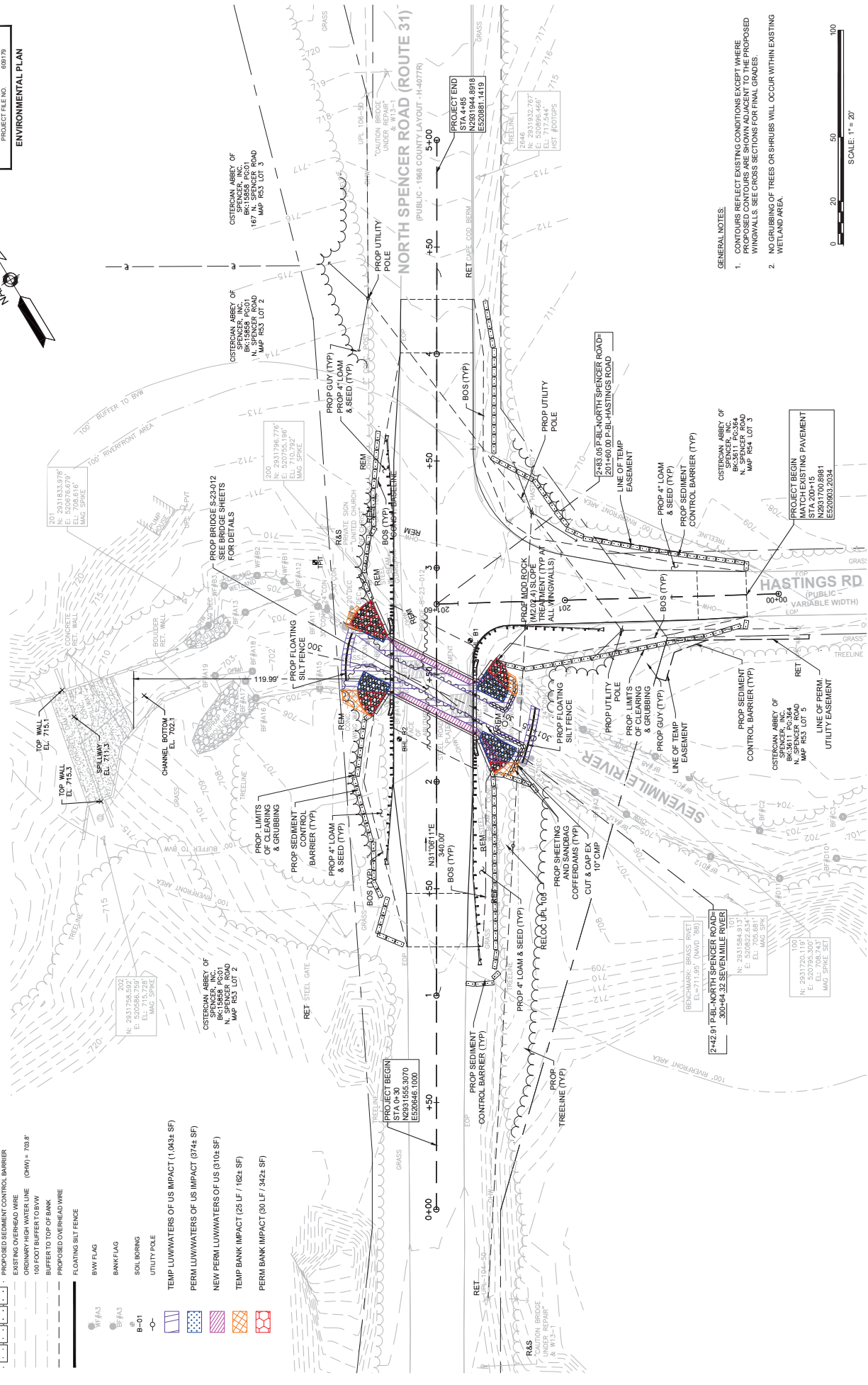
**SPENCER ST 31 (NORTH SPENCER ROAD) ENVIRONMENTAL PLAN**

STATE	REGISTRATION NO.	SHEET NO.	TOTAL SHEETS
MA	##0000	2	14
PROJECT FILE NO. 609179			



**LEGEND**

	EXISTING MINOR CONTOUR		WF#A3
	EXISTING MAJOR CONTOUR		EF#A3
	PROPOSED CONTOUR		B-01
	EXISTING SEDIMENT CONTROL BARRIER		B-01
	EXISTING OVERROAD WIRE		B-01
	ORDINARY HIGH WATER LINE (OHW) - 703.8'		B-01
	BUFFER TO TOP OF BANK		B-01
	PROPOSED OVERROAD WIRE		B-01
	FLOATING SILT FENCE		B-01
	BWM FLAG		B-01
	BANK FLAG		B-01
	SOIL BORING		B-01
	UTILITY POLE		B-01
	TEMP LUW/WATERS OF US IMPACT (1,043± SF)		B-01
	PERM LUW/WATERS OF US IMPACT (374± SF)		B-01
	NEW PERM LUW/WATERS OF US (310± SF)		B-01
	TEMP BANK IMPACT (25 LF / 182± SF)		B-01
	PERM BANK IMPACT (80 LF / 342± SF)		B-01



**GENERAL NOTES:**

- CONTOURS REFLECT EXISTING CONDITIONS EXCEPT WHERE PROPOSED CONTOURS ARE SHOWN ADJACENT TO THE PROPOSED WINGWALLS. SEE CROSS SECTIONS FOR FINAL GRADES.
- NO GRUBBING OF TREES OR SHRUBS WILL OCCUR WITHIN EXISTING WETLAND AREA.

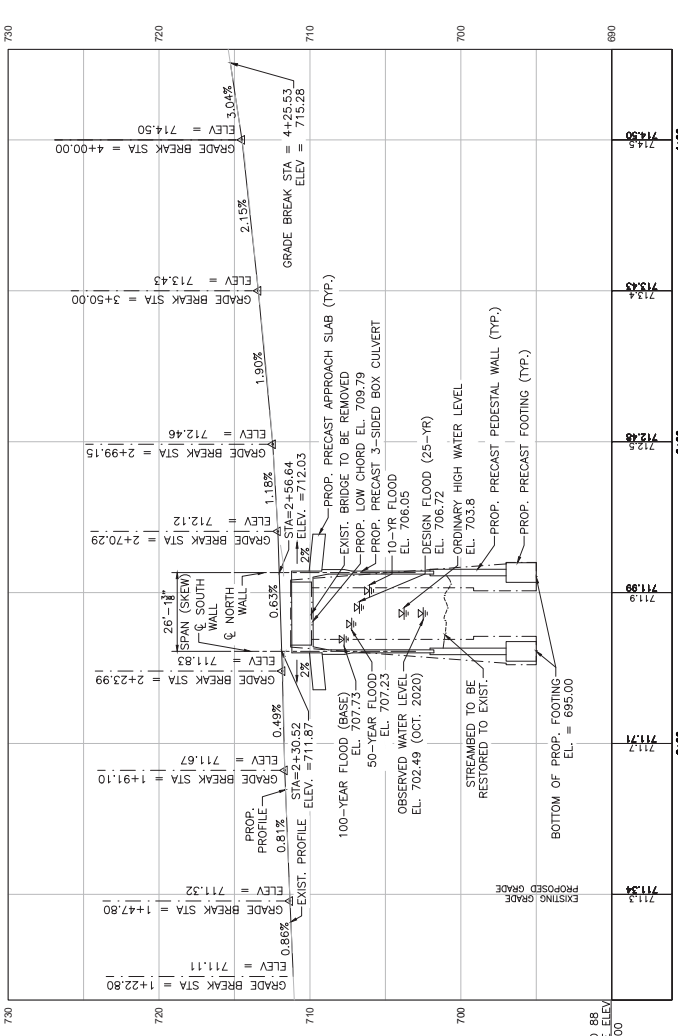
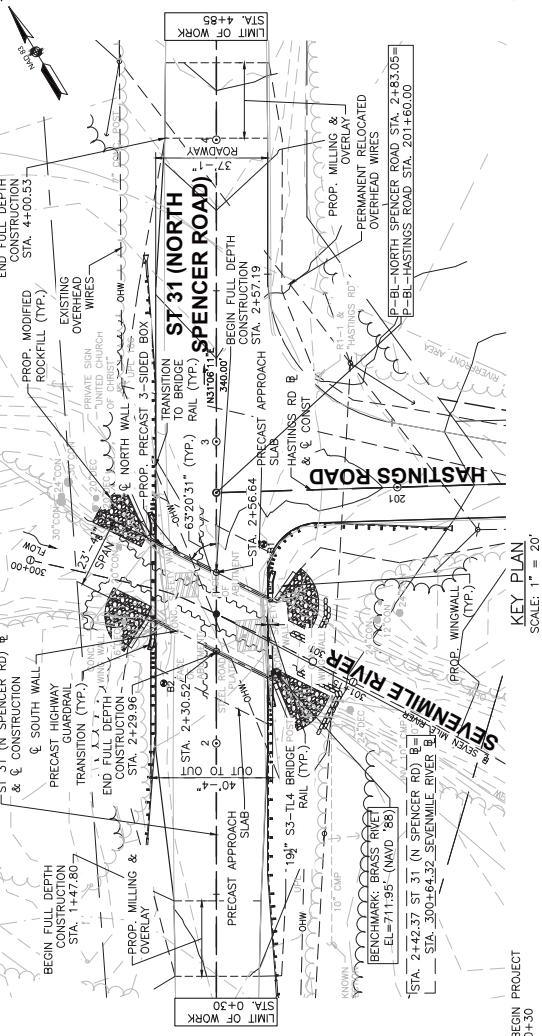
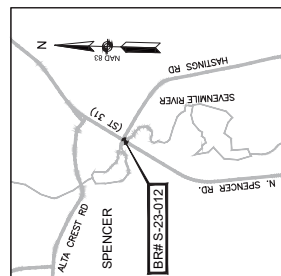


**SPENCER**  
ST 31 (NORTH SPENCER ROAD)

STATE	FEED AS PER NO.	SHEET NO.	TOTAL SHEETS
MA		3	14
PROJECT FILE NO.	609179		

**KEY PLAN, PROFILES & LOCUS MAP**

- INDEX TO DRAWINGS**
- 1 - KEY PLAN, PROFILES & LOCUS MAP
  - 2 - GENERAL NOTES & ESTIMATED QUANTITIES
  - 3 - BORING LOGS
  - 4 - PLAN & ELEVATION
  - 5 - PRECAST APPROACH PLAN
  - 6 - STAGE I DEMOLITION
  - 7 - STAGE II DEMOLITION
  - 8 - FOOTING II CONSTRUCTION
  - 9 - FOOTING I CONSTRUCTION
  - 10 - PRECAST FOOTING DETAILS I
  - 11 - PRECAST FOOTING DETAILS II
  - 12 - ABUTMENT PLAN & ELEVATION
  - 13 - PRECAST APPROACH WALL DETAILS
  - 14 - PRECAST PEDESTAL WALL DETAILS
  - 15 - PRECAST WINGWALL ELEVATIONS
  - 16 - PRECAST WINGWALL DETAILS
  - 17 - PRECAST APPROACH BOX DETAILS
  - 18 - PRECAST APPROACH BOX DETAILS
  - 19 - PRECAST APPROACH BOX DETAILS
  - 20 - FRAMING PLAN & ROOF CROSS-SECTION
  - 21 - PRECAST ERECTION & FABRICATION TOLERANCES
  - 22 - PRECAST HIGHWAY GUARDRAIL TRANSITION I
  - 23 - PRECAST HIGHWAY GUARDRAIL TRANSITION II
  - 24 - BRIDGE RAIL
  - 25 - STAGE I SUGGESTED ERECTION PROCEDURE
  - 26 - STAGE II SUGGESTED ERECTION PROCEDURE



ISSUED FOR CONSTRUCTION

**PROPOSED BRIDGE**  
**SPENCER**  
ST 31 (NORTH SPENCER ROAD)  
OVER SEVENMILE RIVER  
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
10 PARK PLAZA BOSTON, MASS

**BAYSIDE ENGINEERING**  
100 WASHINGTON ST., 10TH FLOOR  
BOSTON, MA 02108  
TEL: 617-552-1100  
WWW.BAYSIDEENGINEERING.COM

STATE BRIDGE ENGINEER \_\_\_\_\_ CHIEF ENGINEER

**GENERAL NOTES:**

DESIGN: IN ACCORDANCE WITH THE 2009 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS URBAN BRIDGE DESIGN SPECIFICATIONS FOR HL-93 LOADING. EXISTING BRIDGE PLANS FOR THE EXISTING BRIDGE, DATED OCTOBER 1938, MAYBE SEEN AT THE OFFICE OF THE MASSACHUSETTS HIGHWAY DEPARTMENT, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

MASSDOT BENCH MARK: THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT AND ELEVATIONS ARE GIVEN IN FEET WITH AN ELEVATION OF 711.95 LOCATED AT TOP OF THE SOUTHEAST WINGWALL.

DATE: TO BE PLACED ON THE INSIDE FACE OF THE SOUTHEASTERLY AND NORTHWESTERLY GUARDRAILS. THE CONTRACT SHALL BE COMPLETED BY THE DATE OF THE CONTRACT. THE NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF THE CONTRACT COMPLETION AS OF THE DATE THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CONSTRUCTED. BOTH HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTEBOOKS: ELECTRONIC SURVEY WAS USED IN THE PREPARATION OF CONSTRUCTION DRAWINGS AND A COPY OF THE FILES MAY BE OBTAINED FROM MASSDOT.

SCALES: SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZED PRINTS (A3).

FOUNDATIONS: FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL: UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

CONCRETE: CONCRETE SHALL BE 4000 PSI HP CEMENT CONCRETE EXCEPT AS NOTED BELOW: SAFETY BARS AT SLEEVES SHALL BE 4000 PSI PRECAST HIGHWAY GUARDRAIL TRANSITIONS. THE PRECAST 3-SIDED BOX, THE PRECAST APPROACH SLAB SHELF, PRECAST PEDESTAL WALLS, AND PRECAST WINGWALL STEM SHALL BE 5000 PSI 3 HP CEMENT.

REINFORCEMENT: STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M. 31 GRADE 60, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS. ALL BARS SHALL BE LAPPED AS FOLLOWS:

- |   |         |         |         |
|---|---------|---------|---------|
| MODIFICATION CONDITION                          | #4 BARS | #5 BARS | #6 BARS |
| 1. NONE   | 16"     | 19"     | 23"     |
| 2. 12" OF CONCRETE BELOW BAR                    | 20"     | 25"     | 30"     |
| 3. COATED BARS, COVER <34, OR CLEAR SPACING <6d | 23"     | 29"     | 34"     |
| 4. COATED BARS, ALL OTHER CASES                 | 18"     | 23"     | 27"     |
| 5. CONDITION 2. AND 3.                          | 26"     | 32"     | 39"     |
| 6. CONDITION 2. AND 4.                          | 24"     | 30"     | 36"     |

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ALL REINFORCEMENT SHALL BE COATED.

UTILITIES: ALL EXISTING UTILITIES SHALL BE LOCATED AND PROTECTED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS TO RELOCATE OVERHEAD WIRES AND UTILITY POLES AS REQUIRED BY THE CONSTRUCTION.

TRAFFIC: BRIDGE WILL BE OPEN TO TRAFFIC DURING ALL PHASES OF DEMOLITION AND CONSTRUCTION. REFER TO THE TEMPORARY TRAFFIC CONTROL PLANS FOR THE ASSOCIATED DETOUR.

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#1884	4	14
PROJECT FILE NO.		609179	

**GENERAL NOTES & ESTIMATED QUANTITIES**

TRAFFIC DATA		ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR		2042	YEAR
AVERAGE DAILY TRAFFIC - PRESENT		3150	ADT
AVERAGE DAILY TRAFFIC - DESIGN YEAR		6000	ADT
DESIGN HOURLY VOLUME		502	DESIGN
DIRECTIONAL DISTRIBUTION		N/A	DIR.
TRUCK PERCENTAGE - AVERAGE DAY		2%	TRUCK
TRUCK PERCENTAGE - PEAK HOUR		2%	TRUCK
DESIGN SPEED		45 MPH	DES.
DIRECTIONAL DESIGN HOURLY VOLUME		251	DDHV

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1000 YR
DESIGN SPECTRA	
As	0.098
Sds	0.214
SD1	0.091
SD2	D
SEISMIC DESIGN CATEGORY (SDC)	A

HYDRAULIC DESIGN DATA	
DRAINAGE AREA (SQ. MILES)	6.27
DESIGN FLOOD DISCHARGE (C.F.S.)	531
DESIGN FLOOD FREQUENCY (YEARS)	25
DESIGN FLOOD VELOCITY (F.P.S.)	4.32
DESIGN FLOOD ELEVATION (FEET, NAVD)	706.72
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	840
BASE FLOOD ELEVATION (FEET, NAVD)	707.73
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT	
RETURN FREQUENCY (YEARS)	50
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	0.82
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT	
RETURN FREQUENCY (YEARS)	100
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	1.02
CHECK FLOOD PIER SCOUR DEPTH (FEET)	N/A
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	N/A
FREQUENCY (IF KNOWN, YEARS)	N/A
MAXIMUM ELEVATION (FEET, NAVD)	N/A
DATE (MM/YY)	N/A
HISTORY OF ICE FLOES	NONE
EVIDENCE OF SCOUR AND EROSION	NONE

TEMPORARY WATER CONTROL DESIGN DATA	
DESIGN FLOOD DISCHARGE (C.F.S.)	166
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S.)	5.93
*DESIGN FLOOD ELEVATION (FEET, NAVD)	706.89

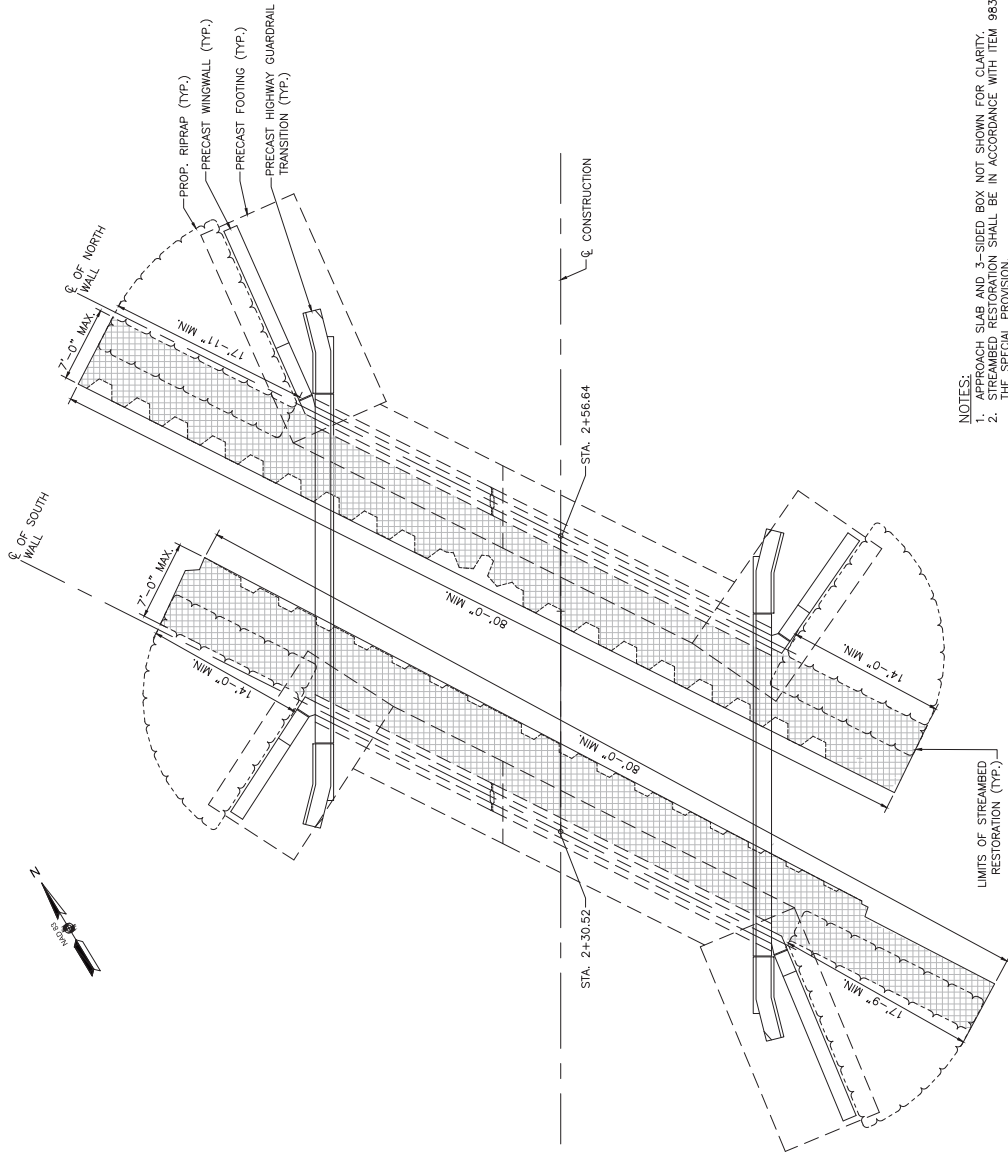
\*THIS IS THE RECOMMENDED TOP OF COFFERDAM ELEVATION

ESTIMATED QUANTITIES (NOT GUARANTEED)		QUANTITY UNITS
DEMOLITION OF SUPERSTRUCTURE OF BRIDGE BR. NO. S-23-012 (DE)		1 LS
CONCRETE EXCAVATION		400 CY
CRUSHED STONE EXCAVATION		840 CY
CRUSHED STONE FOR BRIDGE FOUNDATIONS		45 CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES & PILES		560 CY
CRUSHED STONE FOR BRIDGE FOUNDATIONS		235 TON
CRUSHED STONE FOR FILTER BLANKET		45 CY
SUPERPAVE BRIDGE SURFACE COURSE-9.5 POLYMER (SSC-B-9.5-P)		11 TON
SUPERPAVE BRIDGE PROTECTIVE COURSE-9.5 POLYMER (SPC-B-9.5-P)		25 TON
GEOTEXTILE FABRIC FOR SEPARATION		130 SY
MUSSEL TRANSLOCATION		1 LS
TEMPORARY BARRIER - LIMITED DEFLECTION (1L-3)		230 FT
TEMPORARY BARRIER - LIMITED DEFLECTION (1L-3) REMOVE AND RESET		230 FT
MODIFIED ROCKFILL		160 TON
STREAMBED MATERIAL REMOVED AND RELAND		45 CY
NATURAL STREAMBED MATERIAL		25 CY
TEMPORARY EXCAVATION SUPPORT - BR. NO. S-23-012 (CL)		1 LS
TEMPORARY WATER CONTROL STRUCTURE - BR. NO. S-23-012 (CC)		1 LS
TEMPORARY PILING - BR. NO. S-23-012 (CC)		1 LS
BRIDGE STRUCTURE, BRIDGE NO. S-23-012 (COL)		1 LS

MMMM DD, YYYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

SPENCER  
ST 31 (NORTH SPENCER ROAD)  
STREAMBED RESTORATION PLAN

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
MA	609179	3	14
PROJECT FILE NO.	609179		



- NOTES:
1. APPROACH SLAB AND 3-SIDED BOX NOT SHOWN FOR CLARITY.
  2. SPECIAL PROVISIONS SHALL BE IN ACCORDANCE WITH ITEM 983.35 OF SPECIAL PROVISIONS.
  3. STREAMBED RESTORATION SHOWN AS THIS: [Hatched Pattern]

STREAMBED RESTORATION PLAN  
SCALE: 1" = 1'-0"

ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT		
AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE		



**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		6	14
PROJECT FILE NO. 609179			

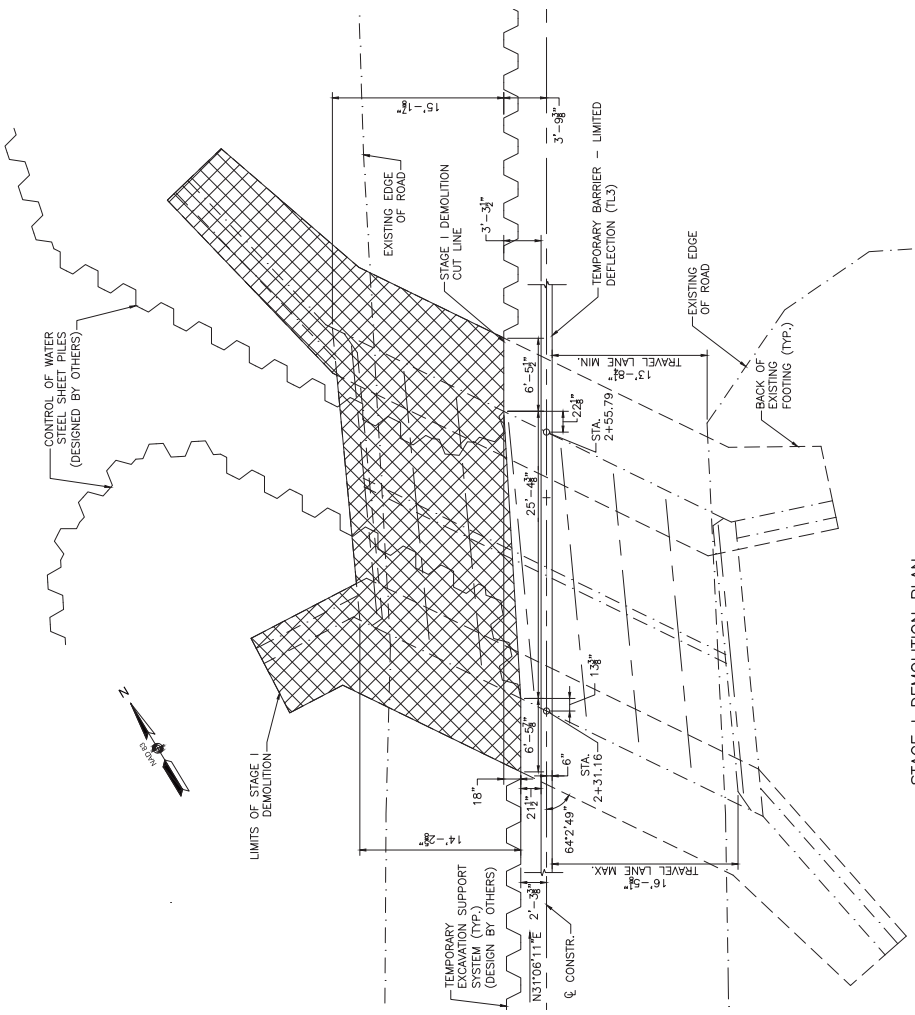
**STAGE I DEMOLITION**

**DEMOLITION NOTE:**

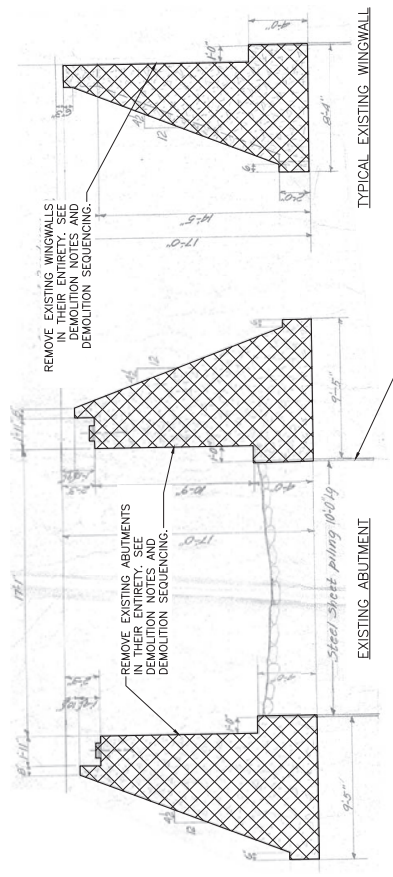
1. SEE EXISTING SUBSTRUCTURE SECTIONS THIS SHEET.
2. EXISTING SUBSTRUCTURE DEMOLITION SHALL BE IN ACCORDANCE WITH ITEM 114.1 AND 127.1 OF THE SPECIAL PROVISIONS.

**STAGE I DEMOLITION SEQUENCE:**

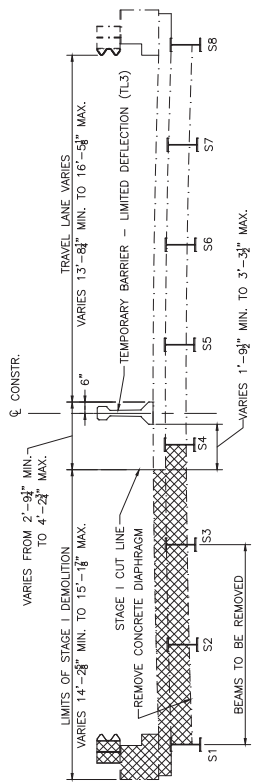
1. RELOCATE OVERHEAD UTILITIES.
2. INSTALL TEMPORARY TRAFFIC CONTROLS FOR STAGE I.
3. INSTALL TEMPORARY TRAFFIC SHIELDING TO THE WEST OF THE STAGE I DEMOLITION LINE.
4. SAW CUT NEAT LINES IN THE DECK AT THE STAGE I DEMOLITION CUT LINE.
5. REMOVE THE DECK SLATES, DECK BEAMS S1-S3, BEARINGS, AND DIMENSIONAL BEAMS WEST OF THE STAGE I DEMOLITION CUT LINE WITHOUT DAMAGING THE COMPONENTS TO REMAIN.
6. INSTALL TEMPORARY EXCAVATION SUPPORT SYSTEM (DESIGNED BY OTHERS).
7. INSTALL CONTROL OF WATER (DESIGNED BY OTHERS).
8. REMOVE THE TOP PORTION OF THE STREAMBED MATERIAL TO THE LIMITS SHOWN ON THE STREAMBED RESTORATION PLAN IN ACCORDANCE WITH ITEM 983.35 OF THE SPECIAL PROVISIONS.
9. EXCAVATE THE ABUTMENTS & WINGWALLS WEST OF THE STAGE I DEMOLITION CUT LINE.
10. SAW CUT NEAT LINES ON ALL FACES OF THE BACKWALLS, ABUTMENTS, AND FOOTINGS AT THE STAGE I DEMOLITION CUT LINE.
11. REMOVE THE NORTHWEST AND SOUTHWEST WINGWALLS AND FOOTINGS IN THEIR ENTIRETY.
12. REMOVE THE NORTHWEST AND SOUTHWEST WINGWALLS AND FOOTINGS WEST OF THE STAGE I DEMOLITION CUT LINE WITHOUT DAMAGING THE COMPONENTS TO REMAIN.
13. CUT DOWN EXISTING ABUTMENT SHEET PILES TO THE BOTTOM OF THE CRUSH STONE FOR BRIDGE FOUNDATION (SEE SHEET 14).



**STAGE I DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"



**EXISTING SUBSTRUCTURE SECTIONS**  
SCALE: 3/8" = 1'-0"



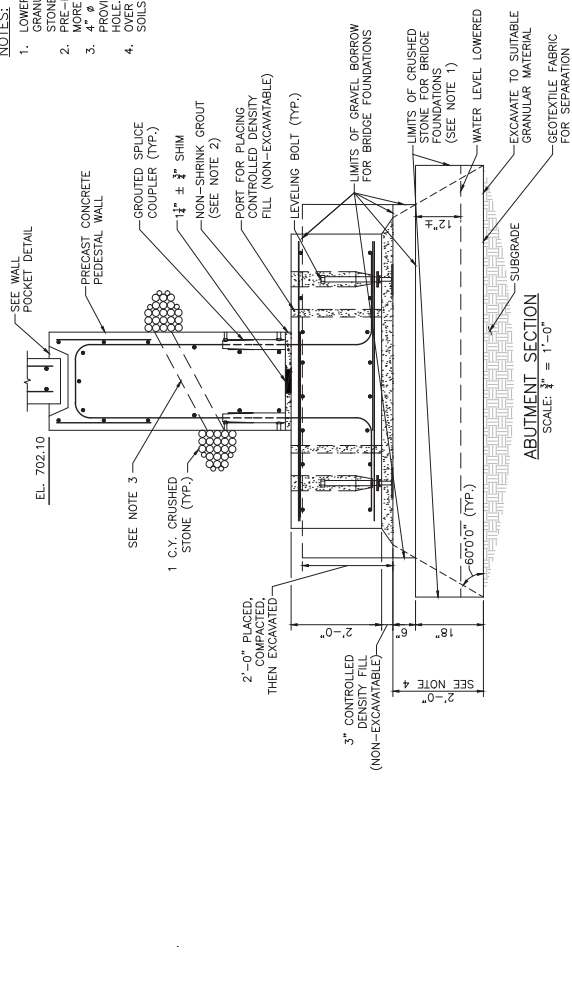
**STAGE I DEMOLITION SECTION**  
SCALE: 3/8" = 1'-0"

UNAM. NO. YYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT	
AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

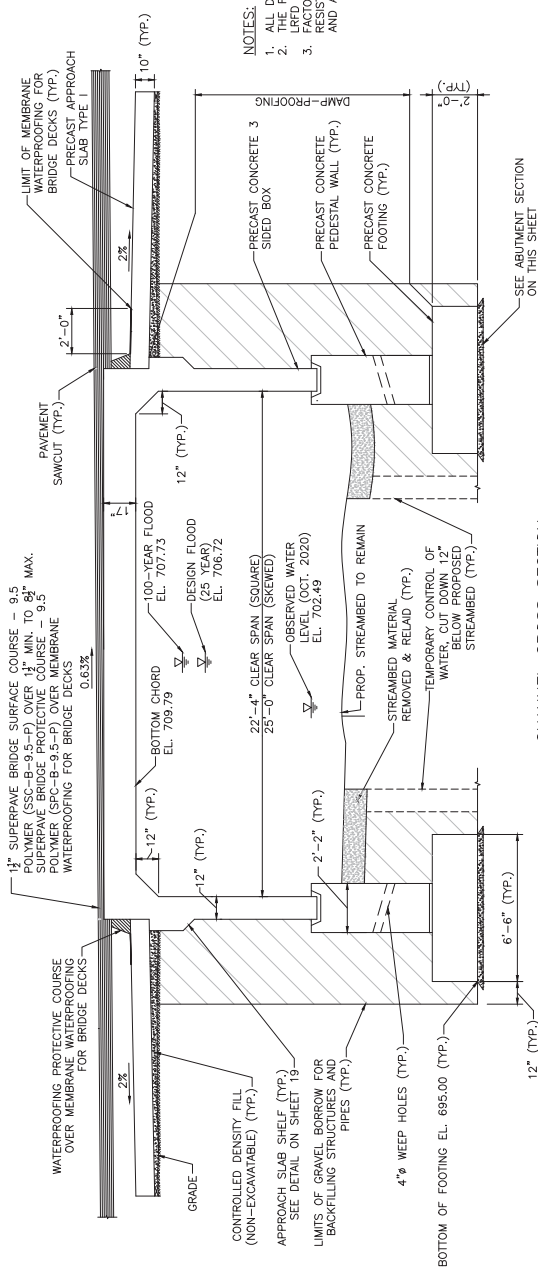
<b>SPENCER</b>			
<b>ST 31 (NORTH SPENCER ROAD)</b>			
STATE	FED. ABR. PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		7	14
	PROJECT FILE NO.	609179	

**ABUTMENT & CHANNEL SECTIONS**

- NOTES:**
- LOWER WATER LEVEL AS MUCH AS POSSIBLE WITHOUT DISTURBING THE GRANULAR SOIL (SIDES & BOTTOM) AND THEN TIGHTEN THE CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS)
  - PRECAST CONCRETE ELEMENT WITH NON-SHRINK GROUT WITH THICKNESS 1/2" MIN. TO 8" MAX. (JUST ABOVE PROTECTIVE COURSE).
  - PROVIDE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
  - OVER EXCAVATION OF SUBGRADE IS REQUIRED WHEN THERE ARE CLAY SOILS LOCATED AT THE BOTTOM OF FOOTINGS.



**ABUTMENT SECTION**  
SCALE: 3/8" = 1'-0"



**CHANNEL CROSS SECTION**  
SCALE: 3/8" = 1'-0"

- NOTES:**
- ALL DIMENSIONS ARE ON THE SQUARE UNLESS OTHERWISE NOTED.
  - THE FACTORED BEARING PRESSURE = 7.20 KSF AS PER ASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
  - FACTORED BEARING RESISTANCE = 0.8 KSF. FACTORED BEARING RESISTANCE = THE NOMINAL BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.

MA. DA. YYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

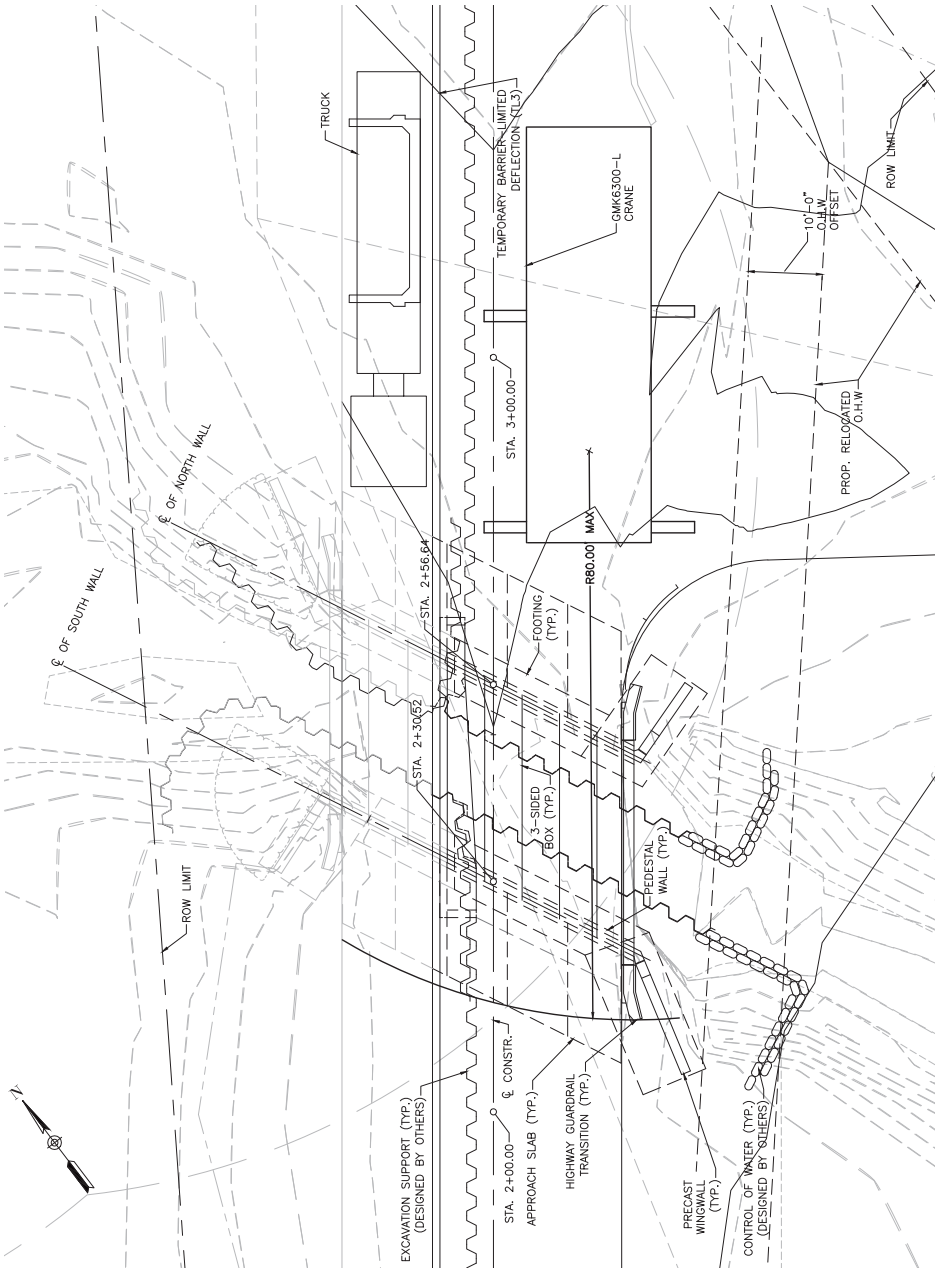




**SPENCER**  
**ST 31 NORTH SPENCER ROAD**

STATE	REG. ARCHITECT NO.	SHEET NO.	TOTAL SHEETS
MA	#18844	10	14
PROJECT FILE NO.		609179	

**STAGE II SUGGESTED ERECTION PROCEDURE**



**SUGGESTED STAGE II ERECTION PROCEDURE**  
 SCALE: 1"=1'-0"

**NOTE:**  
 CRANE IS A GROVE GNMK6300L-1 WITH 203,900 LBS OF COUNTER-WEIGHT.  
 THE CRITICAL LIFT IS SOUTH FOOTING UNIT 4 WITH A REACH OF 80.00 FEET AND FACTORED WEIGHT OF 55,000 LBS.  
 THE CRANE CAPACITY WITH A REACH OF 80.00 FEET IS 68,000 LBS. WITH A REACH OF 80.00 FEET.

**STAGE II SUGGESTED LIFTING PROCEDURE:**

1. TRAFFIC WILL BE TEMPORARILY STOPPED IN THE SOUTHBOUND LANE.
2. TRAFFIC WILL NOT BE STOPPED DURING PEAK HOURS OR WITHOUT PRE-APPROVAL OF THE ENGINEER.
3. THE TRUCK WILL STOP IN THE SOUTHBOUND LANE WITH THE PRECAST ELEMENT.
4. THE SOUTHBOUND LANE WILL BE RE-OPENED TO TRAFFIC.
5. REPEAT STEPS 1 & 2 FOR ALL REMAINING PRECAST ELEMENTS.
6. PRECAST ELEMENT TO BE INSTALLED IN STAGE II:

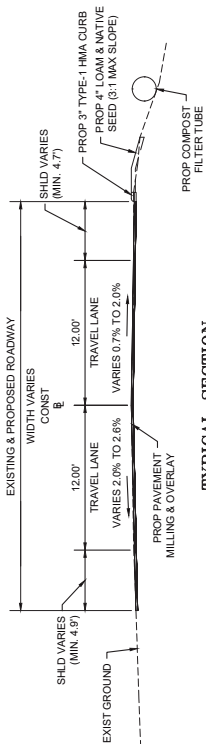
- A. SOUTH FOOTING UNITS 1 & 2
- B. SOUTH FOOTING UNITS 3 & 4
- C. NORTH FOOTING UNITS 1 & 2
- D. NORTH FOOTING UNITS 3 & 4
- E. 3-SIDED BOX UNITS 1 & 2
- F. 3-SIDED BOX UNITS 3 & 4
- G. NORTHWEST WINGWALL
- H. NORTHEAST WINGWALL
- I. NORTHWEST HIGHWAY GUARDRAIL TRANSITION
- J. NORTHEAST HIGHWAY GUARDRAIL TRANSITION
- K. SOUTH APPROACH SLAB UNITS 3-5
- L. NORTH APPROACH SLAB UNITS 3-5

MA. DA. YYYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	
STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

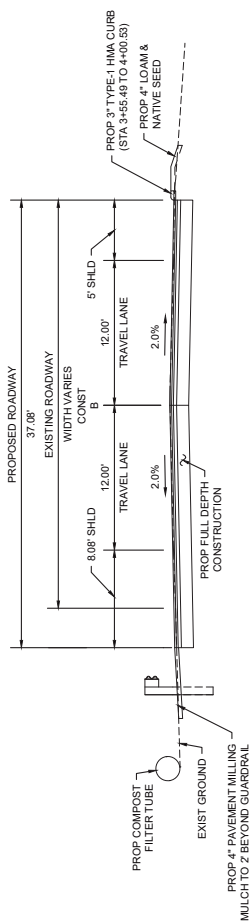
STATE	FEEDBACK NO.	SHEET NO.	TOTAL SHEETS
MA	##	11	14
PROJECT FILE NO.		609179	

**TYPICAL SECTIONS - N SPENCER RD**



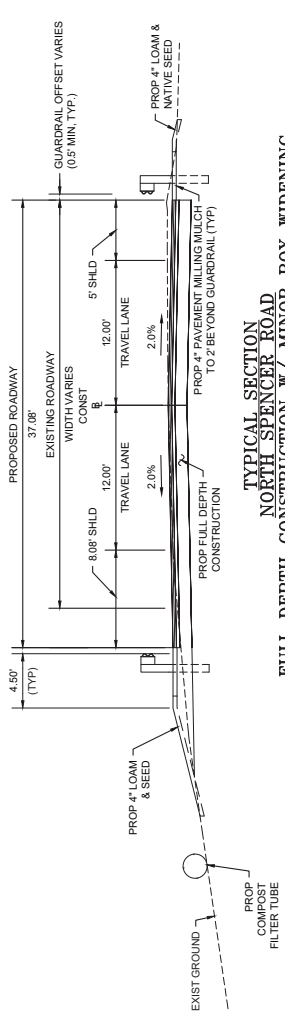
**TYPICAL SECTION NORTH SPENCER ROAD PAVEMENT MILLING AND OVERLAY**

STA. 4+00.53 TO 4+25.53



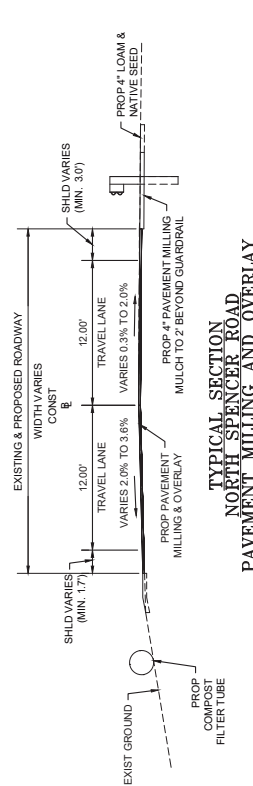
**TYPICAL SECTION NORTH SPENCER ROAD FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

STA. 4+25.53 TO 4+40.53



**TYPICAL SECTION NORTH SPENCER ROAD FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

STA. 1+47.50 TO 1+47.60



**TYPICAL SECTION NORTH SPENCER ROAD FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

STA. 1+22.60 TO 1+47.60

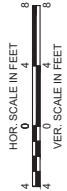
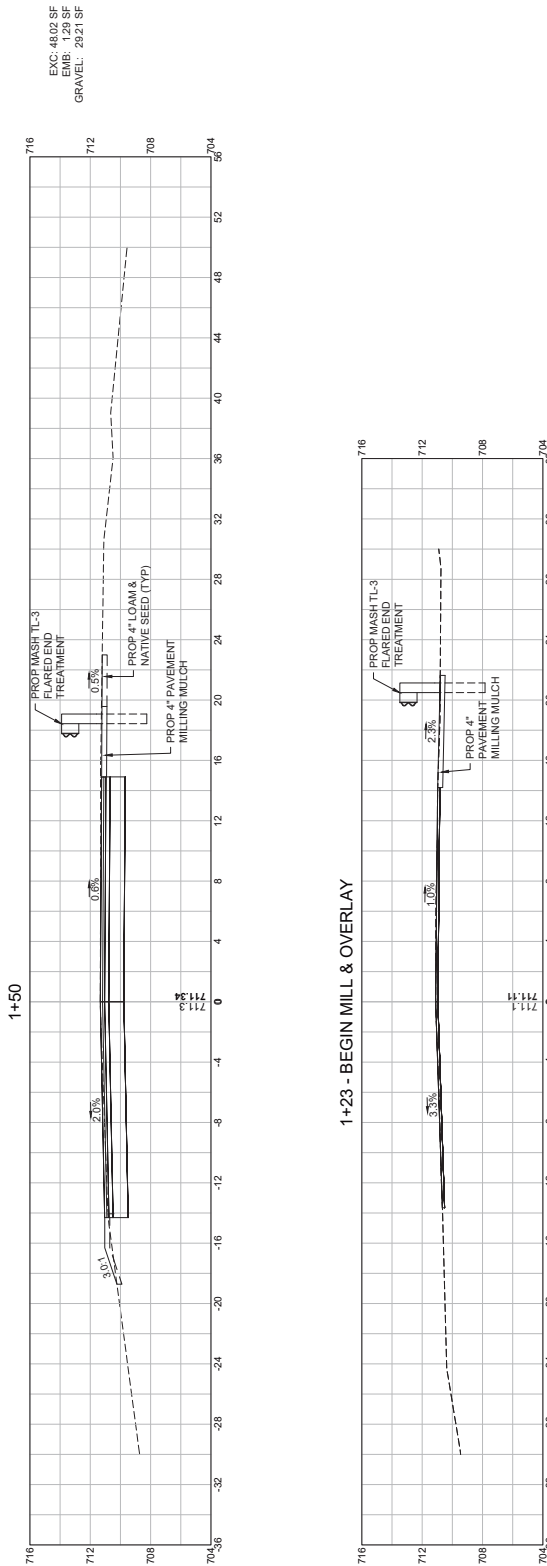
**PAVEMENT NOTES**

- PROPOSED FULL DEPTH PAVEMENT SURFACE:** 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER INTERMEDIATE: 2.0" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SC-12.5) OVER BASE: 4.0" SUPERPAVE BASE COURSE - 37.5 (SSC-37.5) OVER SUBBASE: 12" GRAVEL BORROW, TYPE B
- PROPOSED PAVEMENT MILLING & OVERLAY SURFACE:** 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/SY OVER EXISTING PAVEMENT FINE MILL VARIABLE DEPTH (0-2.5') TO MEET PROPOSED GRADING
- PROPOSED HMA BRIDGE WEARING COURSE (AS PER BRIDGE ENGINEER APPROVAL) SURFACE:** 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER PROTECTIVE: VARIES 1.5"-8.5" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B-9.5-P) OVER MEMBRANE WATERPROOFING FOR BRIDGE DECKS
- NOTE:**
- ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/SY OVER MILLED SURFACE. ASPHALT EMULSION FOR TACK COAT AT 0.06 TO 0.08 GAL/SY OVER INTERMEDIATE AND BASE COURSE. TACK SHALL BE RS-1H.
  - PLACE SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B-9.5-P) IN LIFTS NOT TO EXCEED 1.875".

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#/###/###	12	14

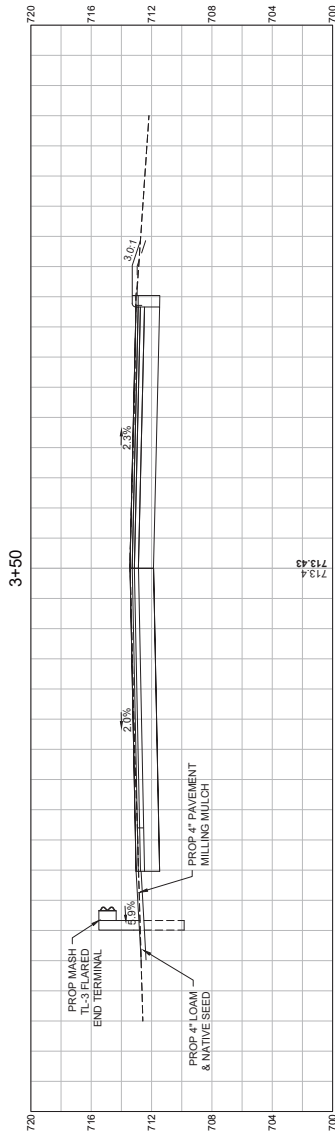
PROJECT FILE NO. 609179  
**CROSS SECTIONS ST 31**



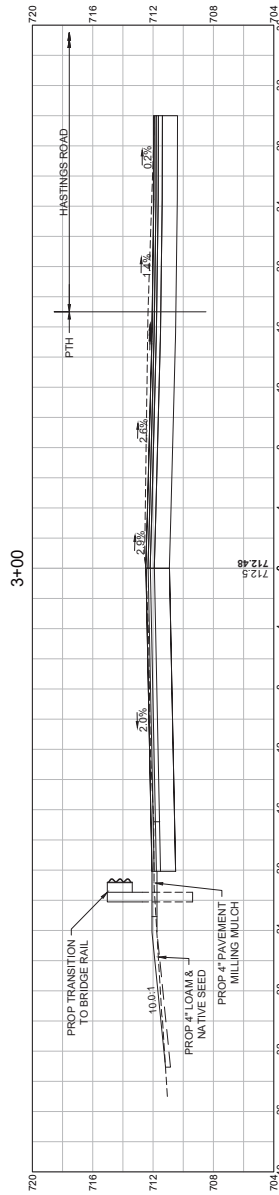
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**  
**CROSS SECTIONS ST 31 (2)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#/NAME	13	14
PROJECT FILE NO. 609179			

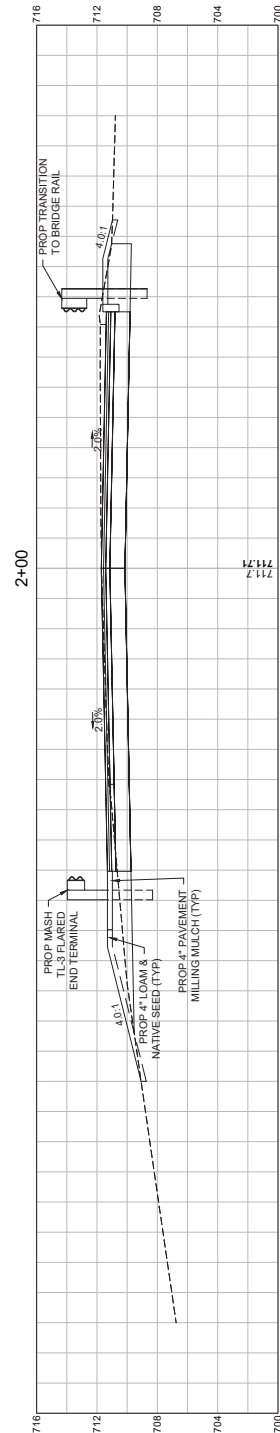
EXC: 59.81 SF  
EMB: 1.55 SF  
GRAVEL: 38.49 SF



EXC: 61.60 SF  
EMB: 2.20 SF  
GRAVEL: 37.07 SF



EXC: 71.33 SF  
EMB: 3.20 SF  
GRAVEL: 53.62 SF





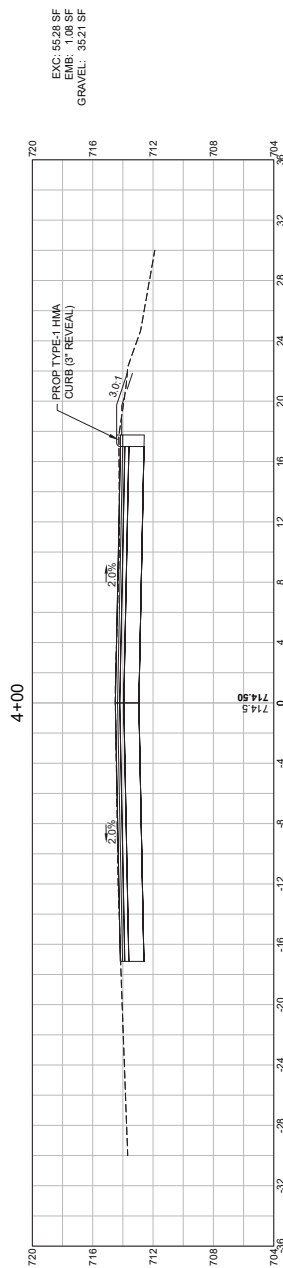
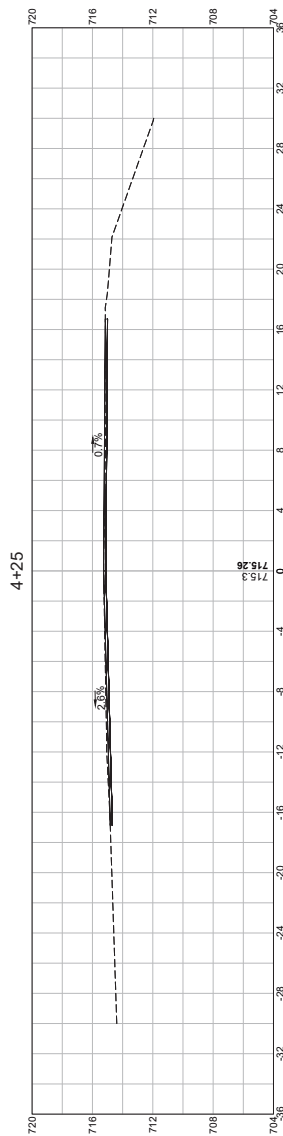
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		14	14

PROJECT FILE NO.
609179

**CROSS SECTIONS ST 31**



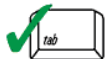


**Massachusetts Department of Environmental Protection**  
 Bureau of Resource Protection - Wetlands Program

# 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.<sup>1</sup> 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<sup>2</sup>
- 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.

<sup>1</sup> 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.

<sup>2</sup> 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



*Christopher Sokolowski*

1/9/2024

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): Reinforcement of existing VFS

### 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)

### 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<sup>1</sup>
- 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.

<sup>1</sup> 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)

- 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.



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# Department of Environmental Protection

100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Maura T. Healey  
Governor

Kimberley Driscoll  
Lieutenant Governor

Rebecca L. Tepper  
Secretary

Bonnie Heiple  
Commissioner

January 24, 2024

Massachusetts Department of Transportation Highway Division  
Ten Park Plaza, Suite 4160  
Boston, MA 02116  
ATTN: Courtney Walker

RE: 401 WATER QUALITY CERTIFICATION  
Technical Deficiency Review Supplement  
401 WQC Application No: 23-WW11-0020-APP

AT: Route 31 over the Sevenmile River (Bridge No. S-23-012)  
Spencer, MA

Dear Ms. Walker:

The Massachusetts Department of Environmental Protection (MassDEP) Wetlands Program Highway Unit has completed its Technical Review of the responses to our comments prepared by Bayside Engineering, dated January 9, 2024 and received January 10, 2024, regarding the above-referenced application. We request that you provide the following additional information:

Comment/Response 1: The response states sheet piles are required to maintain stability during excavation activities and retain water during normal flows and storm events. Please clarify why the sheet piles are required to remain once the precast pedestal walls are installed. If they are not needed for stability at that time, please evaluate if the sheet piles could be fully removed while still accessible and replaced with an alternative such as sandbags that could be removed after installation of the box culvert. Please also identify where the comment regarding sheet piles being removed where possible is located on the revised plans.

Comment/Response 2: The revised plans identify proposed modified rock slope treatment at the wingwalls, but there does not appear to be a specification for plantings, which needs to be included for review and approval.

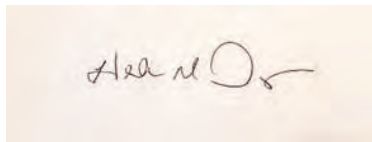
Comment/Response 3: The revised plans do not appear to provide details or notes for the contractor regarding the proposed regrading of streambed for wildlife passage as noted. This information should be described and depicted on the Channel Cross Section on Sheet 7 of the revised plans for review and approval.

Comment/Response 7: The evaluation regarding modifying the existing channels to convert them to water quality swales needs to be provided as part of a complete evaluation. Please note that removal of established vegetation including mature trees to install a Stormwater Control Measure is not necessarily considered impracticable to meet the Stormwater Standards to the maximum extent practicable. The response also references an accompanying revised narrative regarding a discussion of Stormwater Standard #2 but it does not appear to have been attached.

Upon receipt of all requested supplemental information, MassDEP has 30 calendar days in which to issue or deny a certification.

Should you have any questions relative to this letter, please contact me at [heidi.davis@mass.gov](mailto:heidi.davis@mass.gov) or Ryan Hale at [ryan.hale@mass.gov](mailto:ryan.hale@mass.gov).

Sincerely,

A rectangular area containing a handwritten signature in dark ink on a light-colored background. The signature appears to read "Heidi M. Davis".

Heidi M. Davis  
Highway Unit Supervisor

Ecc: DEP – CERO – Judy Schmitz  
MassDOT – Melissa Lenker  
MassDOT – Kylie Abouzeid  
USACE – Dan Vasconcelos  
Spencer Conservation Commission – Lauren Vivier - [lvivier@spencerma.gov](mailto:lvivier@spencerma.gov)  
Christopher Sokolowski – Bayside Engineering, Inc.



February 9, 2024

Massachusetts Department of Environmental Protection  
100 Cambridge Street, Suite 900  
Boston, MA 02114  
Attn: Heidi Davis

Re: DEP 401 WQC Application No. 23-WW11-0020-APP  
Bridge Replacement – Bridge No. S-23-012 Route 31 over Sevenmile River – Spencer, MA

Dear Ms. Davis,

Bayside Engineering Inc. has reviewed the Supplemental Technical Review comments from MassDEP for the project and offers the following responses:

Comment/Response 1: The response states sheet piles are required to maintain stability during excavation activities and retain water during normal flows and storm events. Please clarify why the sheet piles are required to remain once the precast pedestal walls are installed. If they are not needed for stability at that time, please evaluate if the sheet piles could be fully removed while still accessible and replaced with an alternative such as sandbags that could be removed after installation of the box culvert . Please also identify where the comment regarding sheet piles being removed where possible is located on the revised plans.

**Response: The sheet piles are required to remain in place up to and after the placement of the precast 3-sided box culvert due to the staged construction required to maintain one lane of the roadway open. The control of water sheet piles are connected with, and integral to, the temporary excavation support system that will support the sections of roadway that remain open during the phases of the project. The design scour depth is under one foot (0.82'), indicating that it is highly unlikely that post-construction downcutting of the streambed will occur to such a depth that the remains of the sheeting left in place will be exposed and create a barrier to aquatic organisms. Notes have been added to the project plans to indicate it is preferable that control of water sheeting outside of the footprint of the bridge be removed rather than cut off where possible.**

Comment/Response 2: The revised plans identify proposed modified rock slope treatment at the wingwalls, but there does not appear to be a specification for plantings, which needs to be included for review and approval.

**Response: After consultation with MassDOT Landscape section, live staking is not recommended for this location and application. Based on successful implementation at similar project sites, it was recommended to use compost and seed over the modified rockfill in accordance with Special Provision 751.765. This will create a more natural transition area from the river to the upland riverfront area and mitigate concerns expressed regarding animals becoming trapped in the voids of a dumped riprap slope. The plans have been updated to reflect that compost and seeding will be performed in the modified rockfill areas adjacent to the wingwalls. A detail has been added to the plans and a Special Provision has been added to the project documents.**



Comment/Response 3: The revised plans do not appear to provide details or notes for the contractor regarding the proposed regrading of streambed for wildlife passage as noted. The information should be described and depicted on the Channel Cross Section on Sheet 7 of the revised plans for review and approval.

**Response: A note and detail have been added to Sheet 7 of the revised plans.**

Comment/Response 7: The evaluation regarding modifying the existing channels to convert them to water quality swales needs to be provided as part of a complete evaluation. Please note that removal of established vegetation including mature trees to install a Stormwater Control Measure is not necessarily considered impracticable to meet the Stormwater Standards to the maximum extent practicable. The response also references and accompanying revised narrative regarding a discussion of Stormwater Standard #2, but it does not appear to have been attached.

**Response: Standard #6 applies to this project due to the presence of a Cold-Water Fishery. The primary concern of Standard #6 for a Cold-Water Fishery is the mitigation of thermal impacts. This is already well accomplished by the established vegetation in the areas that would be considered for linear practices, particularly given the relatively dense canopy coverage. MassDOT considers the Low Impact Development practices of disconnecting impervious areas and preserving existing vegetation to be the preferred method to address stormwater impacts over structural stormwater control measures (SCM) such as a linear practice. The outlet of a linear practice or other SCM would also create a new discharge point where one does not exist, contradictory to the Environmentally Sensitive Site Design (ESSD) approach. Please reference the revised narrative included with this submission for further discussion of Standards #6 as well as discussion of Standard #2 referenced in the previous letter.**

Respectfully Submitted,

A handwritten signature in cursive script that reads "Christopher Sokolowski".

Christopher Sokolowski  
Sr. Engineer

---

MassDOT Highway Division | Water Quality Certification

## BRIDGE NO. S-23-012

## NORTH SPENCER ROAD (ST 31) OVER THE SEVENMILE RIVER

PROJECT FILE NO. 609179



PREPARED FOR

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**massDOT**

10 Park Plaza  
Boston, MA 02116

PREPARED BY

---

 **BAYSIDE**  
ENGINEERING

600 Unicorn Park Drive  
Woburn, MA, 01801

2/9/2024

**401 WATER QUALITY CERTIFICATION  
PROPOSED REPLACEMENT OF BRIDGE NO. S-23-012  
NORTH SPENCER ROAD OVER SEVENMILE RIVER**

**ADDITIONAL INFORMATION FOR APPLICATION FORM BRP WW 11 MINOR FILL PROJECT AND ACOE  
PRECONSTRUCTION NOTIFICATION FORM**

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## Executive Summary

Bayside Engineering, Inc. has prepared this Section 401 Water Quality Certification and Preconstruction Notification Permit on behalf of the Massachusetts Department of Transportation for the replacement of a bridge (S-23-012) along North Spencer Road (ST 31) over Sevenmile River in Spencer, Massachusetts. The project will require the reconstruction of approximately 250 feet of roadway on either side of the bridge, as well as approximately 130 feet of Hastings Road due to the proximity of the structure to the intersection (approximately 25' from the Hastings Road centerline), which will add approximately 1,060 square feet of new impervious surface. Replacement of the structure is necessary due to the existing structure's severely deteriorated condition and since it does not meet current statutory capacity requirements as noted in various inspection reports prepared to date. The new structure will be in a similar location to the existing one but will require additional fill of Land Under Water/Waters of the US, which necessitates the inclusion of form BRP WW 11. Since the project will not require more than 100 cubic yards of dredging, a form BRP WW 8 is not required. The project is not subject to the Wetlands Protection Act (WPA) since it falls under the bridge exemption under the Transportation Bond Bill. The proposed roadway will have a similar horizontal and vertical alignment as the original but will be widened to accommodate additional shoulder width.

## Existing Conditions

North Spencer Road is a major collector with a posted speed limit of 40 mph and a current estimated average daily traffic volume of 5,150 vehicles per day. The road crosses Sevenmile River just south of the intersection of North Spencer Road and Hastings Road via Bridge S-23-012. North Spencer Road is generally oriented north to south and is largely paralleled by Sevenmile River, though in the vicinity of the project Sevenmile River generally flows west to east.

Fieldwork was performed to document existing site conditions including Bordering Vegetated Wetland delineation, mean annual high water/ordinary high water, topographic survey, stream bankfull width measurements, stream grade control elements, streambed elements, and streambed material documentation. A topographic survey of the site and surroundings was performed including 200 feet along the road to the north and 200 feet to the south. The stream was surveyed 300 feet upstream and downstream.

The existing bridge was originally built in 1938 and has a single span steel beam superstructure with a reinforced concrete bridge deck covered with an asphalt wearing course. The existing substructure consists of two concrete gravity abutments that terminate with four splayed concrete gravity wingwalls. The structure has a 34'-0" width and a 17'-1" clear span. The low chord of the existing bridge is approximately El. 709.17. The 25-yr design flood elevation for the existing bridge is El 707.22. The Ordinary High Water (OHW) is at El. 703.80. An existing utility line crosses the bridge diagonally from northwest to southeast. No other utilities are known to exist in the project area.

The approach roadway is approximately 23 to 24 feet wide with shoulder widths ranging from approximately 2 to 3 feet on the south side to 5 feet on the north side. There are no sidewalks on the existing structure or in the approaches. The existing roadway slopes from north to south from approximately 3.0% at the north end to less than 1.0% across the bridge and to the south. The existing runoff from the approach roadway and the bridge sheet flows over the roadway and overland to the existing river.

Sevenmile River is a perennial stream designated as a Coldwater Fishery by the Massachusetts Division of Fish and Wildlife and is tributary to the Chicopee River Basin. The headwaters originate in the northern portion of Spencer, Massachusetts from Browning Pond. The river flows south from the pond until it encounters a private dam (Lac Marie Dam) owned by the Cistercian Abbey of Spencer, Inc. and associated spillway approximately 120' upstream of the project bridge. From the dam it continues southeast under the bridge before turning south and continuing towards the southern end of Spencer. The banks in the vicinity of the project are relatively steep, with slopes as steep as 1:1 noted near the southeast wingwall and 1.5:1 near the northwest wingwall. Slopes in other areas are generally 3:1 or flatter. The channel has a bankfull width of 17.08 feet. The tributary watershed upstream of the bridge is approximately 6.3 square miles. The watershed is approximately 75% forested and 6% developed. The land use adjacent to the bridge is deciduous forest.

The existing channel under the bridge includes scattered cobbles on sandy gravel material. Based on the last bridge inspection report dated June 9, 2021, there is minor undercutting to the northeast embankment. Riprap is visible along the channel banks at various locations. Based on field survey, the bridge underclearance is 8.53 feet to the riverbed. Historic plans from 1938 show the underclearance to the riverbed as 10.75 feet. A comparison of these measurements indicates that, due to aggradation, the channel under the bridge has filled in approximately 2.22 feet since 1938. The scour described above is merely an area of less aggradation.

The area at the bridge site is located within a Zone A FEMA floodplain as shown in the Flood Insurance Rate Map (FIRM) community panel #25027C0567E, effective 7/4/2011. It is also designated as NHESP Priority Habitat of Rare Species for freshwater mussel species *Strophitus Undulatus*. A mussel survey, included in Appendix I, was conducted in January 2021, and specimens were identified in the project area. It has been determined that, prior to commencement of construction, translocation to a site downstream can be done anytime from early May to late September. A search of the Massachusetts Cultural Resources Information System (MaCRIS) shows no resources within the project area. Additionally, the project area is not within an Outstanding Resource Water (ORW) or Area of Critical Environmental Concern (ACEC).

The limits of Bordering Vegetated Wetlands (BVW) and Ordinary High Water (OHW) (Flags: A1-A19) were delineated and surveyed (Appendices G & H) in November 2020 to determine to what extent the project would impact these features. As noted within the Wetland Resource Delineation Report included in Appendix H, there is a small swath of scrub-shrub wetland located adjacent to the bank at the northeast end of the dam spillway (Flags: B1-B3). The wetland includes a narrow fringe of common winterberry with an understory of sensitive fern and broom sedge. The areas are in good condition and will not be impacted by the proposed construction activities. Therefore, no wetland mitigation will be required.

## **Proposed Bridge Replacement**

The proposed bridge replacement will consist of a precast concrete three-sided box culvert supported by precast concrete pedestal walls on precast concrete footings with approach slabs. The proposed structure will be constructed in a similar location and alignment as the existing bridge and widened to 37'-1" to accommodate the necessary roadway and shoulder width. The proposed profile will generally mirror the existing profile, to the extent possible. Refer to Appendix G for relevant project plans.

The removal of the existing structure and construction of the proposed replacement will follow the Massachusetts Stream Crossing Standards. The proposed abutments will be set back from the existing channel to provide a horizontal clear span of 22'-4", which is greater than or equal to 1.2 times the bank full width of 17.08'. Streambed and bank restoration associated with the permanent impacts will be required.

The channel directly under the structure will be restored to existing conditions in accordance with the plans and Streambed Restoration Specification (Item 983.36), with the existing streambed elevation being maintained. The bridge replacement is planned to be constructed using a two-stage process and accelerated bridge construction techniques to maintain a single lane of traffic along North Spencer Road during construction. The design flood (25-year discharge) for the proposed bridge is at El. 706.72. The bottom of the proposed footers will be at El. 695.00. The proposed low chord will be at El. 709.79. A 3-foot-thick layer of riprap will provide protection for the bridge wingwalls. The riprap placed below the high-water line will be infilled and covered by a 12-inch-thick layer of replaced existing streambed material to restore the streambed to existing grade.

## **Construction Sequencing**

The construction sequence will occur as follows:

1. Setup North Spencer Road traffic controls and Hastings Road detour.
2. Perform Mussel Sweep and Translocation
3. Install erosion and sedimentation control measures.
4. Relocate aerial utilities.
5. Install temporary traffic controls and protective shielding for Stage 1.
6. Saw cut and remove deck plates, deck, beams, other components of the existing bridge above the abutments noted for Stage 1 demolition.
7. Install temporary excavation support system.
8. Install resource area protection measures such as the turbidity curtain(s), cofferdam, sheet piling, and other Control of Water features necessary for Stage 1.
9. Excavate and store the top 12" of stream bed material for later restoration.
10. Perform Stage 1 demolition of existing bridge backwalls, abutments, and footings, as well as cutting the existing bridge abutment. All work is to be performed from dewatered work zone areas and any necessary heavy equipment (e.g. crane) shall be located within the roadway.
11. Prepare the subgrade and install Stage 1 of proposed footings, pedestal walls, wingwalls, 3-sided box culvert, and rip-rap slope protection.
12. Install the temporary excavation support system closure and backfill.
13. Install riprap slope protection and Stage 1 bridge components adjacent to the roadway and outside of the resource area (approach slabs, bridge rail, etc.)
14. Perform steps #3 through 12 as necessary for Stage 2 of the existing bridge demolition and installation of the proposed 3-sided box culvert.
15. Remove Control of Water
16. Place stored streambed material.
17. Stabilize all disturbed areas, remove turbidity curtains and other erosion and sedimentation control measures.
18. Remove traffic controls and signage and open up North Spencer Road and Hastings Road to through traffic.

## Wetland/Land Under Water/Waters of the US Impacts

Temporary and permanent Land Under Water / Waters of the US impacts are anticipated due to the installation of control of water features and requirements for proper construction of the proposed bridge. Removal of the existing structure, the proposed structure configuration, and hydraulic performance requirements dictate that channel reshaping and work in the channel is necessary; however, it will be limited to areas between the sheet piles and bridge abutments/wingwalls and most impacts will occur within 20 feet of the proposed structure footprint. The central portion of the existing channel will remain in place and be protected from disturbance by the temporary control of water sheet piles. Additional Land Under Water / Waters of the US will be added due to the increased span. These areas will be filled with existing streambed materials. A 3-foot-thick layer of riprap armoring will be provided at all four wingwalls. The riprap placed below the high-water line will be overlaid with a 12-inch-thick layer of existing streambed material. To further limit impacts, the riprap slopes will be 1.5H:1V.

A summary of the impacts is included below.

RESOURCE AREA	IMPACT
Land Under Water/Waters of US	374± SF (Perm)
Land Under Water/Waters of US	1,043± SF (Temp)
New Land Under Water/Waters of US	310± SF
Bordering Vegetated Wetlands	0± SF
Bank of River	30 LF / 342± SF (Perm)
	25 LF / 162± SF (Temp)
Discharges of Fill Material	39± CY (Temp)
	55± CY (Perm)
Net Discharges of Material	94± CY

The temporary (no loss) impact to Land Under Water / Waters of the US is for work between the temporary Control of Water and the existing bridge abutments, as well as work to construct the proposed bridge, wingwalls, and wingwall riprap revetment. The permanent Land Under Water / Waters of the US impact is for the construction of the riprap revetment. The temporary Bank of River impacts are for areas of proposed grading between the permanent bank impacts and the temporary Control of Water sheet piles. The Permanent Bank of River impacts are for work to install the riprap revetment. Temporary Discharges of Fill Material include the dredging of existing streambed to be replaced after the proposed bridge is constructed. Permanent Discharges of Fill Material include riprap areas adjacent to wingwalls.

All work will be performed in the dry using temporary sheet piles, cofferdams, and dewatering equipment. Large machinery (e.g. crane) will be operated from the upland areas of roadway east and west of the bridge to remove existing bridge components and to perform channel reshaping. The erection of the new structure will occur using machinery operating from the upland areas of roadway and includes end walls/abutments and precast concrete 3-sided box culvert installation via crane. Land Under Water / Waters of the US is added because of the increase in bridge span.

## Sedimentation Control

Appropriate erosion and sedimentation controls and other construction best management practices will be employed during construction to avoid or minimize impacts to the Sevenmile River and adjacent resource areas. Sheet piles and sandbag cofferdams or equivalent will be

utilized to isolate disturbed work areas from areas of the streambed that will remain in place. Turbidity curtains and sediment control barriers will provide supplementary protection outside the limits of the cofferdams. These erosion and sedimentation controls will be placed around the work zone to prevent movement of disturbed material towards nearby resource areas.

Approximately 1 foot of existing streambed material between the sheet piles and the existing bridge abutments will be excavated and replaced to match existing grade as part of the project work. Any debris that has fallen into the stream due to deterioration of the existing bridge will be removed during construction.

## **Dewatering**

Temporary cofferdams and dewatering will be required for the removal of the existing structure and the construction of the proposed channel, bridge pedestal walls, and wingwalls. Control of water during construction will be accomplished using sheet pile cofferdam supplemented with sandbags at the downstream ends. Any sheet pile cofferdam placed adjacent to the foundations of the culvert will be cut off 1 foot below final grade and left in place. All excavation and placement of proposed riprap and streambed armoring up to or above the OHW elevation will be conducted within the cofferdams. All sediment retained by the cofferdams shall be settled and/or removed prior to the removal of the cofferdams.

## **Stormwater Management & Massachusetts Stormwater Standards**

The proposed bridge/roadway will have approximately the same footprint as the existing bridge/roadway. The existing roadway is slightly elevated above or generally level with the adjacent terrain. The proposed roadway and bridge are slightly wider than existing conditions and taper back to meet existing at the project limits. Additional width is required to meet bridge design criteria and will keep runoff out of the travel area in the vicinity of and over the bridge while minimizing the overall project footprint. The project includes approximately 152 feet of proposed vertical curb along the bridge as required for the proposed bridge rail and bridge rail transitions as well as approximately 140 feet of asphalt berm to replace and extend the existing asphalt berm along the northeast quadrant of the nearby intersection. As a result of the added width and other incidental roadway improvements, approximately 1,060± SF of additional impervious will be added. Both existing and proposed impervious areas will be pretreated by the existing Vegetated Filter Strips, which will be reinforced with native seeding along the length of the project.

The project site does not generally have curbs except concrete bridge curb and approximately 380 feet of low reveal asphalt (approximately 2") berm along the eastern side of North Spencer Road starting at the intersection with Hastings Road. Existing runoff sheet flows over the roadway, down the roadway embankments, and overland to the river. There are no existing or proposed stormwater conveyance facilities. In both existing and proposed conditions, runoff travels through densely vegetated areas between the edge of the roadway and the Sevenmile River. These vegetated areas generally qualify as a Vegetated Filter Strips (VFS) since it extends for a minimum of 25' and is less than or equal to 6% slope in all areas except those closest to the bridge structure, where the slopes exceed 6% along the wingwalls and banks. The VFS will be reinforced with native seeding in proposed loam areas and will serve to provide pretreatment in proposed conditions as well.

The bridge replacement project is subject to the Stormwater Standards. All the work occurs within existing developed areas, and existing runoff characteristics will broadly be maintained. A completed stormwater checklist is included.

1. *No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

There are no proposed stormwater conveyances in the project vicinity. Runoff from the project site sheets flows overland via VFS to the river. As there are no new untreated stormwater conveyances discharging to wetlands or waters of the Commonwealth, Standard #1 is fully met.

2. *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 as defined in 310 CMR 10.04.*

In existing conditions, the project limit contains approximately 14,070 sf of impervious, which will be expanded to 15,130 sf after construction is completed. Thus, approximately 1,060± sf of impervious coverage will be added due to minor widening needed to accommodate the width of the bridge. Per the Hydraulic Study Report prepared by MassDOT in April 2023, the total drainage area to the crossing is about 6.27 square miles, approximately 6.1% (0.38 square miles) of which is developed. The total post-development impervious from the project site of 15,130 sf (0.35 acres) therefore represents only 0.14% of the impervious area tributary to the crossing.

Given the minor impervious increase, stormwater runoff peak discharge rates from the proposed development will slightly exceed pre-development rates as summarized in the table below. For the calculations, a time of concentration of 10 minutes was assumed for both existing and proposed conditions. As noted in the chart below, the increase in peak rate of runoff from the project limits is minor. Further, per the Hydraulic Study Report, the peak rates to the bridge (summarized below) dwarf those from the project area in proposed conditions. For example, in the 2-yr storm event, the entirety of the estimated proposed peak rate of runoff from the project limit is approximately 0.60% of the peak rate to the bridge from all tributary areas. The percentages for the 10-yr and 100-yr storms are 0.43% and 0.28% respectively.

To mitigate the increase in impervious, the project design proposes to reinforce the existing Vegetated Filter Strips (VFS) by specifying native seeding along proposed loam areas upstream of the existing VFS which are currently either regular grass or unvegetated. This can be reasonably expected to result in an increase in the time of concentration as the vegetation becomes more established, which should further reduce peak runoff rates from the project limits. Existing space constraints and presence of established vegetation makes construction of new SCMs, such as leaching basins, not practicable. Thus, Standard #2 is met to the maximum extent practicable.

<b>Storm Event</b>	<b>Ex Peak Rate – Project Limits (CFS)</b>	<b>Pr Peak Rate – Project Limits (CFS)</b>	<b>Regional Peak to Bridge (CFS)</b>
<b>2-yr/24-hr</b>	0.90	0.97	166
<b>10-yr/24-hr</b>	1.41	1.52	376
<b>100-yr/24-hr</b>	2.22	2.38	840

3. *Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best 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 type. 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.*

Approximately 1,060± sf of impervious coverage will be added due to minor widening needed to accommodate the width of the bridge. The recharge volume for that increase is approximately 88± CF for 1-inch runoff treatment. A linear infiltration practice was investigated to treat an equivalent volume, however, since this additional coverage is well distributed across the site and the impacts will be mitigated by the reinforced existing VFS, it was not proposed as part of the design. As discussed above, existing conditions limit the available space for proposed stormwater management facilities, and creating more space would involve disrupting dense forest. Thus, Standard #3 is met to the maximum extent practicable.

4. *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.*

While there is an overall increase to impervious, the new impervious areas will be evenly distributed throughout the drainage area to the river and contained to the shoulders of the existing roadways, which drain via sheet flow to existing VFS. The existing VFS will be reinforced with native seeding on proposed loam areas. The existing roadways and vehicular travel they facilitate are the primary contributor to pollutants in the project area and none of the proposed work itself will lead to an increase in pollutant loads. Improvements to the longitudinal profile and cross slopes of the existing roadways will help ensure runoff reaches the VFS prior to reaching the river, which will mitigate some of the TSS load. Thus, Standard #4 is met to the maximum extent practicable.

5. *For land uses with higher potential pollutant loads, 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 land uses with higher potential pollutant loads 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 land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the*

*regulations promulgated there under at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.*

This project is not a land use associated with higher potential pollutant loads so Standard #5 is not applicable.

6. *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 "storm water 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.*

The project is not located within a Zone II or Interim Wellhead Protection Zone, Outstanding Resource Water, or Special Resource Water; however, the Sevenmile River is designated as a Coldwater Fishery, which is considered a critical area. The project will meet the pretreatment component of Standard #6 to the maximum extent practicable by utilizing and reinforcing the existing Vegetated Filter Strips and existing vegetated channels at the bottom of the Vegetated Filter Strip slopes. These SCMs are specifically noted in the Massachusetts Stormwater Handbook as being usable near Coldwater fisheries and will provide a combined TSS treatment percentage of 73%.

Furthermore, per the MassDEP Stormwater Handbook, under the *Specific Redevelopment Projects* section of Volume 2, Chapter 3 indicates that for redevelopment projects adjacent to Coldwater Fisheries a high priority should be placed on mitigating thermal impacts, with specific techniques noted such as maintaining time of concentration and disconnecting impervious areas. For this project, both techniques are being utilized. Impervious disconnection is the primary treatment mechanism for stormwater on the project site and time of Concentration values will be maintained or improved by protecting and enhancing the existing VFS and grass channels.

Other BMP options noted within the Best Management Practices for Cold-Water Fisheries table were investigated. Many options do not make practical sense within the confines of the limited project scope, or when considering existing site constraints such as the lack of available space, existing drainage infrastructure, and existing topography. These factors led to options such as deep sump catch basins, leaching basins, and infiltration basins to be deemed impractical. Water quality swales were also investigated; however providing the necessary grading to ensure they are flat enough, along with the required berms to detain the water quality volume will result in at least temporary negative impacts to the tree canopy and existing vegetation, which will increase the thermal impacts from the project area. This might be warranted if the proposed impervious increase were larger, but given the small increase, particularly relative to the total impervious area tributary to the crossing, the best approach is maintaining the established BMPs.



7. *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.*

This project is considered a redevelopment project. Standard #1 is fully met. Standards #2 through 4 and 6 are met to the maximum extent practicable. Standard #5 does not apply. Standards #8-10 are fully met and are outlined below.

8. *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 proposed design includes erosion and sediment controls to minimize the potential for sedimentation in down-gradient resource areas as outlined in this document and the construction plans.

9. *A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

The roadway is owned by MassDOT, however there are no specific existing or proposed stormwater management systems in the project area that require an Operation and Maintenance Plan. The bridge itself is owned by the Municipality according to the MassDOT Open Data Portal. An Operation and Maintenance Plan is included in Appendix J.

10. *All illicit discharges to the stormwater management system are prohibited.*

The design plans submitted with this report have been designed in full compliance with Standard 10. The project area does not have any known illicit discharges. The Long-Term Pollution Prevention Plan (LTPPP) includes measures to prevent illicit discharges. Appendix J includes the LTPPP for this project.

## **Fisheries and Wildlife/Natural Heritage Endangered Species/Vernal Pools**

The Sevenmile River is not designated as an Outstanding Resource Water. The project occurs entirely within NHESP mapped Estimated and Priority habitat. The area is not located within an Area of Critical Environmental Concern or Potential or Certified Vernal Pools. No specific fish species have been identified as part of this project within the Sevenmile River via field investigations or available online mapping.

According to the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) online mapping tool, the Northern Long Eared Bat (NLEB)(Myotis Septentrionalis) may be found within the project limits. Coordination has been undertaken with the USFWS and it has been determined that the project will have no effect on the species. Refer to Appendix D for more information.

## Massachusetts Stream Crossing Standards

The following table summarizes the project’s compliance with the Massachusetts Stream Crossing Standards. A more detailed discussion of each standard is included thereafter.

Standard	Proposed	Compliant
<b>1 – Spans that preserve natural channel preferred</b>	3-sided box	Y
<b>2 – Culvert Embedment (Pedestal Walls and Footers for Proposed Project)</b>	6.15 FT below stream bed	Y
<b>3 – Span is minimum of 1.2x bankfull width</b>	22’-4” span	Y
<b>4 – Natural bottom substrate within structure</b>	Natural stream	Y
<b>5 – Water depth &amp; velocity comparable to existing</b>	Comparable per 4/24/23 MassDOT Hydraulic Study Report	Y
<b>6 – Openness &gt; 0.82 feet</b>	193.7 SF/ 45.1 FT = 4.29 FT	Y
<b>7 – Match existing horizontal profile for constructed banks</b>	1:1.5 MAX	Y

1. *Spans (bridges, 3-sided box culverts, open-bottom culverts, or arches) that preserve the natural stream channel are strongly preferred.*

Standard #1 has been met. The project proposes a pre-cast concrete 3-sided box culvert set on pre-cast concrete footers and pedestal walls.

2. *If a culvert, then it should be embedded a minimum of 2 feet for all culverts, minimum of 2 feet and at least 25% for round pipe culverts, and when embedment material includes elements > 15 inches in diameter, embedment depths should be at least twice the  $D_{84}$  of the embedment material.*

Standard #2 has been met. The footers and pedestal walls that will support the proposed box culvert will be embedded to a depth of approximately 6.15’ below the streambed elevation (footer bottom elevation = 695.00, channel bottom elevation = approximately 701.15 per MassDOT Hydraulic Study Report, dated April 24, 2023).

3. *Spans channel width (a minimum of 1.2 times the bankfull width)*

Standard #3 has been met. The bankfull width is approximately 17’-1”, and the proposed span is 22’-4”, which is approximately 1.3 times the bankfull width.

4. *Natural bottom substrate within the structure*

Standard #4 has been met. The project proposes to remove and storm the top 12” of existing streambed material that will be relaid once work within the stream is completed.

5. *Designed with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows.*

Standard #5 has been met. Per the Hydraulic Study Report prepared by MassDOT, last revised April 2023, the water depth and velocity in proposed conditions are comparable to existing conditions.

6. *Openness > 0.82 feet (0.25 meters)*

Standard #6 has been met since the openness ratio is 4.29 feet, which is greater than 0.82 feet.

7. *Banks should be present on each side of the stream matching the horizontal profile of the existing stream and banks.*

A small portion of the banks will need to be reconstructed in the vicinity of the proposed wingwalls. These areas will be constructed with rip-rap and have a maximum slope of 1:1.5, which is consistent with existing conditions in these areas and meets the Stream Crossing Standards. Therefore, Standard #7 has been met.

## **Alternatives Analysis**

The existing bridge is structurally deficient. The bridge has deteriorated to a point of action with respect to maintenance. Three general alternatives have been considered: no-build, repair of the existing structure, or replacement of the entire structure.

### Alternative 1 – No Build

The No-Build alternative would cost nothing and have no environmental impacts; however, it is not viable because the deficiencies in the deck and structure are too severe, and the bridge does not meet current AASHTO truck loading standards. Inspection reports prepared to date have noted severely deteriorated concrete supporting the bridge rails, spalled, rusting reinforcing steel, and section loss. Several of the bridge rail posts and anchor bolts are undermined due to concrete deterioration. Concrete disintegration, cracking, and efflorescence were noted on the concrete abutments and wingalls. These deficiencies necessitate further action to maintain safe crossing at the bridge.

### Alternative 2 – Repair of the Existing Structure

Repairs to the existing structure have been performed several times in recent years to keep the bridge open to two-way traffic, including emergency deck repairs via placing steel plates over deck holes in the northbound wheel path (2014) and the southbound wheel path (2017). Further repair options were considered in the Bridge Alternatives Analysis prepared by Gill Engineering Associates, Inc. in March 2018, but this alternative was not chosen because it would not bring the bridge in line with current statutory requirements, required ongoing maintenance, and would not appreciably extend the lifespan of the existing bridge due to the on-going deterioration of the beams and substructure. The ongoing maintenance and eventual need of replacement means this alternative would cost more in the long run than replacement now. Further, this would only delay the environmental impacts associated with replacement.

### Alternative 3 – Replacement of the Existing Structure

This is the chosen alternative. The proposed bridge will meet current statutory capacity requirements and the Massachusetts Stream Crossing standards while minimizing the extent of impacts to resource areas and the public. An accelerated construction schedule has been developed to minimize the duration of these impacts as well.

Alternatives to the proposed structure that varied dimensionally were investigated within the previously mentioned Bridge Alternatives Analysis. These alternatives do not meet the stream crossing standards in a way that is less disruptive to resource areas or the public since they are generally wider to provide additional space for sidewalk/bike paths connections. The increased spans would cost more and potentially result in encroachment into adjacent wetland areas, which are currently undisturbed by the project.

### **Summary/Conclusion**

The existing bridge is structurally deficient and must be replaced. The proposed replacement project has been designed in a way that allows for this replacement while minimizing disruption to resource areas and providing stormwater management via a reinforced Vegetated Filter Strip. The applicant respectfully requests that MassDEP 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.

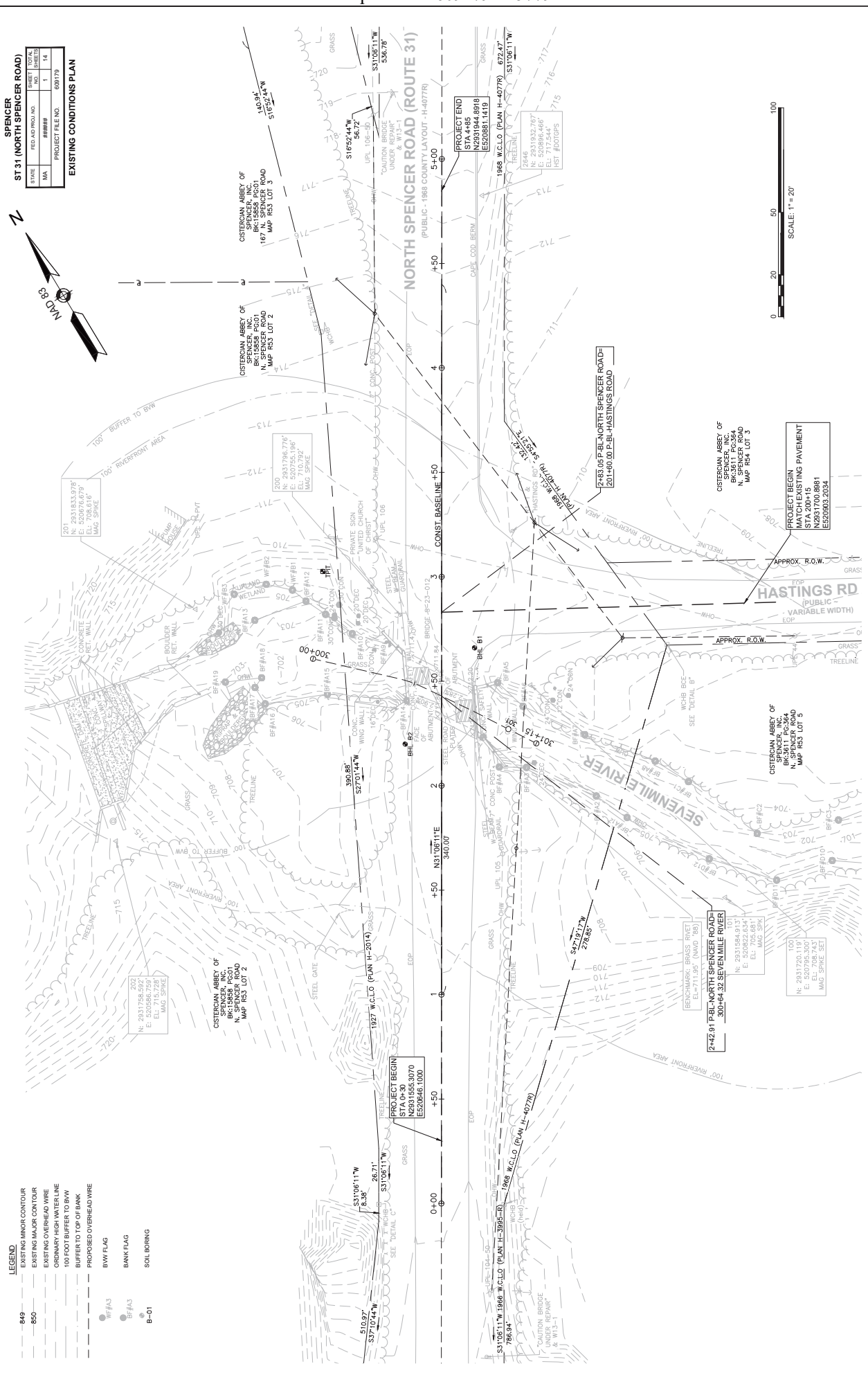
**SPENCER ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		14	14
PROJECT FILE NO. 609179			

**EXISTING CONDITIONS PLAN**



- LEGEND**
- - - 840 EXISTING MINOR CONTOUR
  - - - 850 EXISTING MAJOR CONTOUR
  - - - EXISTING OVERHEAD WIRE
  - - - EXISTING OVERHEAD WIRE
  - - - 100 FOOT BUFFER TO HWY
  - - - BUFFER TO TOP OF BANK
  - - - PROPOSED OVERHEAD WIRE
  - W#FA3
  - BW#FLAG
  - BK#A3
  - B-01



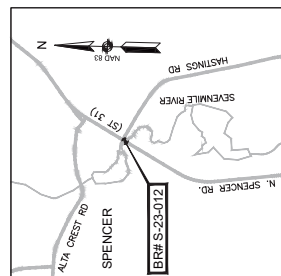


**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

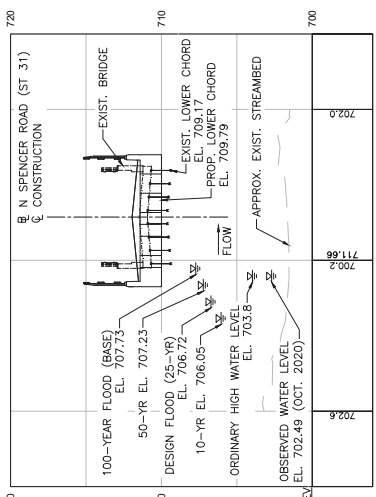
STATE	FEED AS PER NO.	SHEET NO.	TOTAL SHEETS
MA		3	14
PROJECT FILE NO.	609179		

**KEY PLAN, PROFILES & LOCUS MAP**

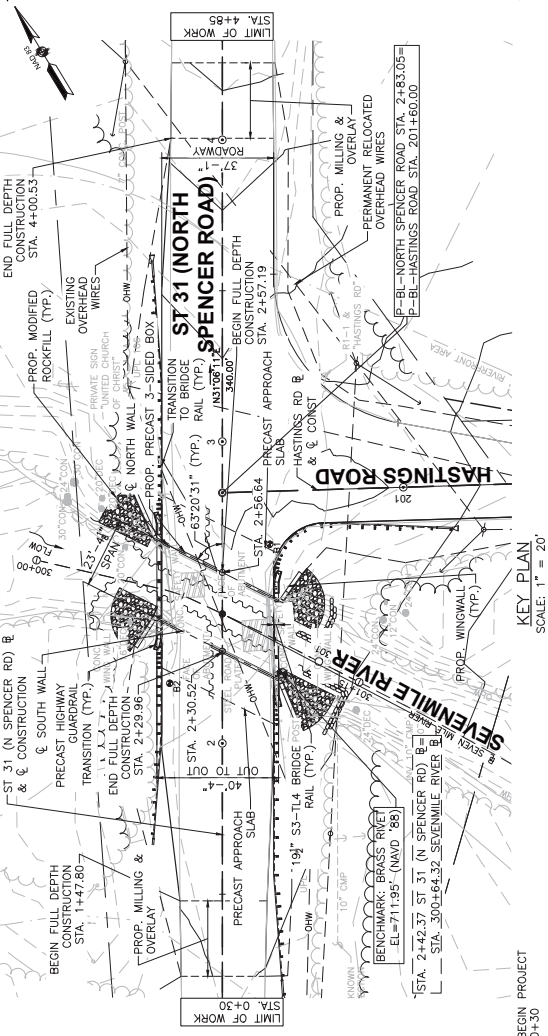
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  - 16 - PRECAST WINGWALL ELEVATIONS
  - 17 - PRECAST WINGWALL DETAILS
  - 18 - PRECAST APPROACH SLAB DETAILS
  - 19 - PRECAST APPROACH SLAB DETAILS
  - 20 - FRAMING PLAN & ROOF CROSS-SECTION
  - 21 - PRECAST ERECTION & FABRICATION TOLERANCES
  - 22 - PRECAST HIGHWAY GUARDRAIL TRANSITION I
  - 23 - PRECAST HIGHWAY GUARDRAIL TRANSITION II
  - 24 - BRIDGE RAIL
  - 25 - STAGE I SUGGESTED ERECTION PROCEDURE
  - 26 - STAGE II SUGGESTED ERECTION PROCEDURE



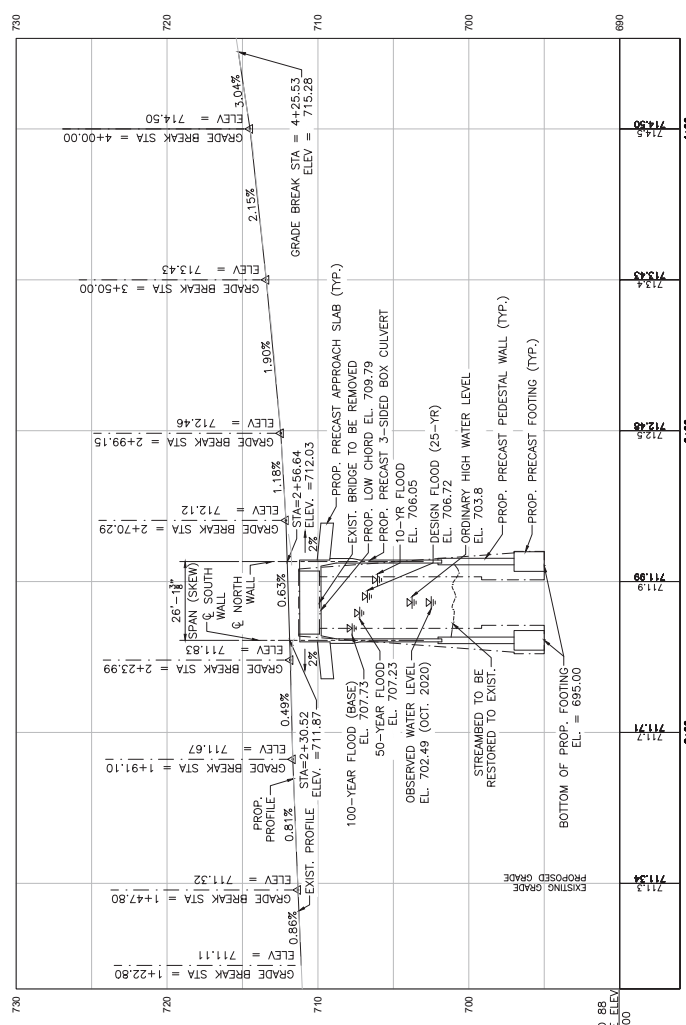
**LOCUS PLAN**  
SCALE: 1" = 1000'



**PROFILE SEVENMILE RIVER**  
SCALE: 1" = 20' HORIZONTAL  
3" = 1'-0" VERTICAL



**KEY PLAN**  
SCALE: 1" = 20'



**PROFILE ALONG CENTERLINE OF CONSTRUCTION ST 31 NORTH SPENCER ROAD OVER SEVENMILE RIVER**  
SCALE: 1" = 20' HORIZONTAL  
3" = 1'-0" VERTICAL

ISSUED FOR CONSTRUCTION

**PROPOSED BRIDGE**  
**SPENCER**  
ST 31 (NORTH SPENCER ROAD)  
OVER SEVENMILE RIVER  
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION  
10 PARK PLAZA BOSTON, MASS

**BAYSIDE ENGINEERING**  
100 WASHINGTON ST., 10TH FLOOR  
BOSTON, MA 02108  
TEL: 617-552-1100  
WWW.BAYSIDEENGINEERING.COM

STATE BRIDGE ENGINEER \_\_\_\_\_ CHIEF ENGINEER

**GENERAL NOTES:**

DESIGN: IN ACCORDANCE WITH THE 2009 AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS URBAN BRIDGE DESIGN SPECIFICATIONS FOR HL-93 LOADING. EXISTING BRIDGE PLANS FOR THE EXISTING BRIDGE, DATED OCTOBER 1938, MAYBE SEEN AT THE OFFICE OF THE PORTLAND CEMENT MANUFACTURER, MASSACHUSETTS HIGHWAY DEPARTMENT, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

MASSDOT BENCH MARK: THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT AND ELEVATIONS ARE SHOWN AS 800.00 FEET WITH AN ELEVATION OF 711.95 LOCATED AT TOP OF THE SOUTHEAST WINGWALL.

DATE: TO BE PLACED ON THE INSIDE FACE OF THE SOUTHEASTERLY AND NORTHWESTERLY ABUTMENTS. THE NUMERALS WILL BE FINISHED. THE DATE USED SHALL BE THE LATEST YEAR OF THE CONTRACT COMPLETION AS OF THE DATE THE FIRST HIGHWAY GUARDRAIL TRANSITION IS CONSTRUCTED. BOTH HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

MASSDOT SURVEY NOTEBOOKS: ELECTRONIC SURVEY WAS USED IN THE PREPARATION OF CONSTRUCTION DRAWINGS AND A COPY OF THE FILES MAY BE OBTAINED FROM MASSDOT.

SCALES: SCALES NOTED ON THE PLANS ARE NOT APPLICABLE TO REDUCED SIZE PRINTS. DIVIDE SCALES BY 2 FOR HALF-SIZED PRINTS (A3).

FOUNDATIONS: FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.

UNSUITABLE MATERIAL: UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURE, AS DIRECTED BY THE ENGINEER.

CONCRETE: CONCRETE SHALL BE 4000 PSI HP CEMENT CONCRETE EXCEPT AS NOTED BELOW: SAFETY BARS AT SLAB EDGES SHALL BE 30" WIDE. PRECAST HIGHWAY GUARDRAIL TRANSITIONS: THE PRECAST 3-SIDED BOX, THE PRECAST APPROACH SLAB SHELF, PRECAST PEDESTAL WALLS, AND PRECAST WINGWALL STEM SHALL BE 5000 PSI 3' 685 HP CEMENT.

REINFORCEMENT: STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M. 31 GRADE 60, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS. ALL BARS SHALL BE LAPPED AS FOLLOWS:

- |   |         |         |         |
|---|---------|---------|---------|
| MODIFICATION CONDITION                          | #4 BARS | #5 BARS | #6 BARS |
| 1. NONE   | 16"     | 19"     | 23"     |
| 2. 12" OF CONCRETE BELOW BAR                    | 20"     | 25"     | 30"     |
| 3. COATED BARS, COVER <34, OR CLEAR SPACING <6d | 23"     | 29"     | 34"     |
| 4. COATED BARS, ALL OTHER CASES                 | 18"     | 23"     | 27"     |
| 5. CONDITION 2. AND 3.                          | 26"     | 32"     | 39"     |
| 6. CONDITION 2. AND 4.                          | 24"     | 30"     | 36"     |

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ALL REINFORCEMENT SHALL BE COATED.

UTILITIES: ALL EXISTING UTILITIES SHALL BE LOCATED AND PROTECTED BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY OWNERS TO BELOCATED OVERHEAD WIRES AND UTILITY POLES AS REQUIRED BY THE CONSTRUCTION.

TRAFFIC: BRIDGE WILL BE OPEN TO TRAFFIC DURING ALL PHASES OF DEMOLITION AND CONSTRUCTION. REFER TO THE TEMPORARY TRAFFIC CONTROL PLANS FOR THE ASSOCIATED DETOUR.

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#####	4	14
PROJECT FILE NO.		609179	

**GENERAL NOTES & ESTIMATED QUANTITIES**

TRAFFIC DATA		ROADWAY OVER	ROADWAY UNDER
DESIGN YEAR		2042	YEAR
AVERAGE DAILY TRAFFIC - PRESENT		3150	ADT
AVERAGE DAILY TRAFFIC - DESIGN YEAR		6000	ADT
DESIGN HOURLY VOLUME		50%	DESIGN
DIRECTIONAL DISTRIBUTION		N/A	DIR.
TRUCK PERCENTAGE - AVERAGE DAY		2%	TRUCK
TRUCK PERCENTAGE - PEAK HOUR		2%	TRUCK
DESIGN SPEED		45 MPH	DES.
DIRECTIONAL DESIGN HOURLY VOLUME		251	DDHV

SEISMIC DESIGN CRITERIA	
DESIGN RETURN PERIOD:	1000 YR
DESIGN SPECTRA	
As	0.098
Sds	0.214
SD1	0.091
D	D
SITE CLASS	A
SEISMIC DESIGN CATEGORY (SDC)	

HYDRAULIC DESIGN DATA	
DRAINAGE AREA (SQ. MILES)	6.27
DESIGN FLOOD DISCHARGE (C.F.S.)	531
DESIGN FLOOD FREQUENCY (YEARS)	25
DESIGN FLOOD VELOCITY (F.P.S.)	4.32
DESIGN FLOOD ELEVATION (FEET, NAVD)	706.72
BASE (100-YEAR) FLOOD DATA	
BASE FLOOD DISCHARGE (C.F.S.)	840
BASE FLOOD ELEVATION (FEET, NAVD)	707.73
DESIGN AND CHECK SCOUR DATA	
DESIGN SCOUR FLOOD EVENT	
RETURN FREQUENCY (YEARS)	50
DESIGN FLOOD ABUTMENT SCOUR DEPTH (FEET)	0.82
DESIGN FLOOD PIER SCOUR DEPTH (FEET)	N/A
CHECK SCOUR FLOOD EVENT	
RETURN FREQUENCY (YEARS)	100
CHECK FLOOD ABUTMENT SCOUR DEPTH (FEET)	1.02
CHECK FLOOD PIER SCOUR DEPTH (FEET)	N/A
FLOOD OF RECORD	
DISCHARGE (C.F.S.)	N/A
FREQUENCY (IF KNOWN, YEARS)	N/A
MAXIMUM ELEVATION (FEET, NAVD)	N/A
DATE (MM/YY)	N/A
HISTORY OF ICE FLOES	NONE
EVIDENCE OF SCOUR AND EROSION	NONE

TEMPORARY WATER CONTROL DESIGN DATA	
DESIGN FLOOD DISCHARGE (C.F.S.)	166
DESIGN FLOOD FREQUENCY (YEARS)	2
DESIGN FLOOD VELOCITY (F.P.S.)	5.93
*DESIGN FLOOD ELEVATION (FEET, NAVD)	706.89

\*THIS IS THE RECOMMENDED TOP OF COFFERDAM ELEVATION

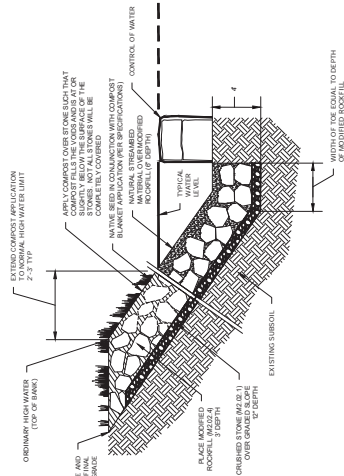
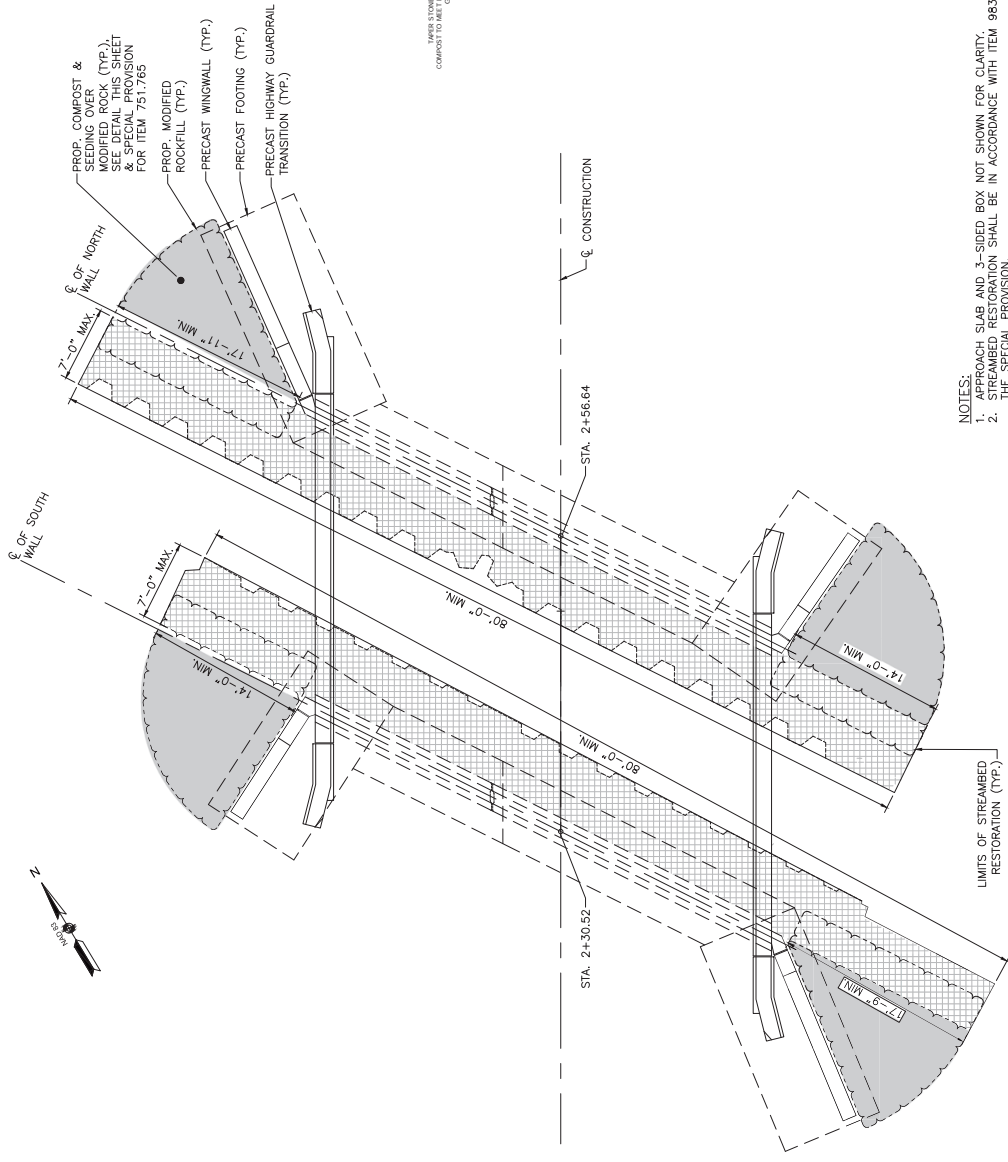
ESTIMATED QUANTITIES (NOT GUARANTEED)		QUANTITY UNITS
DEMOLITION OF SUPERSTRUCTURE OF BRIDGE BR. NO. S-23-012 (DE)		1, LS
CONCRETE EXCAVATION		400 CY
BRIDGE ROCK EXCAVATION		840 CY
BRIDGE ROCK EXCAVATION		40 CY
GRAVEL BORROW FOR BACKFILLING STRUCTURES & PIERS		560 CY
CRUSHED STONE FOR BRIDGE FOUNDATIONS		235 TON
CRUSHED STONE FOR FILTER BLANKET		45 CY
SUPERPAVE BRIDGE SURFACE COURSE-9.5 POLYMER (SSC-B-9.5-F)		11 TON
SUPERPAVE BRIDGE PROTECTIVE COURSE-9.5 POLYMER (SPC-B-9.5-F)		25 TON
GEOTEXTILE FABRIC FOR SEPARATION		130 SY
MUSSEL TRANSLOCATION		1 LS
TEMPORARY BARRIER - LIMITED DEFLECTION (1L-3)		230 FT
TEMPORARY BARRIER - LIMITED DEFLECTION (1L-3) REMOVE AND RESET		230 FT
MODIFIED ROCKFILL		160 TON
STREAMBED MATERIAL REMOVED AND RELAND		45 CY
NATURAL STREAMBED MATERIAL		25 CY
TEMPORARY EXCAVATION SUPPORT - BR. NO. S-23-012 (CCL)		1 LS
TEMPORARY WATER CONTROL STRUCTURE - BR. NO. S-23-012 (CCL)		1 LS
TEMPORARY PILING - BR. NO. S-23-012 (CCL)		1 LS
BRIDGE STRUCTURE, BRIDGE NO. S-23-012 (CCL)		1 LS

MMMM DD, YYYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	



**SPENCER**  
ST 31 (NORTH SPENCER ROAD)  
STREAMBED RESTORATION PLAN

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
MA	609179	5	14
DATE	PROJECT FILE NO.		
	609179		



RIVERBANK ARMORING AND COMPOST/SEEDING  
NOT TO SCALE

- NOTES:
1. APPROACH SLAB AND 3-SIDED BOX NOT SHOWN FOR CLARITY.
  2. THE SPECIAL PROVISION SHALL BE IN ACCORDANCE WITH ITEM 983.35 OF SPECIAL PROVISIONS.
  3. STREAMBED RESTORATION SHOWN AS THIS: [Hatched Pattern]

STREAMBED RESTORATION PLAN  
SCALE: 1" = 1'-0"

ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	STATE BRIDGE ENGINEER	USE ONLY PRINTS OF LATEST DATE

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

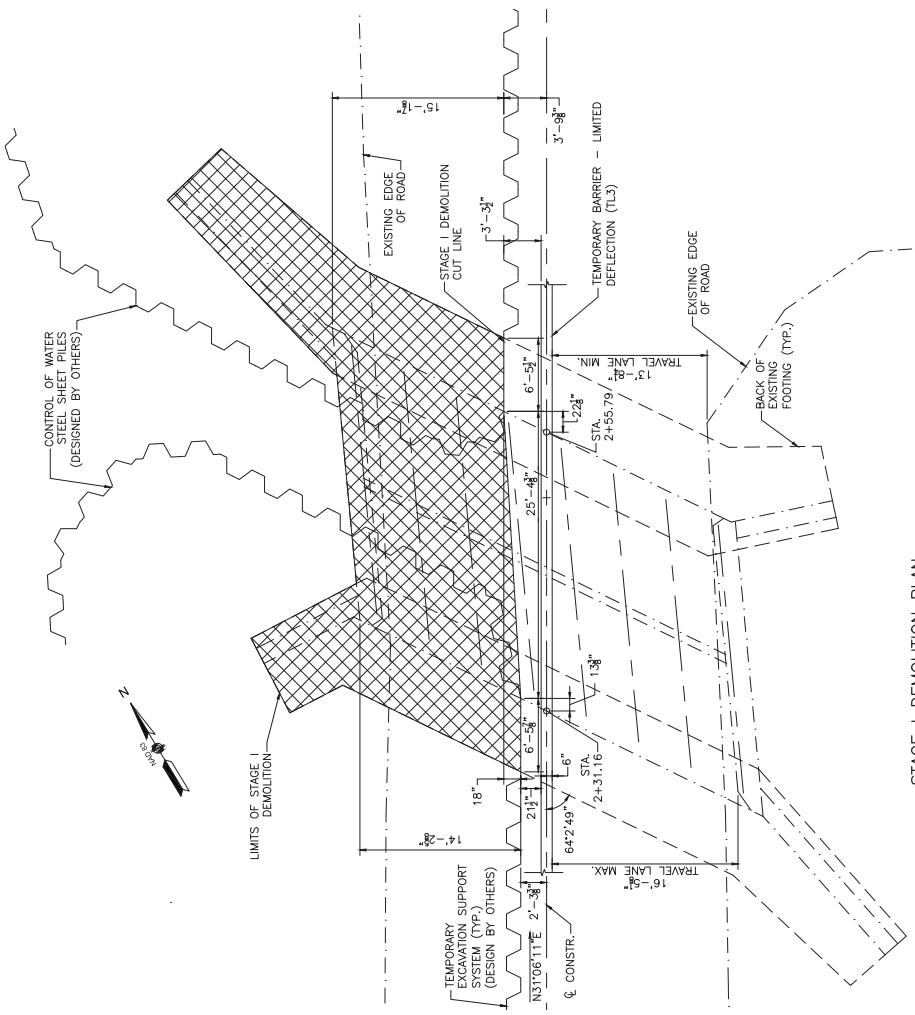
DATE	REVISION NO.	SHEET NO.	TOTAL SHEETS
MA	##	9	14
PROJECT FILE NO. 609179			

**STAGE I DEMOLITION**

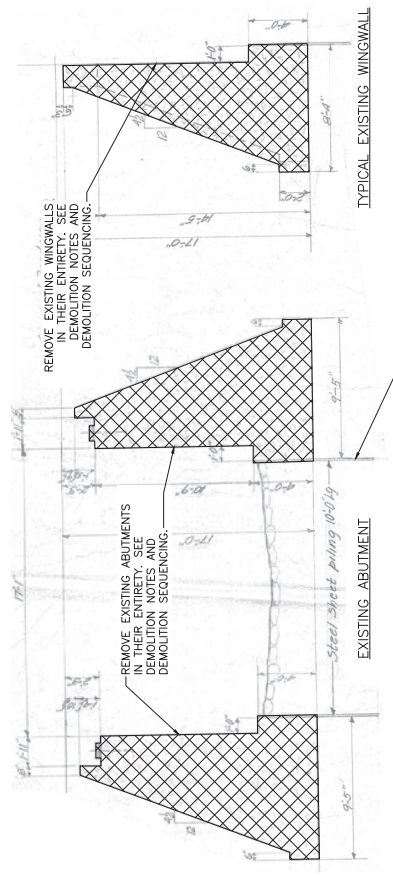
- DEMOLITION NOTE:**
1. SEE EXISTING SUBSTRUCTURE SECTIONS THIS SHEET.
  2. EXISTING SUBSTRUCTURE SECTIONS TO BE DEMOLISHED SHALL BE IN ACCORDANCE WITH ITEM 114.1 AND 127.1 OF THE SPECIAL PROVISIONS.

**STAGE I DEMOLITION SEQUENCE:**

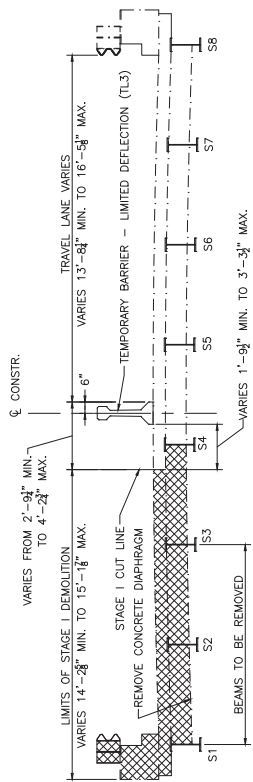
1. RELOCATE OVERHEAD UTILITIES.
2. INSTALL TEMPORARY TRAFFIC CONTROLS FOR STAGE I.
3. INSTALL TEMPORARY TRAFFIC SHIELDING TO THE WEST OF THE STAGE I DEMOLITION LINE.
4. SAW CUT NEAT LINES IN THE DECK AT THE STAGE I DEMOLITION CUT LINE.
5. REMOVE THE DECK SLATES, DECK BEAMS S1-S3, BEARINGS, AND FOOTINGS WEST OF THE STAGE I DEMOLITION CUT LINE WITHOUT DAMAGING THE COMPONENTS TO REMAIN.
6. INSTALL TEMPORARY EXCAVATION SUPPORT SYSTEM (DESIGNED BY OTHERS).
7. INSTALL CONTROL OF WATER (DESIGNED BY OTHERS).
8. REMOVE THE EXISTING SUBSTRUCTURE MATERIAL TO THE LIMITS SHOWN ON THE STREAMBED RESTORATION PLAN IN ACCORDANCE WITH ITEM 983.35 OF THE SPECIAL PROVISIONS.
9. EXCAVATE THE ABUTMENTS & WINGWALLS WEST OF THE STAGE I DEMOLITION CUT LINE.
10. SAW CUT NEAT LINES ON ALL FACES OF THE BACKWALLS, ABUTMENTS, AND FOOTINGS AT THE STAGE I DEMOLITION CUT LINE.
11. REMOVE THE NORTHWEST AND SOUTHWEST WINGWALLS AND FOOTINGS IN THEIR ENTIRETY.
12. REMOVE THE NORTHWEST AND SOUTHWEST ABUTMENTS WEST OF THE STAGE I DEMOLITION CUT LINE WITHOUT DAMAGING THE COMPONENTS TO REMAIN.
13. CUT DOWN EXISTING ABUTMENT SHEET PILES TO THE BOTTOM OF THE LIMITS OF CRUSH STONE FOR BRIDGE FOUNDATION (SEE SHEET 14).



**STAGE I DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"



**EXISTING SUBSTRUCTURE SECTIONS**  
SCALE: 3/8" = 1'-0"

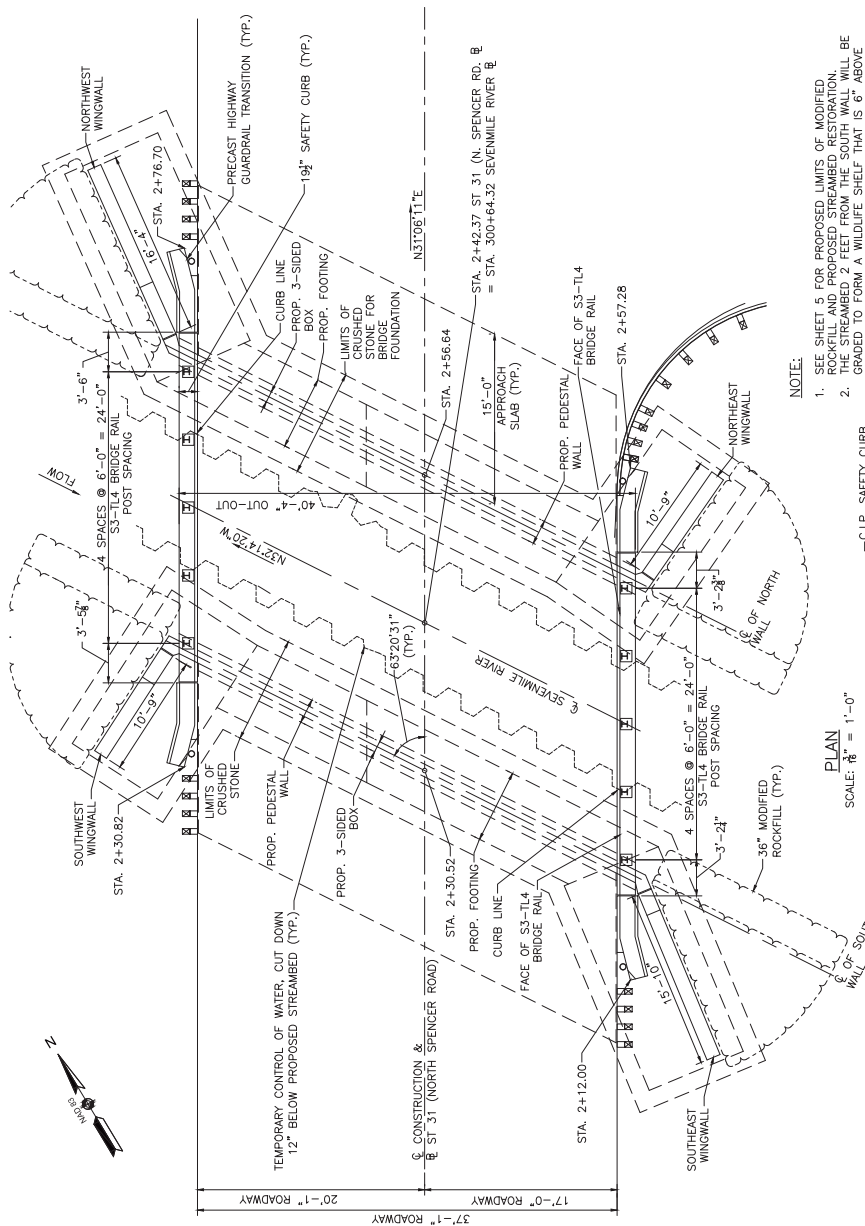


**STAGE I DEMOLITION SECTION**  
SCALE: 3/8" = 1'-0"

UNIM ID, YYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY: STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

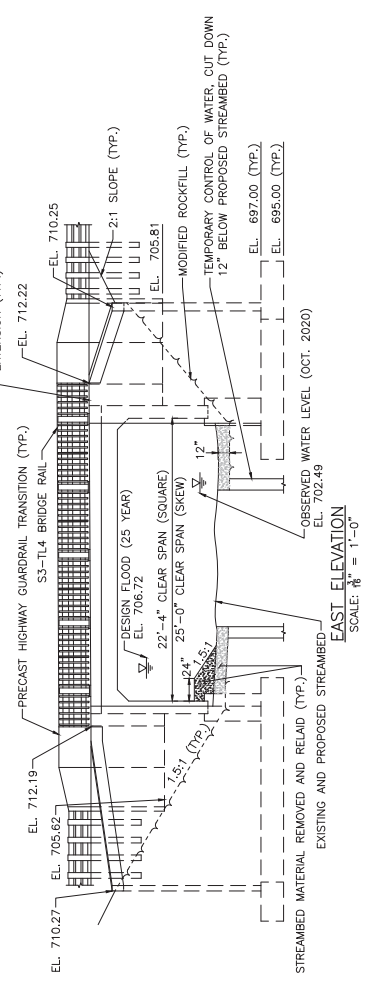
**SPENCER  
ST 31 (NORTH SPENCER ROAD)  
PLAN & ELEVATION**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		7	14
PROJECT FILE NO.	609179		



- NOTE:**
- SEE SHEET 5 FOR PROPOSED LIMITS OF MODIFIED ROCKFILL AND PROPOSED STREAMBED RESTORATION. ALL STREAMBED RESTORATION SHALL BE GRADED TO FORM A WILDLIFE SHELF THAT IS 6" ABOVE THE NORMAL WATER LEVEL.

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



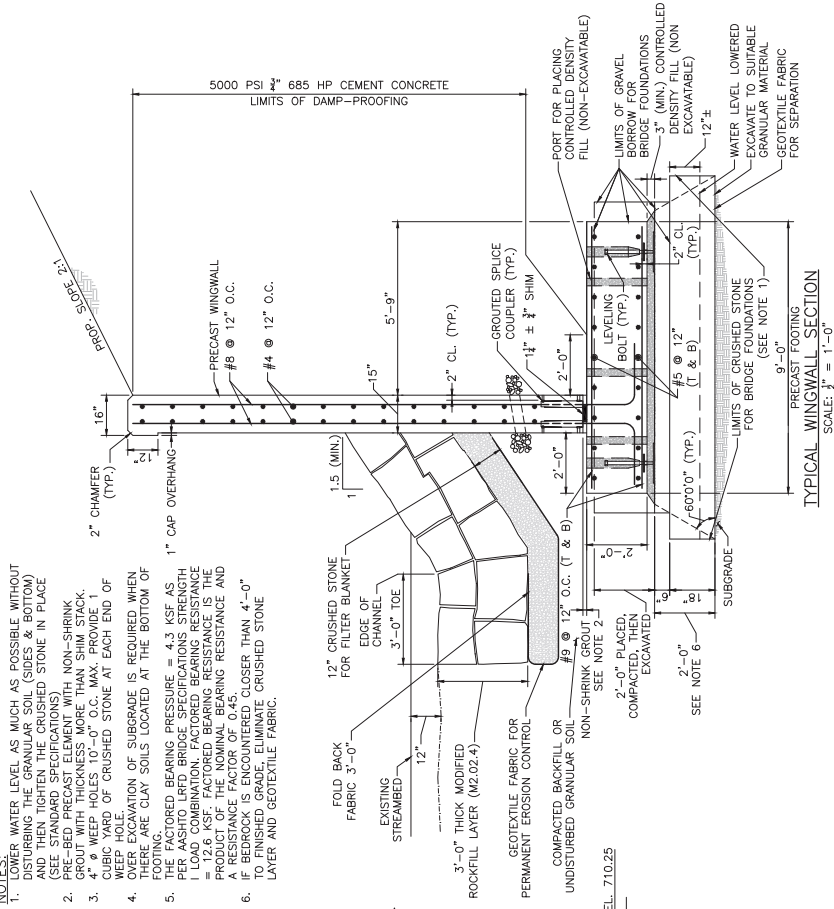
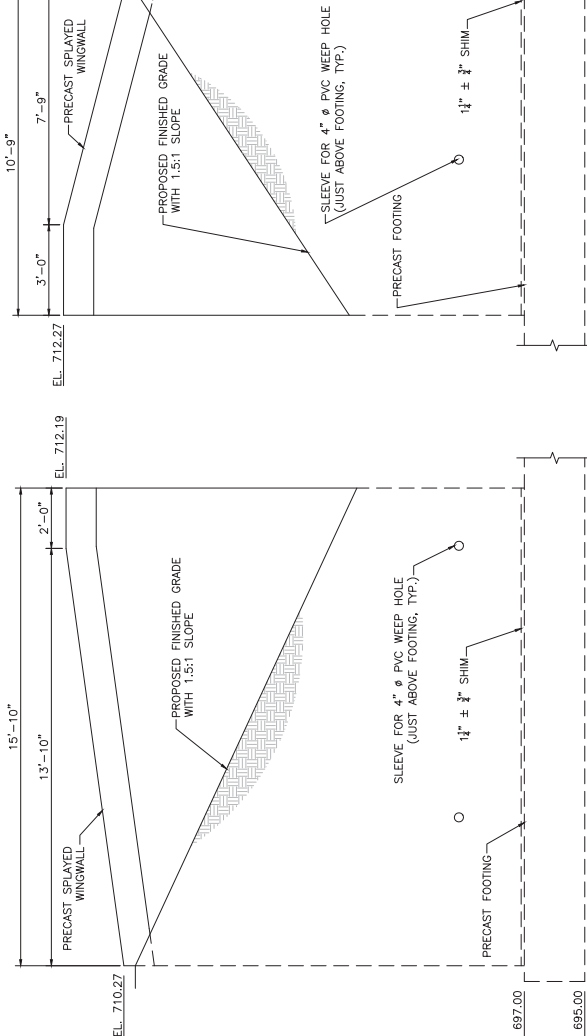
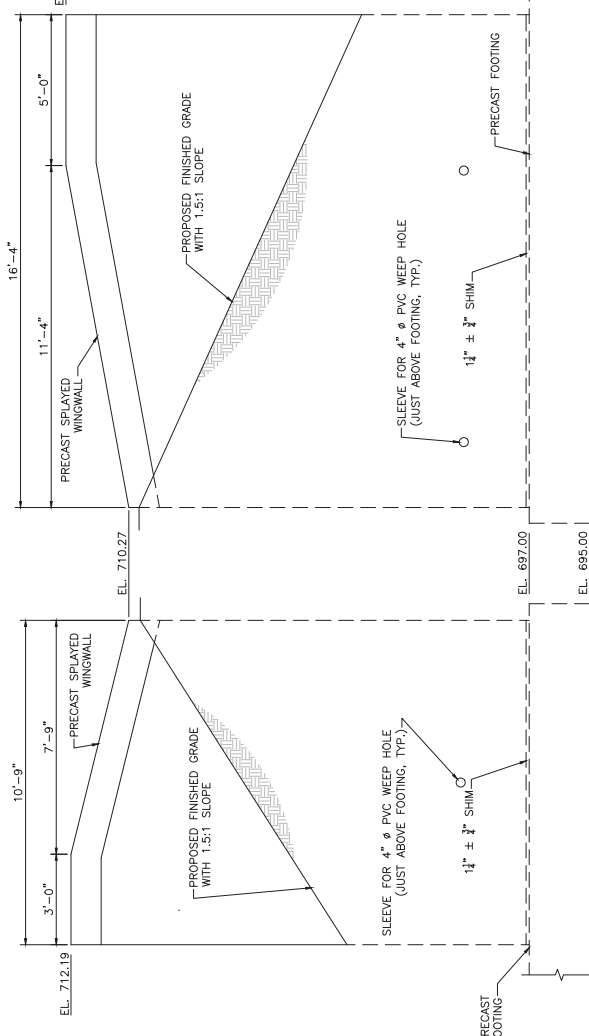
**EAST ELEVATION**  
SCALE: 1/8" = 1'-0"

ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:		
STATE BRIDGE ENGINEER		
USE ONLY PRINTS OF LATEST DATE		

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**  
**PRECAST WINGWALL ELEVATIONS**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#8888	8	14
PROJECT FILE NO.	609179		

- NOTES:**
- LOWER WATER LEVEL AS MUCH AS POSSIBLE WITHOUT EXCEEDING 1.5' CHAMFER (TYP.) AND THEN TIGHTEN THE CRUSHED STONE IN PLACE (SEE STANDARD SPECIFICATIONS)
  - STANDARD PRECAST ELEMENT WITH NON-SHRINK GROUT WITH THICKNESS MORE THAN SHIM STACK.
  - 4" PVC WEEP HOLES 10'-0" O.C. MAX. PROVIDE 1" PVC WEEP HOLES AT EACH END OF PRECAST ELEMENT.
  - OVER EXCAVATION OF SUBGRADE IS REQUIRED WHEN THERE ARE CLAY SOILS LOCATED AT THE BOTTOM OF THE EXCAVATION.
  - THE FACTORED BEARING PRESSURE = 4.3 KSF AS PER ASHTO LRFD BRIDGE SPECIFICATIONS STRENGTH I LOAD COMBINATION. FACTORED BEARING RESISTANCE = 12.6 KSF. FACTORED BEARING RESISTANCE IS THE MINIMUM OF THE FACTORED BEARING RESISTANCE AND A RESISTANCE FACTOR OF 0.45.
  - IF BEDROCK IS ENCOUNTERED CLOSER THAN 4'-0" TO FINISHED GRADE, ELIMINATE CRUSHED STONE LAYER AND GEOTEXTILE FABRIC.



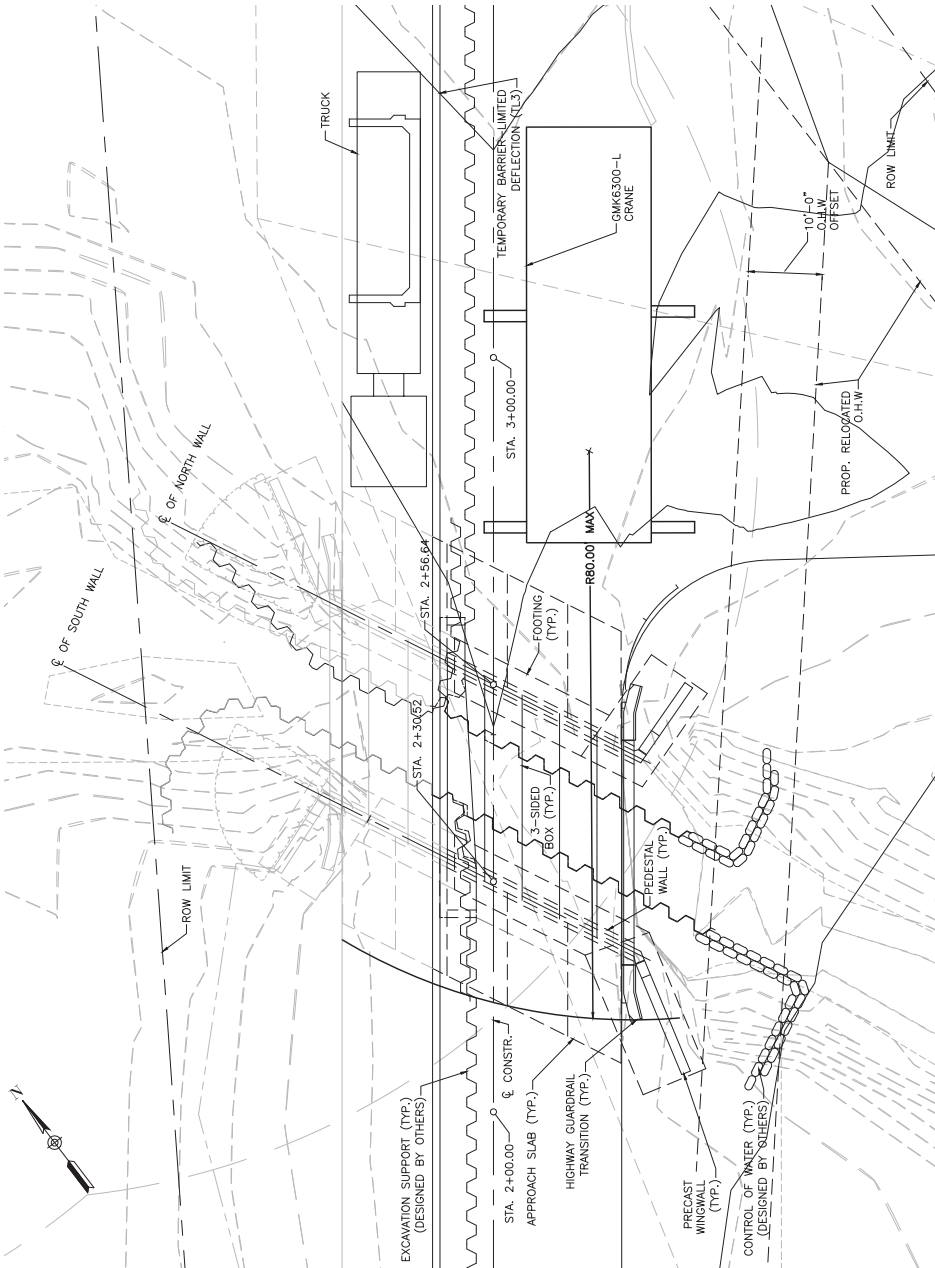
ISSUED FOR CONSTRUCTION	DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:		STATE BRIDGE ENGINEER
		USE ONLY PRINTS OF LATEST DATE



**SPENCER**  
**ST 31 NORTH SPENCER ROAD**

STATE	REG. APPROVAL NO.	SHEET NO.	TOTAL SHEETS
MA	#/8884	10	14
PROJECT FILE NO. 609179			

**STAGE II SUGGESTED ERECTION PROCEDURE**



**SUGGESTED STAGE II ERECTION PROCEDURE**  
 SCALE: 1/4"=1'-0"

**NOTE:**  
 CRANE IS A GROVE GNM6300L-1 WITH 203,900 LBS OF COUNTER-WEIGHT.  
 THE CRITICAL LIFT IS SOUTH FOOTING UNIT 4 WITH A REACH OF 80.00 FEET AND FACTORED WEIGHT OF 55,000 LBS.  
 THE CRANE CAPACITY WITH A REACH OF 80.00 FEET IS 68,000 LBS. WITH A REACH OF 80.00 FEET.

**STAGE II SUGGESTED LIFTING PROCEDURE:**

1. TRAFFIC WILL BE TEMPORARILY STOPPED IN THE SOUTHBOUND LANE.
2. TRAFFIC WILL NOT BE STOPPED DURING PEAK HOURS OR WITHOUT PRE-APPROVAL OF THE ENGINEER.
3. THE CRANE WILL STOP IN THE SOUTHBOUND LANE WITH THE PRECAST ELEMENT.
4. THE SOUTHBOUND LANE WILL BE RE-OPENED TO TRAFFIC.
5. REPEAT STEPS 1 & 2 FOR ALL REMAINING PRECAST ELEMENTS.
6. PRECAST ELEMENT TO BE INSTALLED IN STAGE II:

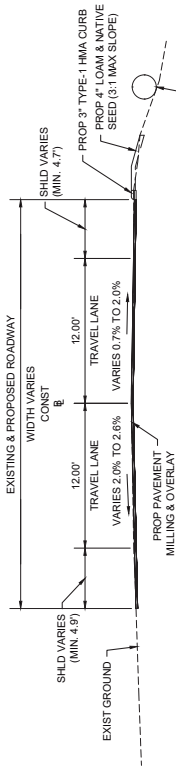
- A. SOUTH FOOTING UNITS 1 & 2
- B. SOUTH FOOTING UNITS 3 & 4
- C. NORTH FOOTING UNITS 1 & 2
- D. NORTH FOOTING UNITS 3 & 4
- E. 3-SIDED BOX UNITS 1 & 2
- F. 3-SIDED BOX UNITS 3 & 4
- G. NORTHWEST HIGHWAY GUARDRAIL TRANSITION
- H. NORTHEAST HIGHWAY GUARDRAIL TRANSITION
- I. NORTHWEST HIGHWAY GUARDRAIL TRANSITION
- J. SOUTH APPROACH SLAB UNITS 3-5
- K. NORTH APPROACH SLAB UNITS 3-5

MA. DA. YYY	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
THIS SHEET IS APPROVED FOR CONSTRUCTION BY MASSDOT AUTHORIZED SIGNATORY:	
STATE BRIDGE ENGINEER	
USE ONLY PRINTS OF LATEST DATE	

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

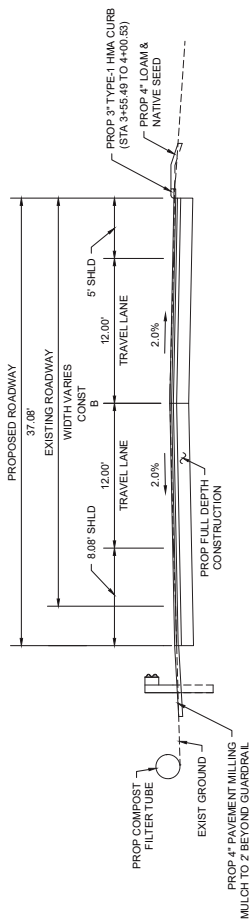
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		11	14
PROJECT FILE NO.	609179		

**TYPICAL SECTIONS - N SPENCER RD**



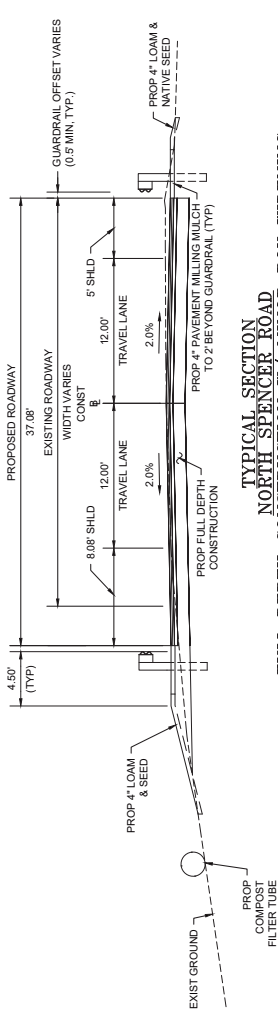
**TYPICAL SECTION**  
**NORTH SPENCER ROAD**  
**PAVEMENT MILLING AND OVERLAY**

Sta. 4+00.00 TO 4+25.53



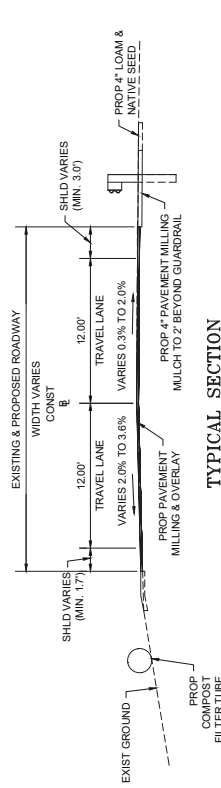
**TYPICAL SECTION**  
**NORTH SPENCER ROAD**  
**FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

Sta. 4+25.53 TO 4+40.00  
Sta. 4+40.00 TO 4+47.00  
Sta. 4+47.00 TO 4+50.00



**TYPICAL SECTION**  
**NORTH SPENCER ROAD**  
**FULL DEPTH CONSTRUCTION W/ MINOR BOX WIDENING**

Sta. 1+47.00 TO 1+50.00  
Sta. 1+50.00 TO 1+53.00  
Sta. 1+53.00 TO 1+57.00



**TYPICAL SECTION**  
**NORTH SPENCER ROAD**  
**PAVEMENT MILLING AND OVERLAY**

Sta. 1+57.00 TO 1+47.00

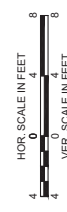
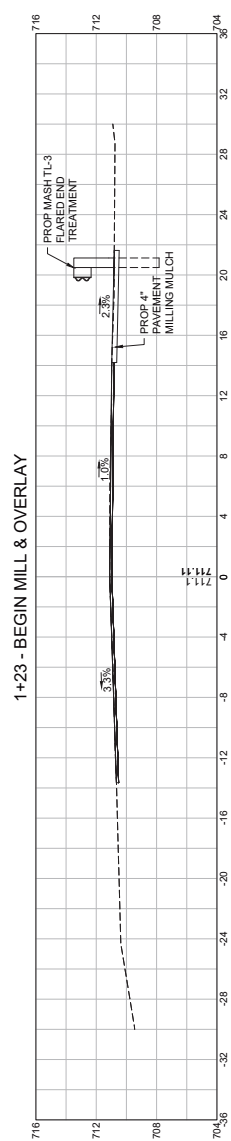
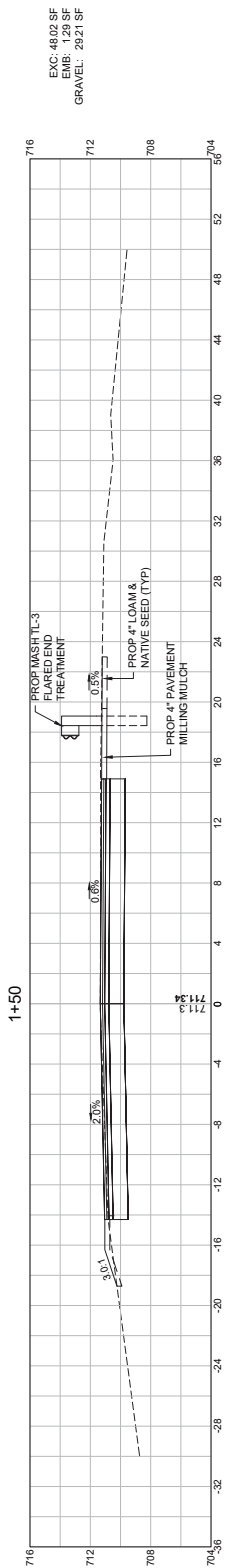
**PAVEMENT NOTES**

- PROPOSED FULL DEPTH PAVEMENT SURFACE:** 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER INTERMEDIATE; 2.0" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SC-12.5) OVER BASE; 4.0" SUPERPAVE BASE COURSE - 37.5 (SSC-37.5) OVER SUBBASE; 12" GRAVEL BORROW, TYPE B
- PROPOSED PAVEMENT MILLING & OVERLAY SURFACE:** 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/USY OVER EXISTING PAVEMENT
- ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/USY OVER EXISTING PAVEMENT
- FINE MILL VARIABLE DEPTH (0-2.5') TO MEET PROPOSED GRADING
- PROPOSED IMA BRIDGE WEARING COURSE (AS PER BRIDGE ENGINEER APPROVAL) SURFACE:** 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER PROTECTIVE; VARIES 1.5"-8.5" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B-9.5-P) OVER MEMBRANE WATERPROOFING FOR BRIDGE DECKS
- NOTE:**
- ASPHALT EMULSION FOR TACK COAT AT 0.07 TO 0.09 GAL/USY OVER MILLED SURFACE. ASPHALT EMULSION FOR TACK COAT AT 0.06 TO 0.08 GAL/USY OVER INTERMEDIATE AND BASE COURSE. TACK SHALL BE RS-1H.
  - PLACE SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B-9.5-P) IN LIFTS NOT TO EXCEED 1.875".

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#/###/###	12	14
PROJECT FILE NO.		609179	

**CROSS SECTIONS ST 31**

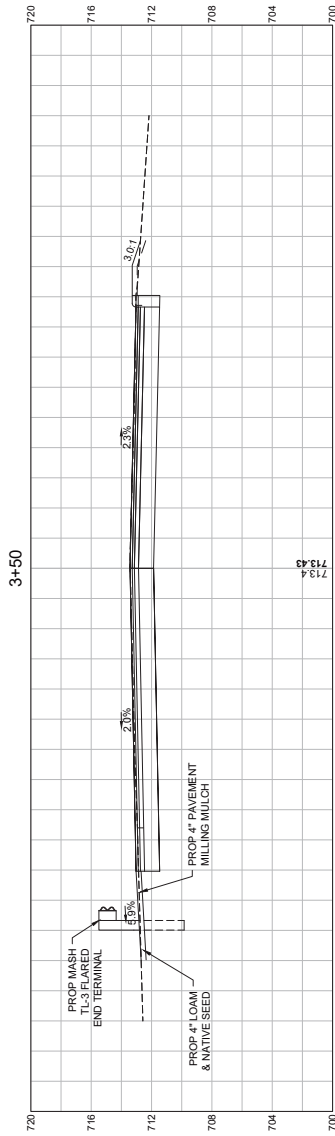




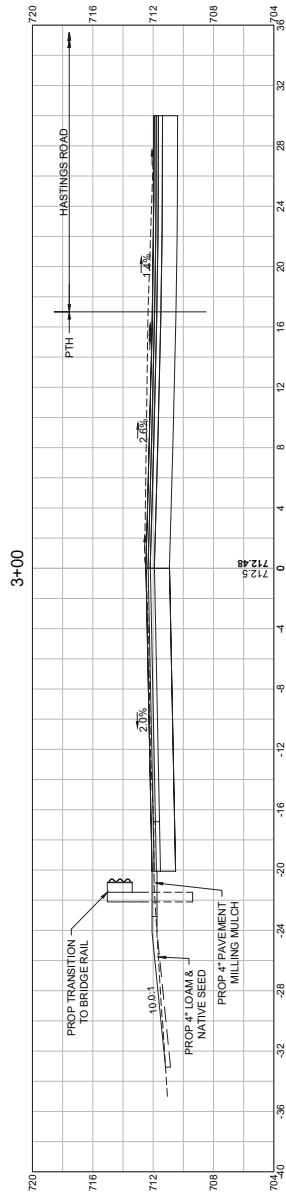
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**  
**CROSS SECTIONS ST 31 (2)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#/MA	13	14
PROJECT FILE NO.		609179	

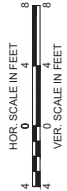
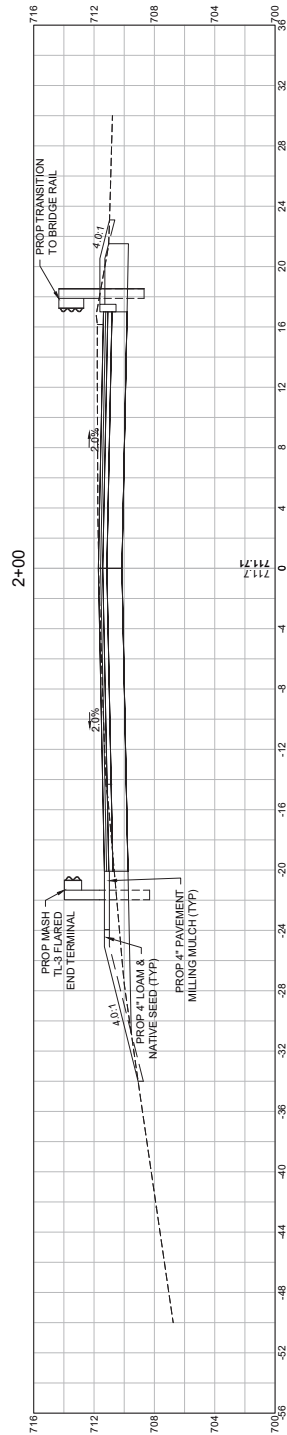
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 EMB: 1.55 SF  
 GRAVEL: 38.49 SF



EXC: 61.60 SF  
 EMB: 2.20 SF  
 GRAVEL: 37.07 SF



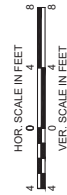
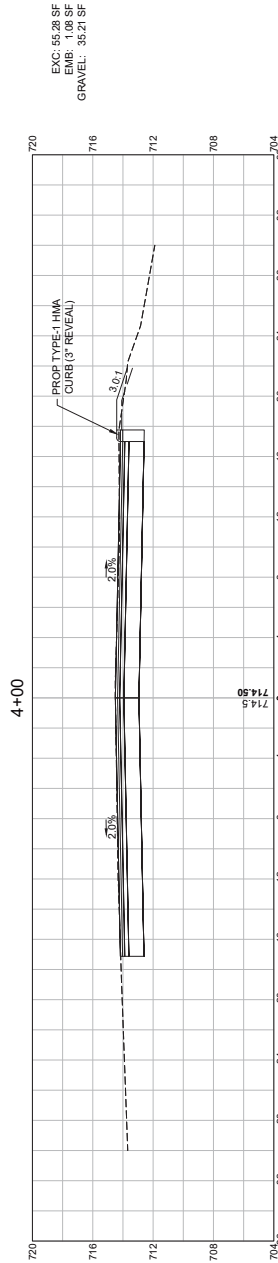
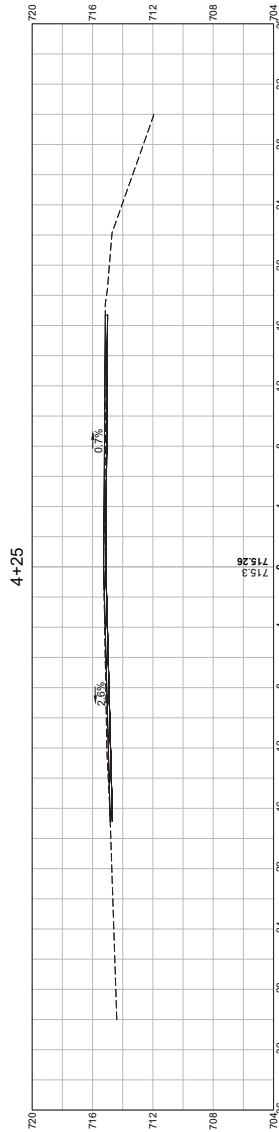
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 GRAVEL: 53.62 SF



**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	#/###/###	14	14
PROJECT FILE NO. 609179			

**CROSS SECTIONS ST 31**



**ITEM 751.765**

**COMPOST AND SEED OVER MODIFIED ROCK**

**CUBIC YARD**

*REV. 2024.01.01 (REV. DATE TO BE REMOVED BY CONTRACTS).*

**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:

<b>765.451 Part Shade Roadside Mix</b>			<u>% PLS by</u>
	<u>Botanical Name</u>	<u>Common Name</u>	<u>Weight</u>
Grass	Festuca rubra	Creeping Red Fescue	25.70%
	Elymus virginicus	Virginia Wild Rye	24.00%
	Schizachyrium scoparium	Little Blue Stem	22.50%
	Panicum virgatum	Switch Grass	10.00%
	Panicum clandestinum 'Tioga'	Deer Tongue 'Tioga'	7.00%
	Carex vulpinoidea	Fox Sedge	2.00%
	Agrostis perennans	Upland Bentgrass	2.00%
	Juncus effusus	Soft Rush	0.20%
			<hr/> 93.40%
Herb/Forb	Chamaecrista fasciculata	Partridge Pea	3.00%
	Penstemon digitalis	Beard-tongue	1.00%
	Zizia aurea	Golden Alexanders	0.30%
	Desmodium canadense	Showy Tick Trefoil	0.30%
	Solidago bicolor	White Goldenrod	0.20%
	Solidago caesia	Woodland Goldenrod	0.20%
	Rudbeckia hirta-VT ecotype	Black-eyed Susan-VT ecotype	0.20%
	Aster novae-angliae	New England Aster	0.20%
	Solidago odora	Licorice Scented Goldenrod	0.20%
	Aster divaricatus	White Wood Aster	0.20%
	Heliopsis helianthoides	Ox-Eye Sunflower	0.20%
	Pycnanthemum tenuifolium	Slender Mountain Mint	0.20%
	Monarda fistulosa	Wild Bergamot	0.10%
	Eupatorium perfoliatum	Boneset	0.10%
	Aster lateriflorus	Calico Aster	0.10%
	Oenothera fruticosa var. fruticosa	Sundrops	0.10%
			<hr/> 6.60%
			<hr/> <b>100.00%</b>
	<b><i>Seeding Rate: 15.0 lbs PLS/Acre</i></b>		

## **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.

Spec 751.765\_CompostSeedOverModRock\_2024-01-01.docx

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.

Native Seed Mix shall be compensated at the bid price per the specified seed mix item by pound.

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

DOCUMENT A00841

**MASSACHUSETTS**  
**Department of Environmental Protection**

**Water Quality Certificate**

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# Department of Environmental Protection

100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

Maura T. Healey  
Governor

Kimberley Driscoll  
Lieutenant Governor

Rebecca L. Tepper  
Secretary

Bonnie Heiple  
Commissioner

March 11, 2024

Massachusetts Department of Transportation  
Highway Division  
10 Park Plaza, Suite 6340  
Boston, MA 02116  
ATTN: Courtney Walker

RE: Section 401 Water Quality Certification  
BRP WW 11, Minor Fill Project  
North Spencer Road (Route 31) Over the Sevenmile River  
Spencer, MA

401 WQC Filing Number: 23-WW11-0020-APP  
USACE Application No. NAE-2023-02553

Dear Ms. Walker:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed your application for a Water Quality Certification (WQC), as referenced above; this application was deemed complete on February 9, 2024. 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 project proposes to replace the bridge superstructure within the Town of Spencer, adjacent to the intersection of North Spencer Road and Hastings Road (Bridge #S-23-012) over the Sevenmile River. Replacement of the structure is necessary due to the existing structure's severely deteriorated condition. In addition to this, the project also proposes to reconstruct the roadway on both sides of the bridge on North Spencer Road and a portion of Hastings Road. The project includes dewatering sections within the river to access portions of the bridge.

The existing bridge was originally built in 1938 and has a single-span steel beam superstructure with a reinforced concrete bridge deck covered with an asphalt wearing coarse. The existing substructure consists of two concrete gravity abutments connected to concrete gravity wingwalls. The existing structure has a 34-foot width and an approximate 17-foot clear span. The approach roadway is approximately 23- to 24-foot wide with a shoulder width ranging from 2 to 3 feet on the south side and

up to 5 feet on the north side. There are no sidewalks or stormwater infrastructure within the project vicinity.

Sevenmile River is a perennial stream designated as a Coldwater Fishery and is tributary to the Chicopee River Basin. The river flows from west to east through an impoundment owned by the Cisterian Abbey of Spencer and continues under Route 31. The channel has a bankfull width of approximately 17 feet. Portions of the project will take place within Federal Emergency Management Agency (FEMA) Zone A as shown in the Flood Insurance Map (FIRM) community panel #25027C0567E.

The proposed bridge replacement will consist of a precast concrete three-sided box culvert supported by concrete pedestal walls on concrete footings with approach slabs. The proposed structure will have a similar location and alignment as the existing structure and will be widened from 34 feet to 37 feet, 1 inch. The proposed abutments will be set back from the existing channel to provide a clear span of 22 feet, 4 inches. The construction sequence will occur in two phases to maintain a single lane of traffic along North Spencer Road.

Approximately 1,043 square feet of temporary Land Under Water (LUW) impacts will occur between the water control measures and the existing abutments for dewatering and to construct the proposed bridge, wingwalls and wingwall revetment. There will be permanent LUW impacts from the construction of the rip rap revetment in the amount of 374 square feet, which will be mitigated by the creation of 310 square feet of new Land Under Water which results from the increase in the span width of the superstructure. The newly formed LUW will have a 3-foot layer of rip rap armoring and the rip rap below the Ordinary High-Water line will be overlaid with a 12-inch layer of existing streambed material, with a 1.5:1 slope.

Bridge demolition and reconstruction will occur in a two-stage process to allow and maintain a single lane of traffic along North Spencer Road during construction. Construction is anticipated to occur in dry conditions with the use of sheet piles, cofferdams, and dewatering equipment.

As the project is considered redevelopment in accordance with the stormwater provisions of 314 CMR 9.06(a)7., stormwater standards will be met to the maximum extent practicable (MEP). The project site currently has no drainage infrastructure and proposes a minor increase in impervious area totaling 1,060 square feet (0.14% increase) and will maintain similar drainage patterns as the predeveloped conditions. The project proposes to create four vegetated filter strips within the project area by placing 4-inches of loam and seeding along a 25-foot-long strips. Water quality swales were investigated for consideration but were deemed unsuitable to avoid cutting down the tree canopy and additional vegetation that provides a thermal buffer and shading to the Sevenmile River, which is designated as a Coldwater Fishery.

The proposed three-sided box culvert will increase the span length by approximately 5 feet, providing a 22 foot, 4-inch clear span. The structure will be embedded into the stream to an approximate depth of 6 feet, exceeding the minimum of 2 feet. In addition to maintaining existing water depths and velocities, the project will also exceed the openness requirements with an openness ratio of 4.29 feet with a vertical span 6-feet high. A wildlife bench will be constructed adjacent to the south abutment, maximizing dry passage for wildlife along the southern abutment. The proposed project will meet each of the Stream Crossing Standards.

The Project occurs within Natural Heritage and Endangered Species Program (NHESP) Priority Habitat and Estimated Habitat of Rare Wildlife for the freshwater creeper mussel (*Strophitus undulatus*). In a letter dated May 5, 2023, NHESP concluded that the Project will not result in a prohibited Take of state-listed rare species, subject to the mussel protection measures (mussel sweep/translocation plan) as described in the filing. Therefore, as conditioned, the Project complies with 314 CMR 9.06(2).

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 Spencer New Leader on November 24, 2023, and in the MEPA Monitor on November 22, 2023. 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.

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:
  - Application for Water Quality Certification. Prepared by Bayside Engineering on behalf of MassDOT, dated November 6, 2023, with cover letter and attachments, 401 WQC Filing Number: 23-WW11-0020-APP.
  - Undated Plans entitled: "Spencer, ST 31 (North Spencer Road)". Sheets 3, 5, 6, 16, 17, 20, 21, 29, 31, 40-44. Prepared by Bayside Engineering. Initial undated plan set was received on November 6, 2023, and the revised plans were subsequently received on January 9, 2024 and February 9, 2024.

- MassDEP Technical Review. 401 Water Quality Certification, Minor Fill Project Certification. Dated December 5, 2023 and a Supplemental Technical Review dated January 24, 2024.
- MassDOT Responses to MassDEP Technical Review. Prepared by Bayside Engineering on behalf of MassDOT. 401 Water Quality Certification, Minor Fill Project Certification. Dated January 9, 2024 and on February 9, 2024.

### **Pre-Construction**

2. As proposed and specified in the application and in Item 983.35 and 983.36, a qualified **Fluvial Geomorphologist** (FGM) with a minimum of five years of relevant professional experience in stream replacement and restoration projects shall be employed to oversee all LUW replacement and restoration activities. The name, contact information, and qualifications of the FGM shall be provided to MassDEP for approval with a copy to the Spencer Conservation Commission prior to the Pre-Construction Meeting. **(Submittal)**
3. Prior to the Pre-Construction Meeting, 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)**
4. A minimum of 21 days prior to the start of work, 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, the FGM, a representative from the MassDOT Environmental Section and/or the District Environmental Engineer shall attend the Pre-Construction Meeting.
5. MassDEP shall be copied on applicable submittals to the U.S. Army Corps of Engineers (Corps). 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)**
6. 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. If the EPA CGP applies, the SWPPP may serve as the CP/PP, providing it includes the measures required to be in the CP/PP per these Special Conditions, in addition to the measures specifically required by the CGP. Any subsequent changes to the Final CP/PP (defined herein as including the construction period SWPPP) must be approved by MassDEP. **(Submittal)**
7. Training regarding erosion and sedimentation controls is required. The RE, CP/PP Inspector, and any other relevant personnel responsible for erosion and sedimentation controls shall complete the EPA Construction General Permit Inspector Training, or other training that meets the CGP requirements, as well as complete a comprehensive review of the Final CP/PP. Verification of proof of completion training of the shall be submitted to MassDEP prior to the start of work.

8. The CP/PP shall identify, but shall not be limited to, staging and laydown areas in relation to LUW, proposed dewatering 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.
9. A minimum of 21 days prior to the start of work, MassDOT shall submit a Water Management Plan for review and approval. The Plan shall include proposed methods to manage construction-period water including but not limited to dewatering methods and locations, specifications for any water bypass systems, and dredge and debris material dewatering prior to shipment off site, as applicable. The plan shall meet requirements of the CP/PP and be specific to the Project. Dewatering and water bypasses shall be conducted under the supervision of the RE and comply with the applicable conditions identified herein. **(Submittal)**
10. 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.
11. Prior to the Pre-Construction Meeting, the boundaries of 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.
12. A Flood Contingency Plan shall be submitted to MassDEP for review and approval that addresses areas that fall within the 1% annual chance of flooding zone within project limits. The Plan shall address the potential need for temporary relocation of construction and auxiliary equipment during flood events to designated upland locations above the Base Flood Elevation. The Plan shall be approved by MassDEP prior to any work within the 1% annual chance of flooding zone, including mobilization or storage of equipment and materials. **(Submittal)**
13. A minimum of 21 days prior to the start of 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 assure that demo material is properly contained and does not enter Sevenmile River. **(Submittal)**

#### **Construction Period**

14. No more than **374 sf** of permanent and **1,043 sf** of temporary impacts to LUW shall occur. No more than **94 cy** of dredging in LUW shall occur. All work shall avoid unapproved impacts to BVW and LUW.
15. Mowing of the Vegetated Filter Strips shall be limited to no more than twice per year. Erosion controls shall be used to stabilize the vegetated filter strips prior to the establishment of vegetation.

16. A floating silt fence shall be kept on site and ready to deploy when construction work is likely to discharge sediment into the waterway. The floating silt fence shall not be allowed to block more than 50 percent of the channel width. The floating silt fence shall be installed to contain any sediment discharges from work areas and shall be cleaned as recommended by the floating silt fence manufacturer. The floating silt fence shall be removed from the waterway when construction work allows and removed from the site when no longer needed.
17. 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.
18. Copies of CP/PP Inspection and Maintenance Log Forms shall be submitted to MassDEP within 14 days upon request.
19. Inspection and maintenance of erosion and sediment controls in active work areas shall be the responsibility of both the Contractor and RE. The project team shall include an individual with at least three-years' experience with construction period erosion and sedimentation control. The RE shall be ultimately responsible for inspection and maintenance of site controls. The RE and/or contractor shall immediately notify MassDEP and the Spencer Conservation Commissions if any unauthorized discharges to LUW occur.
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 stabilization has been initiated.
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 Spencer Conservation Commission within 24 hours prior to the commencement of dewatering. Dewatering methods and location(s) shall be approved by the RE prior to use, and shall be documented in the CP/PP. There shall be no discharge of untreated dewatered stormwater or groundwater to 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 RE 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 RE 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 12.
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. Stockpiles shall be located no less than 50 feet from LUW, catch basins, or other drainage conveyances that discharge to LUW. The CP/PP shall specify measures to implement this. Filter fabric stretched under storm drain inlet grates are not acceptable for this purpose.

25. 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 LUW, catch basins or other drainage conveyances that discharge directly or indirectly to LUW.
26. Refueling, washing, and cleaning of vehicles and other construction equipment shall not take place within 50 feet of LUW and any wash water shall be contained such that it does not drain toward LUW. MassDEP shall explicitly approve in writing any deviation to this condition for oversized stationary vehicles.
27. The contractor shall have spill containment kits on site. In the event of a release of fuels and/or oils, the local fire department and MassDEP shall be notified.
28. Sheeting outside of the footprint of the bridge shall be removed rather than cut off to the extent possible.
29. A temporary shielding 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 that any debris accidentally enters the Sevenmile 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**

30. The FGM shall oversee all LUW restoration in accordance with plans and specifications approved herein. Placement of streambed materials shall take place in no- or low-flow conditions. The Water Management Plan required in Condition 9 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.
31. Streambed materials must be approved by the Resident Engineer and FGM prior to use.
32. A report shall be submitted by the FGM following completion of the LUW restoration, which shall include representative photos and a summary of the restoration activities and results.  
**(Submittal)**
33. 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.

#### **Post-Construction**

34. All temporary erosion controls shall be removed at the conclusion of work once the surrounding area has achieved final stabilization.

#### **General Conditions**

35. Any proposed alterations, minor 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](mailto:heidi.davis@mass.gov) and [ryan.morrison@mass.gov](mailto:ryan.morrison@mass.gov). **(Submittal)**
36. This WQC remains in effect for the same duration as the Section 404 permit that requires it.
37. No Special Condition set forth herein shall be construed or operate to prohibit MassDEP from taking enforcement against the MassDOT or its contractors for any failure to comply with the terms and requirements of this WQC.
38. 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; 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  
Commissioner's Office  
100 Cambridge Street, Suite 900  
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):

3. the 401 Certification Transmittal Number;
4. the complete name of the applicant and address of the project;
5. 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;
6. 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;
7. a clear and concise statement that an adjudicatory hearing is being requested;
8. 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
9. 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

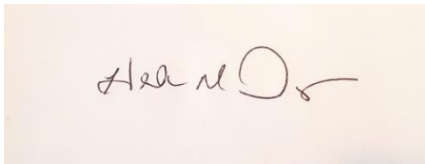
The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

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 Ryan Hale at [Heidi.davis@mass.gov](mailto:Heidi.davis@mass.gov) and [ryan.morrison@mass.gov](mailto:ryan.morrison@mass.gov)

Very truly yours,

A rectangular box containing a handwritten signature in black ink. The signature appears to read "Heidi M. Davis" with a stylized flourish at the end.

Heidi M. Davis  
Highway Unit Supervisor

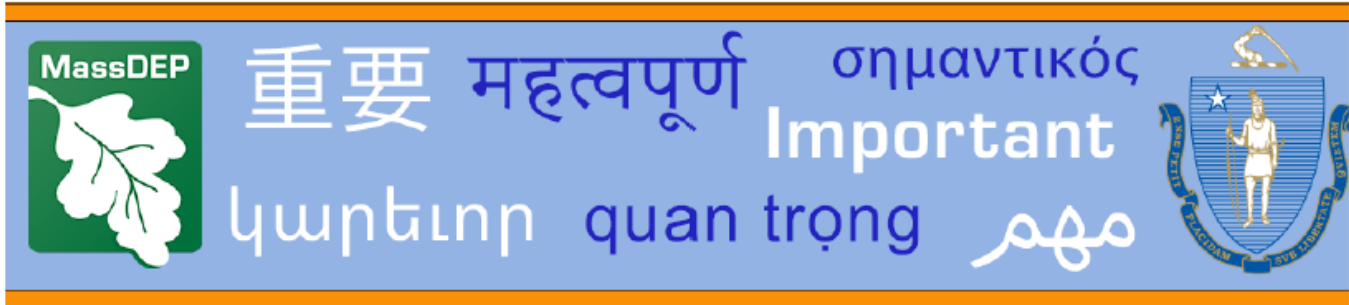
Ecc: DEP CERO – Judy Schmitz  
MassDOT – Melissa Lenker  
MassDOT – Kylie Abouzeid  
USACE – Dan Vasconcelos  
MassDOT D3 Environmental Engineer – [Tracey Coppellotti](#)  
[MassDOT D3- Adele Brochu](#)  
Bayside Engineering – Christopher Sokolowski - [csokolowski@baysideengineering.com](mailto:csokolowski@baysideengineering.com)  
Spencer Conservation Commission – Lauren Vivier – [lvivier@spencerma.gov](mailto:lvivier@spencerma.gov)

**ATTACHMENT A**  
**Bridge Replacement on North Spencer Road (Route 31) Over Sevenmile River**  
**Spencer, MA**

**PRE-CONSTRUCTION SUBMITTAL CHECKLIST**

**THIS CHECKLIST MUST BE COMPLETED PRIOR TO THE START OF WORK; NOTE THAT SOME CONDI-  
 TIONS REQUIRE THAT INFORMATION BE SUBMITTED A SPECIFIC NUMBER OF DAYS PRIOR TO THE  
 START OF WORK OR THE PRE-CONSTRUCTION MEETING.**

<b>Condition</b>	<b>Required Submittal</b>	<b>Due Date</b>	<b>Date Submitted</b>	<b>Date Approved</b>
<b>PRE-CONSTRUCTION SUBMITTAL REQUIREMENTS</b>				
2	Name, contact information, and qualifications of the FGM, including specific experience and years to meet requirement	Prior to Pre-Construction Meeting		
3	Name and contact information of the RE	Prior to Pre-Construction Meeting		
5	Corps Work-Start Notification Form	14 days prior to work start		
6	CP/PP	14 days prior to work start		
9	Water Management Plan	21 days prior to work start		
12	Flood Contingency Plan	Prior to any work within 1% annual chance of flooding zone		
13	Demolition Plan	21 days prior to work start		
<b>ACTIVE/POST-CONSTRUCTION SUBMITTAL REQUIREMENTS</b>				
32	LUW Restoration Report	Post-Construction of LUW		
35	Proposed alterations, minor plan changers or amendments	N/A		



### 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 Anviwònmanal 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  
ហើយគួរត្រូវបានបកប្រែភ្លាមៗ។  
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ  
សូមទាក់ទងនាយកផ្នែកយុត្តិធម៌បរិស្ថានរបស់  
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយនាមខាងក្រោម។

#### **Kriolu Kabuverdianu Cape Verdean**

Es dokumentu sta important i tenki ser tradusidu imediatamenti. Se nho ta presisa ke es dokumentu sta tradisidu, por favor kontata O Diretor di Justisia di Environman di DEP ku es numero di telefoni menxionadu di baixo.

**Contact Deneen Simpson 857-406-0738**  
**Massachusetts Department of Environmental Protection**  
**100 Cambridge Street 9<sup>th</sup> Floor Boston, MA 02114**  
TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>  
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

## 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.

## հայերէն Armenian

Այս փաստաթուղթը կարևոր է, և պետք է անհապաղ թարգմանել այն:

Եթե Ձեզ անհրաժեշտ է թարգմանել այս փաստաթուղթը, դիմեք Մասսաչուսեթսի 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।

Contact Deneen Simpson 857-406-0738

Massachusetts Department of Environmental Protection  
100 Cambridge Street 9<sup>th</sup> Floor Boston, MA 02114

TTY# MassRelay Service 1-800-439-2370 • <https://www.mass.gov/environmental-justice>  
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

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DOCUMENT A00870

**UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICES  
CONSISTENCY LETTER (NLEB)**

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## 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:

June 28, 2023

Project code: 2023-0099162

Project Name: 609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD OVER THE SEVEN MILE RIVER

Subject: Consistency letter for the '609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD OVER THE SEVEN MILE 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 June 28, 2023 to verify that the **609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD OVER THE SEVEN MILE RIVER** (Proposed Action) may rely on 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 will have no effect on the endangered Indiana bat (*Myotis sodalis*) or the endangered northern long-eared bat (*Myotis septentrionalis*). If the Proposed Action is not modified, **no consultation is required for these two species**. 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 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 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 advise the lead Federal action agency accordingly.

The following species may occur in your project area and **are not** covered by this determination:

- Monarch Butterfly *Danaus plexippus* Candidate

## **PROJECT DESCRIPTION**

The following project name and description was collected in IPaC as part of the endangered species review process.

### **NAME**

609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD  
OVER THE SEVEN MILE RIVER

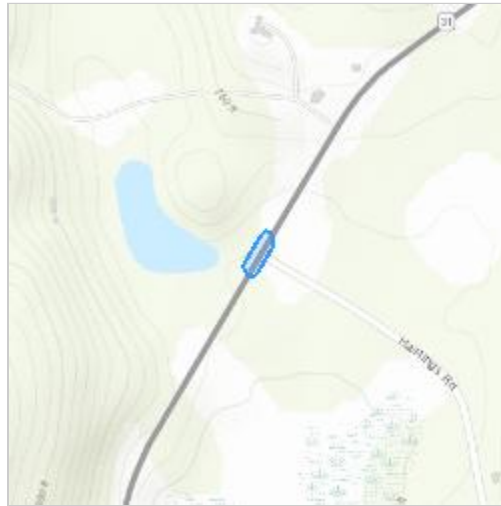
### **DESCRIPTION**

609179 - SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD  
(ROUTE 31) OVER THE SEVEN MILE RIVER

The proposed bridge project consists of replacing the existing bridge structure with a new single span bridge overpass structure. There will be no pedestrian accommodation improvements, however the useable shoulder will be increased making it safer for bicyclists to cross the bridge.

Monarch Butterfly: Candidate Species only, no conservation measures at this time.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@42.29185435,-72.00044385,14z>



## DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the endangered northern long-eared bat.

Therefore, no 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 for these two species.

## QUALIFICATION INTERVIEW

1. Is the project within the range of the Indiana bat<sup>[1]</sup>?

[1] See [Indiana bat species profile](#)

**Automatically answered**

*No*

2. Is the project within the range of the northern long-eared bat<sup>[1]</sup>?

[1] See [northern long-eared bat species profile](#)

**Automatically answered**

*Yes*

3. [Semantic] Does your proposed action intersect an area where Indiana bats and northern long-eared bats are not likely to occur?

**Automatically answered**

*Yes*

## **DETERMINATION KEY DESCRIPTION: FHWA, FRA, FTA PROGRAMMATIC CONSULTATION FOR TRANSPORTATION PROJECTS AFFECTING NLEB OR INDIANA BAT**

This key was last updated in IPaC on June 14, 2023. 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

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DOCUMENT A00871

**NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM  
OF THE MASSACHUSETTS DIVISION OF FISHERIES & WILDLIFE**

**MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)**

**PROJECT REVIEW CHECKLIST**

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# MESA REVIEW CHECKLIST FOR MASSDOT- HIGHWAY DIVISION PROJECTS

Massachusetts Endangered Species Act M.G.L. c. 131A and Regulations (321 CMR 10.00)

**Massachusetts Division of Fisheries & Wildlife**  
**Natural Heritage & Endangered Species Program**

For additional information or to schedule a pre-filing consultation, contact David Paulson, Environmental Review Biologist, at: *timothy.mcguire2@mass.gov; (508) 389-6366*

## ~~~~ CONTACT INFORMATION ~~~~

If you already completed your Notice of Intent- Form 3, you can send page 1 of the NOI in place of questions 1 through 3 in this section

1. Project Location:

North Spencer Road (Route 31) over the Seven Mile River	Spencer	01562
Street Address/Location	City/Town	Zip Code
Assessors Map/Plat Number	Parcel /Lot Number	

2. MassDOT contact:

David	Paulson	MassDOT Highway Division
First Name	Last Name	Company
10 Park Plaza, Room 7360		
Mailing Address		
Boston	MA	02116
City/Town	State	Zip Code
(857) 262-3378	(857) 368-0609	david.j.paulson@dot.state.ma.us
Phone Number	Fax Number	Email address

3. Engineer or other Representative:

MassDOT		
Company		
Julia	Hoogeboom	
Contact Person First Name	Contact Person Last Name	
10 Park Plaza		
Mailing Address		
Boston	MA	02116
City/Town	State	Zip Code
857-445-2880	(857) 368-0609	julia.a.hoogeboom@dot.state.ma.us
Phone Number	Fax Number	Email address

## ~~~~ ADDITIONAL INFORMATION ~~~~

- Will this project meet any threshold for a MA Environmental Policy Act (MEPA) filing (excluding rare species, 301 CMR 11.03 (2))?  
 No  Yes- ENF
- Has this project been issued a NHESP Tracking Number? If Yes, Tracking No.: \_\_\_\_\_  
 No  Yes

## ~~~~ PROJECT DESCRIPTION (Please attach separate description) ~~~~

Please note: certain projects or activities are exempt from review (see 321 CMR 10.14). The MESA does not allow project segmentation. Your filing must reflect all anticipated work associated with the proposed project (CMR 321 10.16).

The NHESP will notify the applicant within 14 days if the materials submitted do not satisfy requirements for a filing and request submission of any missing materials (321 CMR 10.18(1)).

~~~~INCLUDE THE FOLLOWING INFORMATION~~~~

|                                                      |                                         |                  |                                         |
|------------------------------------------------------|-----------------------------------------|------------------|-----------------------------------------|
| <b>Proposed project will alter*:</b>                 |                                         |                  | <b>Project increases</b>                |
| <input checked="" type="checkbox"/> Land Under Water | Extent of: temporary impact (sq. feet): | <u>1,575± sf</u> | permanent impact: <u>LUW by 250± sf</u> |
| <input type="checkbox"/> Bordering Vegetated Wetland | Extent of: temporary impact (sq. feet): | <u>0</u>         | permanent impact: <u>0</u>              |
| <input type="checkbox"/> Isolated Vegetated Wetland  | Extent of: temporary impact (sq. feet): | <u>0</u>         | permanent impact: <u>0</u>              |

- Proposed project will:**
- Extend the amount of riprap at the site
  - Include in-water work

If yes, approximate extension(feet): \_\_\_\_\_  
 If yes, optimal date and duration of work: \_\_\_\_\_

Mussel Relocation: August through September 2024  
 In-water construction: April 2025 -September 2025

- Require wetlands replication If yes, extent (sq. feet): \_\_\_\_\_

**ALL Applicants must submit:**

- USGS map (1:24,000 or 1:25,000) with property boundary clearly outlined
- Aerial/Orthophoto w/ limit of work shown
- Project plans for entire site, including:
  - Wetland Resource Areas, showing existing and proposed conditions
  - Existing and proposed tree/vegetation clearing line
  - Clearly demarcated limits of work, including any upland alterations and staging areas
- Project description
- Photographs representative of the site

**Projects altering\* 10 or more acres, must also submit:**

- Vegetation cover type map of the site
- Project plans showing Priority Habitat boundaries

\*Alteration: Any physical alteration of land, soils, drainage or destruction of plant life, see "Project or Activity" (321 CMR 10.02).

The NHESP may request additional information, such as, but not limited to, species and habitat surveys, wetland reports, soil map and reports, and stormwater management reports (321 CMR 10.16).

~~~~ REQUIRED SIGNATURES ~~~~

I hereby certify under the penalties of perjury that the foregoing MESA filing and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

David Paulson 4/25/23  
 Signature of MassDOT Representative, OR Date

\_\_\_\_\_  
 Signature of Engineer / Contractor / Consultant retained by MassDOT Date

Send checklist and additional information (plans, maps) to:  
 Timothy McGuire  
 Environmental Review Biologist  
 MassWildlife Natural Heritage & Endangered Species Program  
 1 Rabbit Hill Road  
 Westborough, MA 01581



Maura Healey, Governor  
Kimberley Driscoll, Lieutenant Governor  
Gina Fiandaca, Secretary & CEO  
Jonathan L. Gulliver, Highway Administrator



**MassDOT Project #609179: SPENCER- BRIDGE REPLACEMENT, S-23-012, NORTH SPENCER ROAD  
(ROUTE 31) OVER THE SEVEN MILE RIVER**

The proposed project is located along State Route 31 (North Spencer Road) in the Town of Spencer and includes the bridge over Sevenmile River (Bridge Number S-23-012). The project involves removal of the existing steel beam and concrete span with concrete gravity abutments and wingwalls in its entirety and replacement with a precast 3-sided frame with footings and precast wingwalls. The proposed structure shall support a 37'-1" wide roadway with ST3-TL4 steel bridge rails at each fascia. Work in the approach roadways shall include full depth reconstruction, approach slab construction, bridge barrier to highway guardrail transitions, and highway guardrail. The demolition/construction will be conducted with staged construction with traffic being maintained with an alternating direction single lane.

The stream channel will be widened. Temporary Impacts to Land under Water are estimated to be 1,575± S.F.

Once the project is completed there will be an estimated net increase in Land Under Water of 250± square feet.

A freshwater mussel survey in the Sevenmile River was conducted by Biodiversity LLC., on October 22, 2020, as detailed in the *Freshwater Mussel Survey in the Sevenmile River for Proposed Replacement of the North Spencer Road Bridge Report* dated January 25, 2021 (attached). Four species were observed within the Sevenmile River, including Creeper (*Strophitus undulatus*). Therefore, MassDOT proposes pre-construction mussel translocation prior to any work within Land Under Water or on the Bank to the Sevenmile River.

Mussel translocation will occur any time August through late September 2024, as proposed within the Mussel Translocation narrative (attached). Installation of water controls and demolition of the bridge is anticipated to begin in April 2025 and construction completion is anticipated by the end of September 2025.

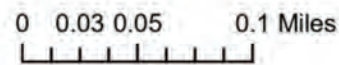
Work within Land Under Water will involve:

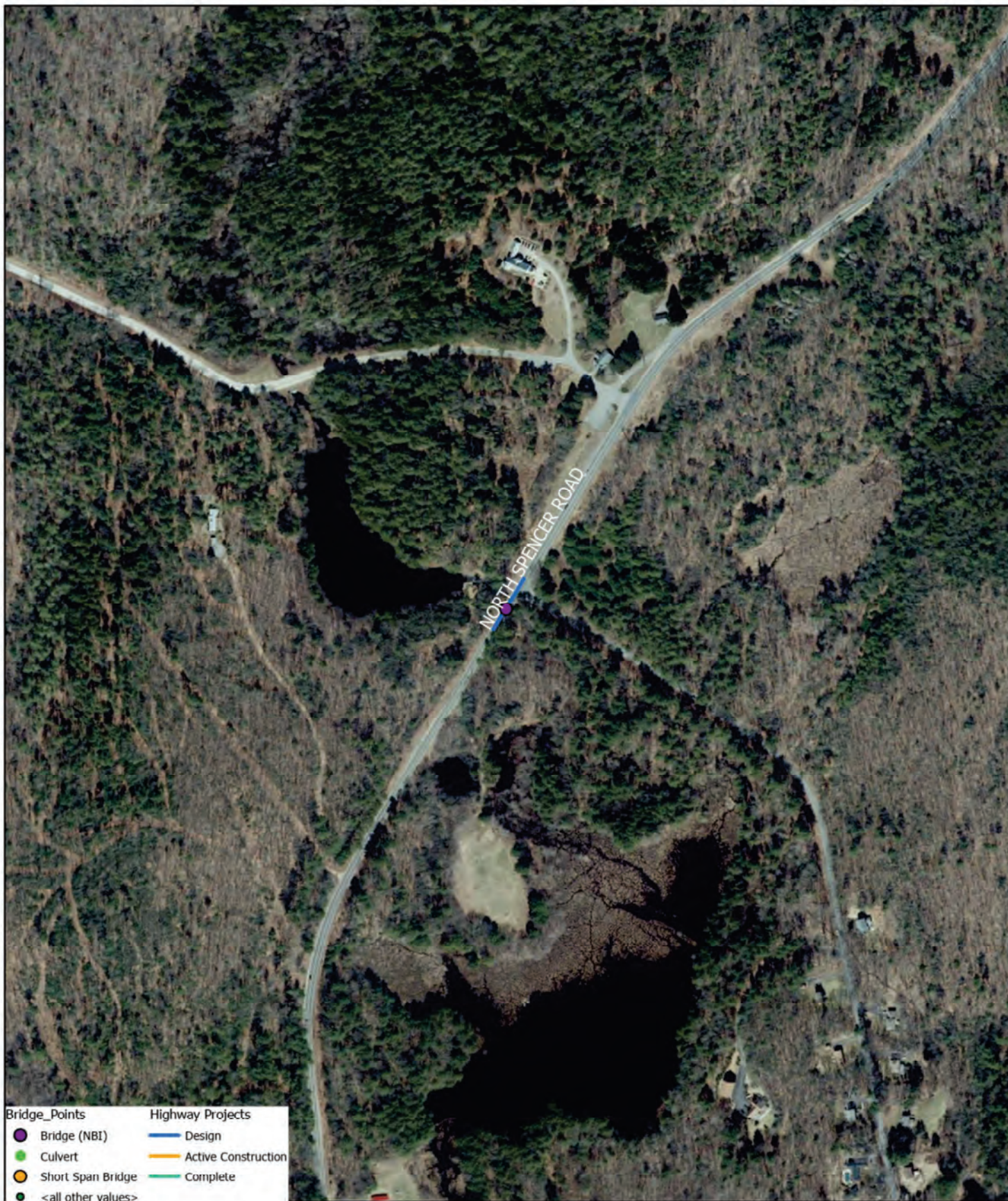
1. Pre-construction mussel translocation
2. Removing the streambed material and stockpiling it for replacement after the bridge has been erected
3. Demolition of the existing abutments and wingwalls.
4. Excavation to a depth for installation of the new abutment and wingwall footings
5. Backfill the abutments and wingwalls
6. Reinstall the reserved streambed materials.

Site Photos are Provided in the *Freshwater Mussel Survey* (attached).

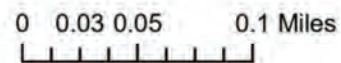


**609179- Spencer- Spencer Bridge Replacement (S-23-012)**  
 USGS Topographic Map





609179- Spencer- Spencer Bridge Replacement (S-23-012) Aerial Map



## **MUSSEL TRANSLOCATION**

The work under this Item shall include Mussel Sweeps and Translocation in accordance with NHESP Guidelines and the submittal approved by the Wildlife and Endangered Species Unit (David Paulson, 857-262-3378, david.j.paulson@dot.state.ma.us) and NHESP.

### **HISTORY**

As part of the planning process for this bridge construction project a freshwater mussel survey in the Sevenmile River was conducted by Biodiversity LLC, Leverett MA. The results of their survey indicated targeted species were found, therefore preconstruction relocation is required.

### **SUBMITTAL**

The Contractor shall submit a Mussel Sweeps and Translocation Plan to the MassDOT Wildlife and Endangered Species Unit (David Paulson, 857-262-3378, david.j.paulson@dot.state.ma.us) for review before sending it to NHESP for approval. The submittal shall contain location plans and procedures for finding and relocating the mussels. The following is a draft relocation plan.

Mussel sweeps and translocations will be conducted in accordance with NHESP Endangered Species Translocation Guidelines: Freshwater Mussels. *Strophitus undulatus* (creeper) is the only target (state-listed) mussel species in the project area.

Translocation will be conducted within the construction footprint, a 50-meter downstream buffer, and a 25-meter upstream buffer.

Translocation can be done anytime from August through late September 2024 prior to construction, only during the following conditions: water temperature  $>60.0^{\circ}\text{F}$ , high water clarity, normal river flows (i.e., average or below-average discharge), and fair weather. Biologists will conduct a visual and tactile search throughout the survey area. Visual searches will be conducted through the entire area. Tactile searches will focus on areas near where *S. undulatus* are found and where juvenile habitat exists; this will entail sweeping/fanning fine sediments, using fingertips to gently rake the bottom, and excavating within quadrats.

A minimum of 50  $0.25\text{m}^2$  quadrats will be excavated to a depth of 10cm and washed through a 5-mm sieve to detect buried mussels. Mussel counts will be recorded separately for visual surveys and quadrats (surface vs. buried).

*S. undulatus* will be gathered and held underwater in enclosures during the collection process. If 10 or more *S. undulatus* are found, each mussel will be tagged with a durable plastic tag affixed with super glue, measured, and photographed. If fewer than 10 are found, they will not be tagged, nor will follow-up monitoring be required.

*S. undulatus* will be transported to a translocation site. They will be carefully placed near each other in the streambed. If 10 or more *S. undulatus* were found, then biologists will install permanent markers on the streambed to facilitate finding these mussels during follow-up monitoring.

Tagged mussels will be checked for survival and movement one month and one year following translocation. Tag numbers, mortality, and any movement outside of the translocation area will be recorded during the 1-month survey, and the same information along with shell lengths and conditions of all tagged mussels will be recorded during the 1-year survey.



A written report will be prepared according to the standards outlined in the NHESP Endangered Species Translocation Guidelines: Freshwater Mussels and submitted to the Wildlife and Endangered Species Unit (David Paulson, 857-262-3378, david.j.paulson@dot.state.ma.us) for review before sending to NHESP.

**Compensation**

Payment for all work under this Item 799. shall be made at the contract unit price, lump sum, which shall include all work detailed above and contained in the approved submittal. Submittal preparation, and required revisions as stated by the Engineer are considered incidental to this Item.

Payment of eighty-five (85) % of the contract price shall be made upon acceptance of the written report submitted after the one-month survey. Payment of the final fifteen (15) % of the contract price shall be paid upon acceptance of the written report submitted after the one-year survey.

Bayside Engineering, Inc.  
600 Unicorn Park Drive  
Woburn, MA 01801



January 25, 2021

REPORT

Freshwater Mussel Survey in the Sevenmile River for Proposed Replacement of the North Spencer Road Bridge (Spencer, MA)

**Introduction:** Biodrawversity LLC conducted a freshwater mussel survey in the Sevenmile River as part of the planning and permitting for the replacement of the North Spencer Road Bridge in Spencer, Massachusetts. The survey was intended to document the presence, distribution, and density of any state-listed mussel species in areas that would be affected by the proposed project, to develop a management plan if target species were found, and to identify a potential translocation site a safe distance away from the project area. Based on previous surveys in the Sevenmile River, target mussel species included only *Strophitus undulatus* (Creeper; Species of Special Concern).

**Survey Date and Conditions:** The survey was conducted on October 22, 2020. Weather was sunny and warm. The Massachusetts Natural Heritage and Endangered Species Program (NHESP) was consulted about survey timing, as mussel surveys are typically completed by late September. Nevertheless, central Massachusetts was in a moderate drought, streamflows were very low, and mild weather kept water temperatures in the upper 50s. Mussels were still active. Fallen leaves made it challenging to survey some areas of the streambed, but otherwise conditions were ideal for the survey.

**Survey Methods:** The mussel survey was conducted in all areas where the stream bottom may be affected by project-related construction, including a buffer extending upstream to the Spencer Abbey Dam, and a 100-meter downstream buffer (Figure 1). Biologists searched for freshwater mussels at the sediment surface by snorkeling and wading with a clear-bottom bucket. A potential translocation site a safe distance downstream from the project area was also identified and assessed; an upstream relocation site was not considered because of the short distance from the bridge to the Spencer Abbey Dam. Biologists recorded the shell length, shell condition, habitat (depth and substrate), and location (using GPS) of every state-listed mussel. Biologists also photographed mussels and their habitat.

**Survey Results:** Four species were found, including *S. undulatus*, *Alasmidonta undulata* (triangle floater), *Elliptio complanata* (eastern elliptio), and *Pyganodon cataracta* (eastern floater). Only *S. undulatus* is state-listed in Massachusetts. Several hundred *E. complanata*, ~150 *A. undulata*, fewer than 10 *P. cataracta*, and one *S. undulatus* were found. The *S. undulatus* was 87.0 mm in length, exhibited moderate-heavy shell erosion, and was found in shallow water (~10 inches) in a patch of *Sparganium* just downstream from the bridge (Figure 1).

Because *S. undulatus* was detected near the bridge, likely triggering the requirement for a pre-construction translocation effort, a potential translocation site was identified and assessed down-

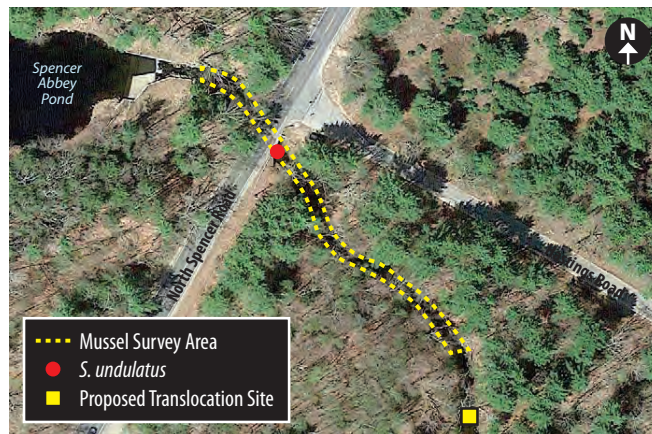
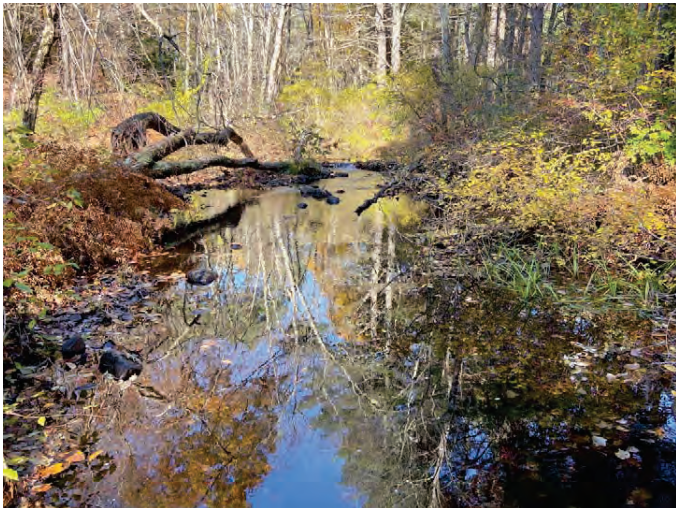


Figure 1. Survey area, state-listed mussel location, and proposed translocation site in the Sevenmile River at the North Spencer Road bridge.





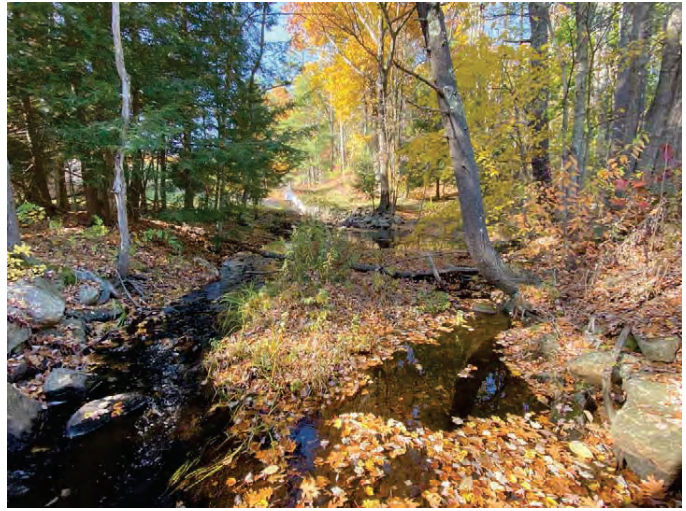
Sevenmile River near the downstream end of the mussel survey area.



Sevenmile River just downstream from the North Spencer Road bridge.



North Spencer Road bridge; this is where *S. undulatus* was detected.



Sevenmile River upstream from the North Spencer Road bridge.

stream from the survey area (Figure 1). A brief survey confirmed the presence of mussels (*E. complanata* and *A. undulata* only) and habitat that would be suitable for *S. undulatus*. Water depth was generally less than 2.0 ft, water velocity was slow, substrate was a mix of silt, sand, gravel and cobble, and there was instream cover (large woody debris).

**Conclusion:** The state-listed *S. undulatus* was detected in an area that would be affected by bridge replacement. Therefore, NHESP will likely require a pre-construction mussel sweep to collect and translocate mussels to a safe location. NHESP has developed standard protocols for these types of projects. A draft mussel management plan is included in this report, based on NHESP protocols and site-specific considerations.



*Strophitus undulatus* (creeper) found during the survey.



One of the >100 *Alasmidonta undulata* (triangle floater) found.

## DRAFT MUSSEL TRANSLOCATION PLAN

- Mussel sweeps and translocations will be conducted in accordance with *NHESP Endangered Species Translocation Guidelines: Freshwater Mussels*. *Strophitus undulatus* (creeper) is the only target (state-listed) mussel species in the project area.
- Translocation will be conducted within the construction footprint, a 50-meter downstream buffer, and a 25-meter upstream buffer. These buffer distances are fairly standard for these types of bridge replacement projects, but may be adjusted depending on the final design and construction plans, which are not yet completed.
- Translocation can be done anytime from early May to late September, only during the following conditions: water temperature >60.0F, high water clarity, normal river flows (i.e., average or below-average discharge), and fair weather.
- Biologists will conduct a visual and tactile search throughout the survey area. Visual searches will be conducted through the entire area. Tactile searches will focus on areas near where *S. undulatus* are found and where juvenile habitat exists; this will entail sweeping/fanning fine sediments, using fingertips to gently rake the bottom, and excavating within quadrats.
- A minimum of 50 0.25m<sup>2</sup> quadrats will be excavated to a depth of 10cm and washed through a 5-mm sieve to detect buried mussels. Mussel counts will be recorded separately for visual surveys and quadrats (surface vs. buried).
- *S. undulatus* will be gathered and held underwater in enclosures during the collection process. If 10 or more *S. undulatus* are found, each mussel will be tagged with a durable plastic tag affixed with super glue, measured, and photographed. If fewer than 10 are found, they will not be tagged, nor will follow-up monitoring be required.
- *S. undulatus* will be transported to a translocation site identified during the initial survey. They will be carefully placed near each other in the streambed. If 10 or more *S. undulatus* were found, then biologists will install permanent markers on the streambed to facilitate finding these mussels during follow-up monitoring.
- Tagged mussels will be checked for survival and movement one month and one year following translocation. Tag numbers, mortality, and any movement outside of the translocation area will be recorded during the 1-month survey, and the same information along with shell lengths and conditions of all tagged mussels will be recorded during the 1-year survey.
- A written report will be prepared according to the standards outlined in the *NHESP Endangered Species Translocation Guidelines: Freshwater Mussels*.

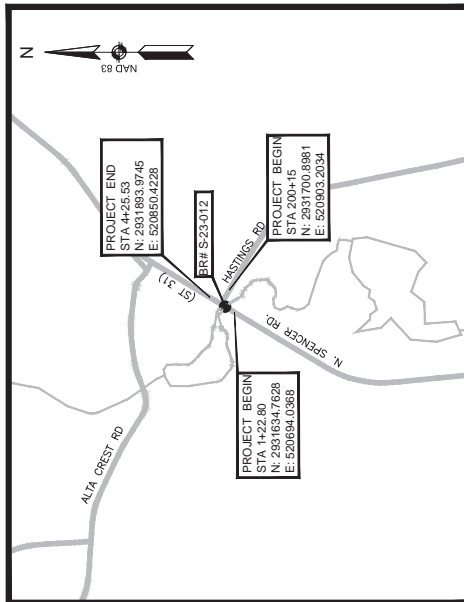
# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

PLAN AND PROFILE OF  
ST 31 (NORTH SPENCER ROAD)  
(BRIDGE NO. S-23-012)

IN THE TOWN OF  
**SPENCER**  
WORCESTER COUNTY

FEDERAL AID PROJECT NO. #####

## 75% SUBMITTAL



| DESIGN DESIGNATION (ST 31 (NORTH SPENCER ROAD)) |        |
|---|--------|
| DESIGN SPEED                                    | 45 MPH |
| ADT (2022)                                      | 5,150  |
| ADT (2042)                                      | 6,536  |
| K   | 10%    |
| D   | 50%    |
| T (PEAK HOUR)                                   | 2%     |
| T (AVERAGE DAY)                                 | N/A    |
| DHV   | 502    |
| DDHV  | 251    |
| FUNCTIONAL CLASSIFICATION MAJOR COLLECTOR       |        |

| SHEET NO. | INDEX | DESCRIPTION                         |
|-----------|-------|-------------------------------------|
| 1         |       | TITLE                               |
| 2         |       | LEGEND                              |
| 3         |       | TYPICAL SECTIONS - N SPENCER RD     |
| 4         |       | TYPICAL SECTIONS - HASTINGS RD      |
| 5         |       | CONSTRUCTION PLAN                   |
| 6         |       | COLOR UTILITY PLAN - STAGE 1        |
| 7         |       | PROFILE - N SPENCER RD              |
| 8         |       | PROFILE - HASTINGS RD               |
| 9         |       | CURB TIE & GRADING PLAN             |
| 10        |       | TRAFFIC SIGN & PAVEMENT MARKINGS    |
| 11        |       | KEY PLAN, PROFILES & LOCUS MAP      |
| 12        |       | GENERAL NOTES                       |
| 13        |       | BORINGS                             |
| 14        |       | PLAN & ELEVATION                    |
| 15        |       | T/OP STAGE 1                        |
| 16        |       | T/OP STAGE 2                        |
| 17        |       | TRAFFIC SIGNAL DATA                 |
| 18        |       | DE/TOUR PLAN                        |
| 19        |       | STAGE I CONSTRUCTION                |
| 20        |       | STAGE II CONSTRUCTION               |
| 21        |       | STAGE CONSTRUCTION MISC.            |
| 22        |       | FOOTING LAYOUT                      |
| 23        |       | ABUTMENT PLAN, ELEVATION & SECTIONS |
| 24        |       | ABUTMENT DETAILS                    |
| 25        |       | WINGWALL ELEVATION & SECTION        |
| 26        |       | APPROACH SLAB DETAILS               |
| 27        |       | FRAMING PLAN & ROOF CROSS SECTION   |
| 28        |       | 3-SIDED BOX DETAILS                 |
| 29        |       | GUARDRAIL TRANSITION BASE           |
| 30        |       | GUARDRAIL TRANSITION TOP            |
| 31        |       | BRIDGE RAIL                         |
| 32        |       | CROSS SECTIONS ST 31                |
| 33        |       | CROSS SECTIONS ST 31 (2)            |
| 34        |       | CROSS SECTIONS ST 31                |
| 35        |       | CROSS SECTIONS HASTINGS ROAD        |
| 36        |       | CROSS SECTIONS HASTING ROAD         |

| SPENCER<br>ST 31 (NORTH SPENCER ROAD) |            |
|---------------------------------------|------------|
| DATE                                  | 10/11/2022 |
| REV #                                 | 1          |
| PROJECT FILE NO.                      | 609179     |

TITLE SHEET & INDEX

THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARDS SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2022, THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, AND THE 2015 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING. THE 1988 MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1988 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

|      |            |               |       |
|------|------------|---------------|-------|
| DATE | 10/19/2022 | 25% SUBMITTAL | 1     |
| DATE |            | DESCRIPTION   | REV # |

**massDOT**  
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

APPROVED

**BAYSIDE ENGINEERING**  
1600 Union Park Drive, Worcester, MA 01601  
Phone: 781.932.3201 | Fax: 781.932.3413  
www.baysideengineering.com

CHIEF ENGINEER \_\_\_\_\_ DATE \_\_\_\_\_

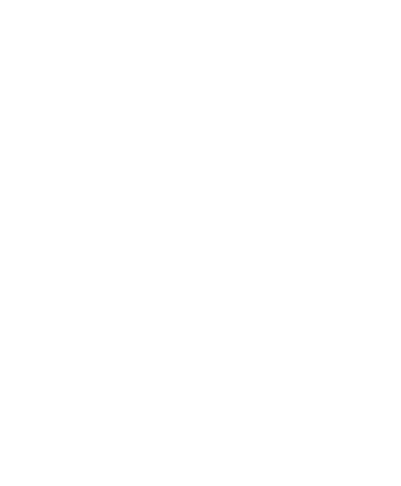
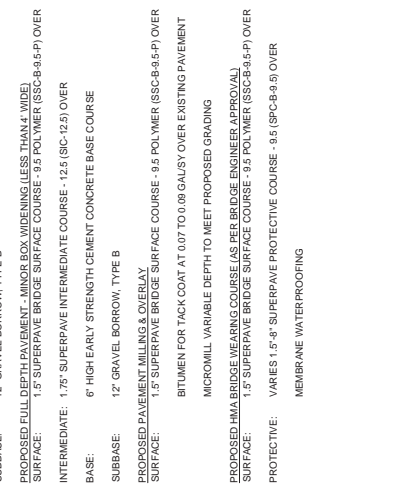
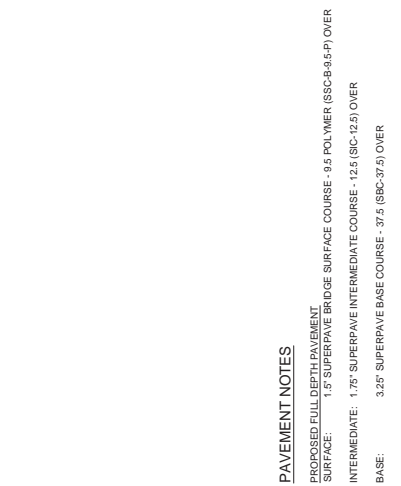


LENGTH OF PROJECT = 390.73 FEET = 0.07 MILES



|                  |                    |                            |              |
|------------------|--------------------|----------------------------|--------------|
| SPENCER          |                    | ST 31 (NORTH SPENCER ROAD) |              |
| DATE             | FED. AID PROJ. NO. | SHEET NO.                  | TOTAL SHEETS |
| 1/14             | 100-1-100-100      | 31                         | 110          |
| PROJECT FILE NO. |                    | 80774                      |              |

TYPICAL SECTIONS - N SPENCER RD



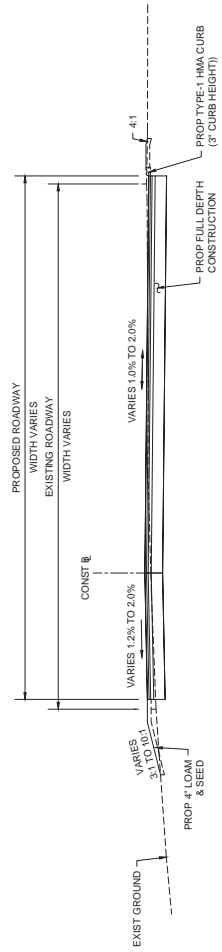
PAVEMENT NOTES

- PROPOSED FULL DEPTH PAVEMENT SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER INTERMEDIATE: 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER BASE: 3.25" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER SUBBASE: 12" GRAVEL BORROW, TYPE B
- PROPOSED FULL DEPTH PAVEMENT - MINOR BOX WIDENING (LESS THAN 4' WIDE) SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER INTERMEDIATE: 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER BASE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE SUBBASE: 12" GRAVEL BORROW, TYPE B
- PROPOSED PAVEMENT MILLING & OVERLAY SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER BITUMEN FOR TACK COAT AT 0.07 TO 0.09 GAL/SY OVER EXISTING PAVEMENT MICROMILL, VARIABLE DEPTH TO MEET PROPOSED GRADING
- PROPOSED HMA BRIDGE WEARING COURSE (AS PER BRIDGE ENGINEER APPROVAL) SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B-9.5-P) OVER PROTECTIVE: VARIES 1.5" - 9" SUPERPAVE PROTECTIVE COURSE - 9.5 (SPC-B-9.5) OVER MEMBRANE WATER PROOFING

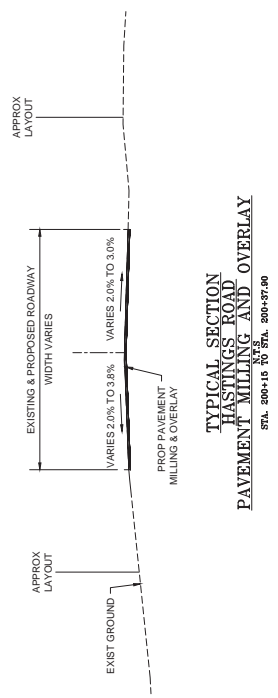
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

|                  |                |           |              |
|------------------|----------------|-----------|--------------|
| DATE             | DESIGNER'S NO. | SHEET NO. | TOTAL SHEETS |
| 1/24             | 200-27         | 4         | 10           |
| PROJECT FILE NO. | 800779         |           |              |

**TYPICAL SECTIONS - HASTINGS RD**

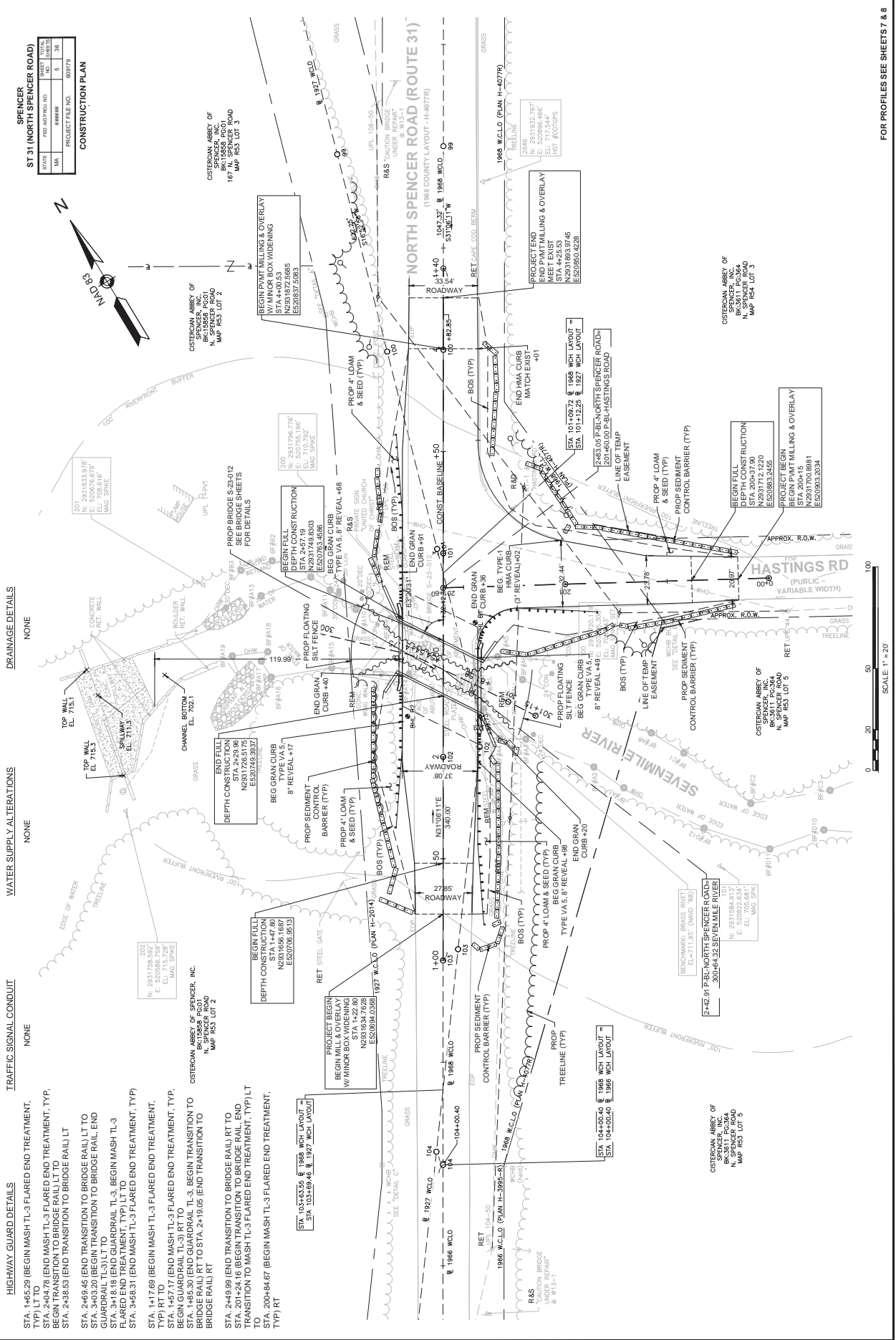


**TYPICAL SECTION**  
**HASTINGS ROAD**  
**FULL DEPTH CONSTRUCTION**  
STA. 200+37.00 TO STA. 201+42.00



**TYPICAL SECTION**  
**HASTINGS ROAD**  
**PAVEMENT MILLING AND OVERLAY**  
STA. 200+10 TO STA. 200+27.00





**HIGHWAY GUARD DETAILS**  
 STA. 1465.29 (BEGIN MASH TL-3 FLARED END TREATMENT, TYP.) LT TO  
 STA. 2404.78 (END MASH TL-3 FLARED END TREATMENT, TYP.)  
 STA. 2438.53 (END TRANSITION TO BRIDGE RAIL) LT  
 STA. 2469.45 (END TRANSITION TO BRIDGE RAIL) LT TO  
 GUARDRAIL TL-3 TO BRIDGE RAIL TL-3, BEGIN MASH TL-3  
 FLARED END TREATMENT, TYP.) LT TO  
 STA. 3458.31 (END MASH TL-3 FLARED END TREATMENT, TYP.)  
 STA. 1417.69 (BEGIN MASH TL-3 FLARED END TREATMENT,  
 TYP.) RT TO  
 STA. 1417.69 (END MASH TL-3 FLARED END TREATMENT, TYP.)  
 BEGIN GUARDRAIL TL-3) RT TO  
 STA. 1465.30 (END GUARDRAIL TL-3, BEGIN TRANSITION TO  
 BRIDGE RAIL) RT TO STA. 2419.05 (END TRANSITION TO  
 BRIDGE RAIL) RT  
 STA. 2449.99 (END TRANSITION TO BRIDGE RAIL) RT TO  
 STA. 201+24.16 (BEGIN TRANSITION TO BRIDGE RAIL, END  
 TRANSITION TO MASH TL-3 FLARED END TREATMENT, TYP.) LT  
 TO  
 STA. 200+84.67 (BEGIN MASH TL-3 FLARED END TREATMENT,  
 TYP.) RT

**TRAFFIC SIGNAL CONDUIT**  
 NONE

**WATER SUPPLY ALTERATIONS**  
 NONE

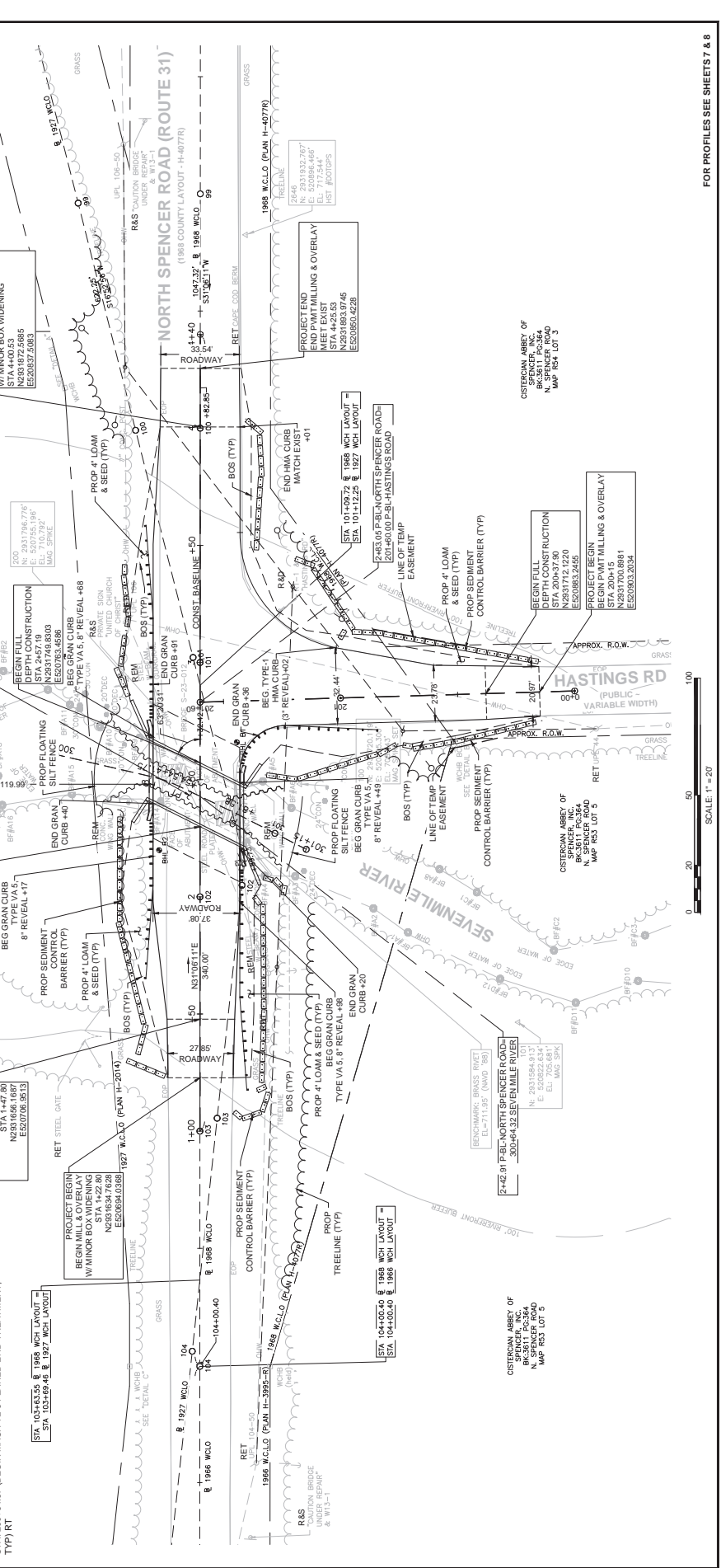
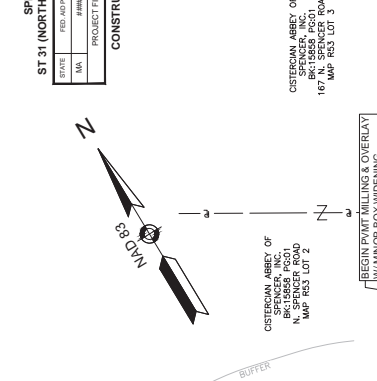
**DRAINAGE DETAILS**  
 NONE

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

| DATE    | REV. | DESCRIPTION        | SHEET NO. | TOTAL SHEETS |
|---------|------|--------------------|-----------|--------------|
| 1/11/23 | 1    | ISSUED FOR PERMITS | 1         | 1            |

PROJECT FILE NO. 609179

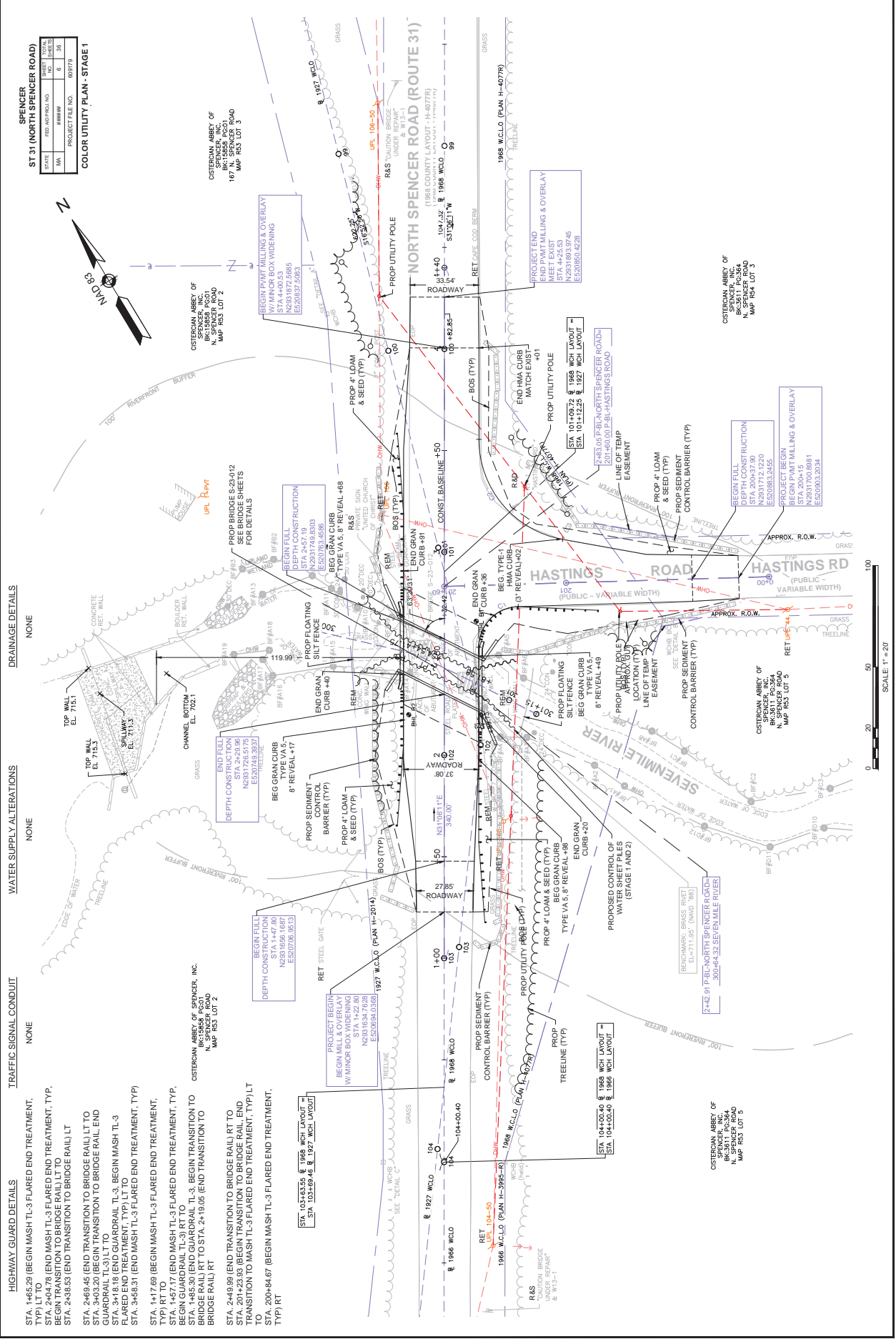
**CONSTRUCTION PLAN**



**FOR PROFILES SEE SHEETS 7 & 8**

SCALE: 1" = 20'

609179.MDCONSTRUCTION.PLAN.DWG  
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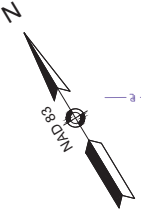


- HIGHWAY GUARD DETAILS**
- STA. 1465.29 (BEGIN MASH TL-3 FLARED END TREATMENT, TYP) LT TO
  - STA. 2404.78 (END MASH TL-3 FLARED END TREATMENT, TYP) TO
  - STA. 2438.53 (END TRANSITION TO BRIDGE RAIL) LT
  - STA. 2469.45 (END TRANSITION TO BRIDGE RAIL) LT TO
  - STA. 3403.20 (BEGIN TRANSITION TO BRIDGE RAIL, END GUARDRAIL TL-3) TO
  - STA. 3403.20 (BEGIN TRANSITION TO BRIDGE RAIL, END GUARDRAIL TL-3) TO
  - STA. 3458.31 (END MASH TL-3 FLARED END TREATMENT, TYP) LT TO
  - STA. 3458.31 (END MASH TL-3 FLARED END TREATMENT, TYP) RT
  - STA. 1417.69 (BEGIN MASH TL-3 FLARED END TREATMENT, TYP) RT TO
  - STA. 1417.69 (BEGIN MASH TL-3 FLARED END TREATMENT, TYP) RT TO
  - STA. 1465.30 (END GUARDRAIL TL-3, BEGIN TRANSITION TO BRIDGE RAIL) RT TO
  - STA. 2014.23 (BEGIN TRANSITION TO BRIDGE RAIL, END TRANSITION TO MASH TL-3 FLARED END TREATMENT, TYP) LT TO
  - STA. 2004.84.67 (BEGIN MASH TL-3 FLARED END TREATMENT, TYP) RT
- TRAFFIC SIGNAL CONDUIT**
- NONE
- WATER SUPPLY ALTERATIONS**
- NONE
- DRAINAGE DETAILS**
- NONE

**SPENCER**

| DATE    | REV. | DESCRIPTION        | SHEET NO. | TOTAL SHEETS |
|---------|------|--------------------|-----------|--------------|
| 1/11/23 | 1    | ISSUED FOR PERMITS | 10        | 10           |

PROJECT FILE NO. 609179



SCALE: 1" = 20'

**ST 31 (NORTH SPENCER ROAD)**

**COLOR UTILITY PLAN - STAGE 1**

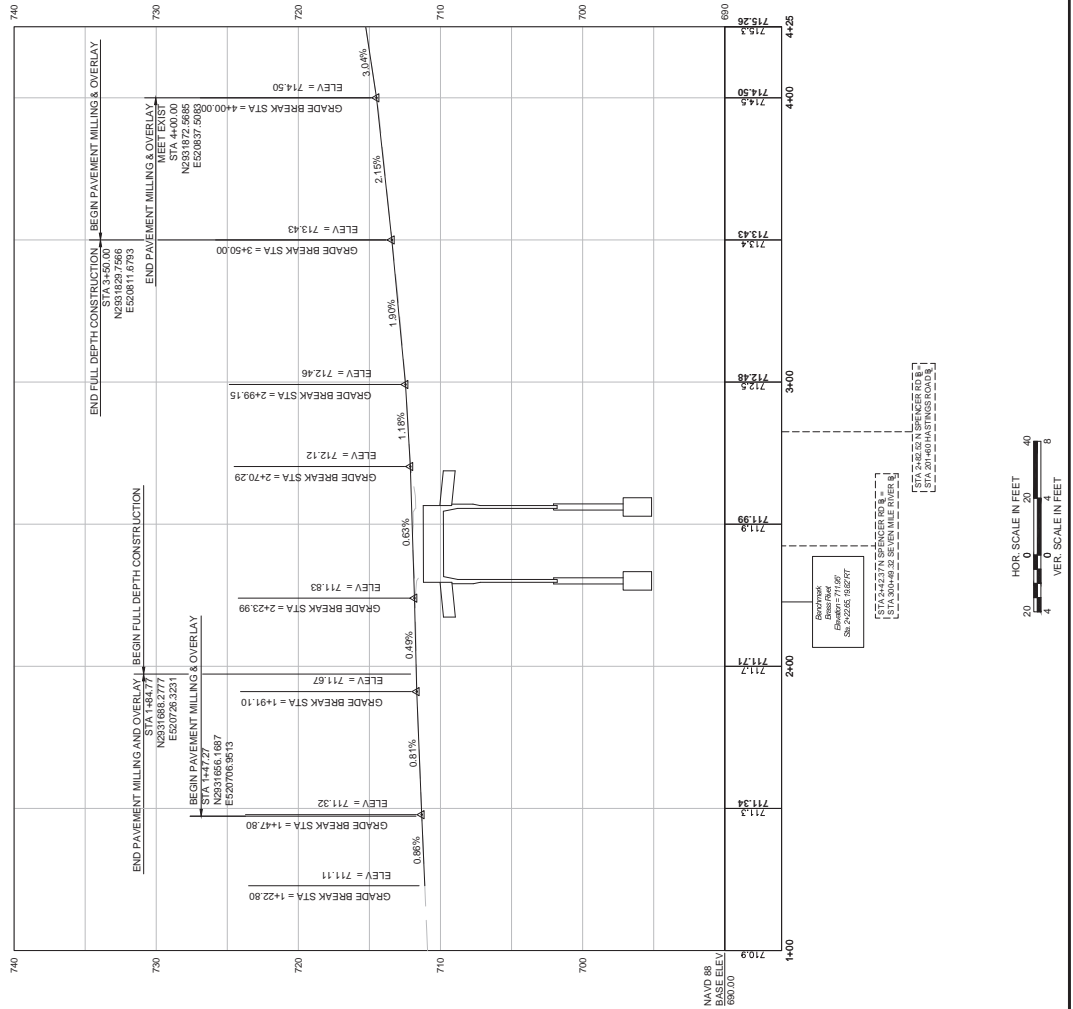
OSTERSON ARBRY OF SPENCER, INC.  
 BK-3117-FC-364  
 MAP 853 LOT 2

OSTERSON ARBRY OF SPENCER, INC.  
 BK-3117-FC-364  
 MAP 853 LOT 3

OSTERSON ARBRY OF SPENCER, INC.  
 BK-3117-FC-364  
 MAP 853 LOT 3

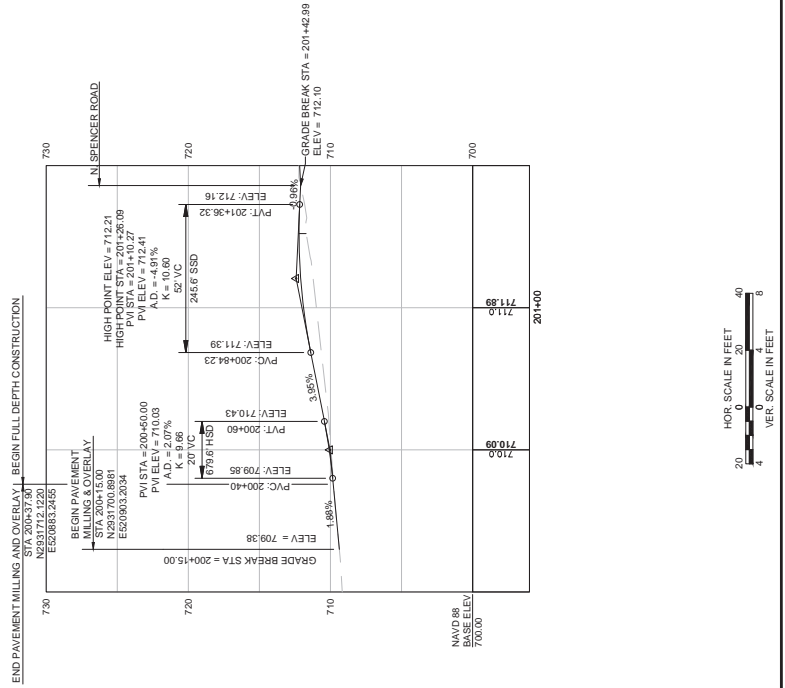
OSTERSON ARBRY OF SPENCER, INC.  
 BK-3117-FC-364  
 MAP 853 LOT 3

|                                   |             |             |        |
|-----------------------------------|-------------|-------------|--------|
| <b>SPENCER</b>                    |             |             |        |
| <b>ST 31 (NORTH SPENCER ROAD)</b> |             |             |        |
| DATE                              | FED. AGENCY | SHEET TOTAL |        |
| NO.                               | NO.         | NO.         | NO.    |
| 7/1/20                            | 7/1/20      | 7/1/20      | 7/1/20 |
| PROJECT FILE NO. 609179           |             |             |        |
| PROFILE - N SPENCER RD            |             |             |        |



FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 5

|                       |                    |             |        |
|-----------------------|--------------------|-------------|--------|
| SPENCER               |                    | SHEET TOTAL |        |
| DATE                  | FED. AID PROJ. NO. | NO.         | SHEETS |
| 1/14                  | 100000000          | 13          | 130    |
| PROJECT FILE NO.      |                    | 609179      |        |
| PROFILE - HASTINGS RD |                    |             |        |



FOR CONSTRUCTION PLAN:  
 SEE SHEET NO. 5

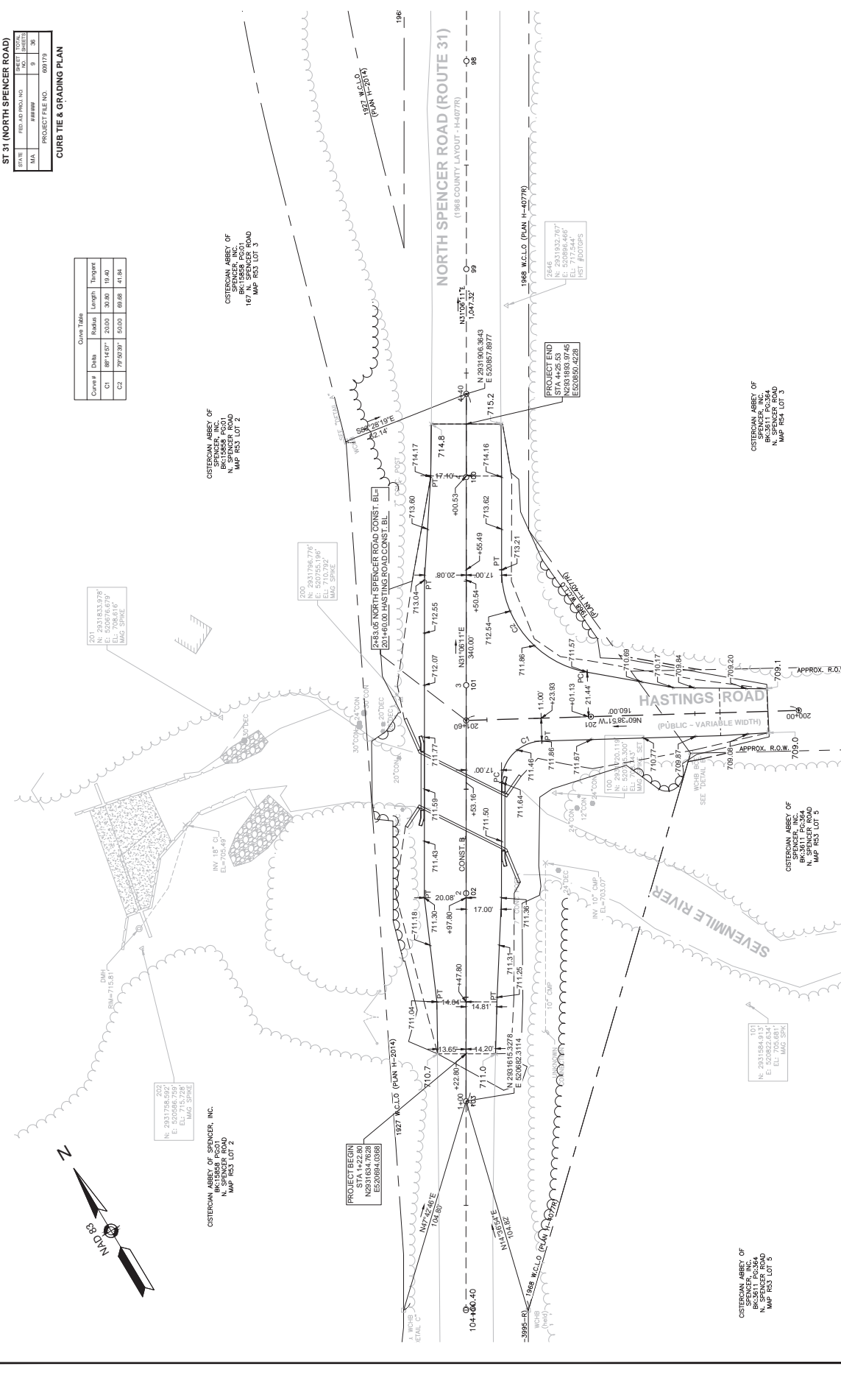
609179-125779-TITLE PLAN.DWG Printed on 17-Jun-2023 3:49 PM

**SPENCER ST 31 (NORTH SPENCER ROAD)**

| DATE | REV | BY | CHK | NO. | DESCRIPTION |
|------|-----|----|-----|-----|-------------|
| MA   |     |    |     | 1   | 31          |
|      |     |    |     | 2   | 31          |
|      |     |    |     | 3   | 31          |
|      |     |    |     | 4   | 31          |
|      |     |    |     | 5   | 31          |
|      |     |    |     | 6   | 31          |
|      |     |    |     | 7   | 31          |
|      |     |    |     | 8   | 31          |
|      |     |    |     | 9   | 31          |
|      |     |    |     | 10  | 31          |
|      |     |    |     | 11  | 31          |
|      |     |    |     | 12  | 31          |
|      |     |    |     | 13  | 31          |
|      |     |    |     | 14  | 31          |
|      |     |    |     | 15  | 31          |
|      |     |    |     | 16  | 31          |
|      |     |    |     | 17  | 31          |
|      |     |    |     | 18  | 31          |
|      |     |    |     | 19  | 31          |
|      |     |    |     | 20  | 31          |
|      |     |    |     | 21  | 31          |
|      |     |    |     | 22  | 31          |
|      |     |    |     | 23  | 31          |
|      |     |    |     | 24  | 31          |
|      |     |    |     | 25  | 31          |
|      |     |    |     | 26  | 31          |
|      |     |    |     | 27  | 31          |
|      |     |    |     | 28  | 31          |
|      |     |    |     | 29  | 31          |
|      |     |    |     | 30  | 31          |
|      |     |    |     | 31  | 31          |
|      |     |    |     | 32  | 31          |
|      |     |    |     | 33  | 31          |
|      |     |    |     | 34  | 31          |
|      |     |    |     | 35  | 31          |
|      |     |    |     | 36  | 31          |
|      |     |    |     | 37  | 31          |
|      |     |    |     | 38  | 31          |
|      |     |    |     | 39  | 31          |
|      |     |    |     | 40  | 31          |
|      |     |    |     | 41  | 31          |
|      |     |    |     | 42  | 31          |
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|      |     |    |     | 45  | 31          |
|      |     |    |     | 46  | 31          |
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|      |     |    |     | 48  | 31          |
|      |     |    |     | 49  | 31          |
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|      |     |    |     | 51  | 31          |
|      |     |    |     | 52  | 31          |
|      |     |    |     | 53  | 31          |
|      |     |    |     | 54  | 31          |
|      |     |    |     | 55  | 31          |
|      |     |    |     | 56  | 31          |
|      |     |    |     | 57  | 31          |
|      |     |    |     | 58  | 31          |
|      |     |    |     | 59  | 31          |
|      |     |    |     | 60  | 31          |
|      |     |    |     | 61  | 31          |
|      |     |    |     | 62  | 31          |
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|      |     |    |     | 65  | 31          |
|      |     |    |     | 66  | 31          |
|      |     |    |     | 67  | 31          |
|      |     |    |     | 68  | 31          |
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|      |     |    |     | 70  | 31          |
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|      |     |    |     | 75  | 31          |
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|      |     |    |     | 82  | 31          |
|      |     |    |     | 83  | 31          |
|      |     |    |     | 84  | 31          |
|      |     |    |     | 85  | 31          |
|      |     |    |     | 86  | 31          |
|      |     |    |     | 87  | 31          |
|      |     |    |     | 88  | 31          |
|      |     |    |     | 89  | 31          |
|      |     |    |     | 90  | 31          |
|      |     |    |     | 91  | 31          |
|      |     |    |     | 92  | 31          |
|      |     |    |     | 93  | 31          |
|      |     |    |     | 94  | 31          |
|      |     |    |     | 95  | 31          |
|      |     |    |     | 96  | 31          |
|      |     |    |     | 97  | 31          |
|      |     |    |     | 98  | 31          |
|      |     |    |     | 99  | 31          |
|      |     |    |     | 100 | 31          |

**CURB TIE & GRADING PLAN**

| Curve # | Delta     | Radius | Length | Throat |
|---------|-----------|--------|--------|--------|
| C1      | 89°14'07" | 20.00  | 30.80  | 19.40  |
| C2      | 79°03'39" | 50.00  | 89.88  | 41.84  |



CSTERIAN ABBEY OF SPENCER, INC.  
 BR-3811, PC-384  
 MAP R54, LOT 3

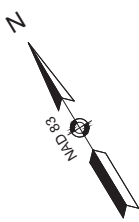
CSTERIAN ABBEY OF SPENCER, INC.  
 BR-3811, PC-384  
 MAP R54, LOT 5

CSTERIAN ABBEY OF SPENCER, INC.  
 BR-3811, PC-384  
 MAP R54, LOT 3

CSTERIAN ABBEY OF SPENCER, INC.  
 BR-3811, PC-384  
 MAP R54, LOT 3

**TRAFFIC SIGN SUMMARY**

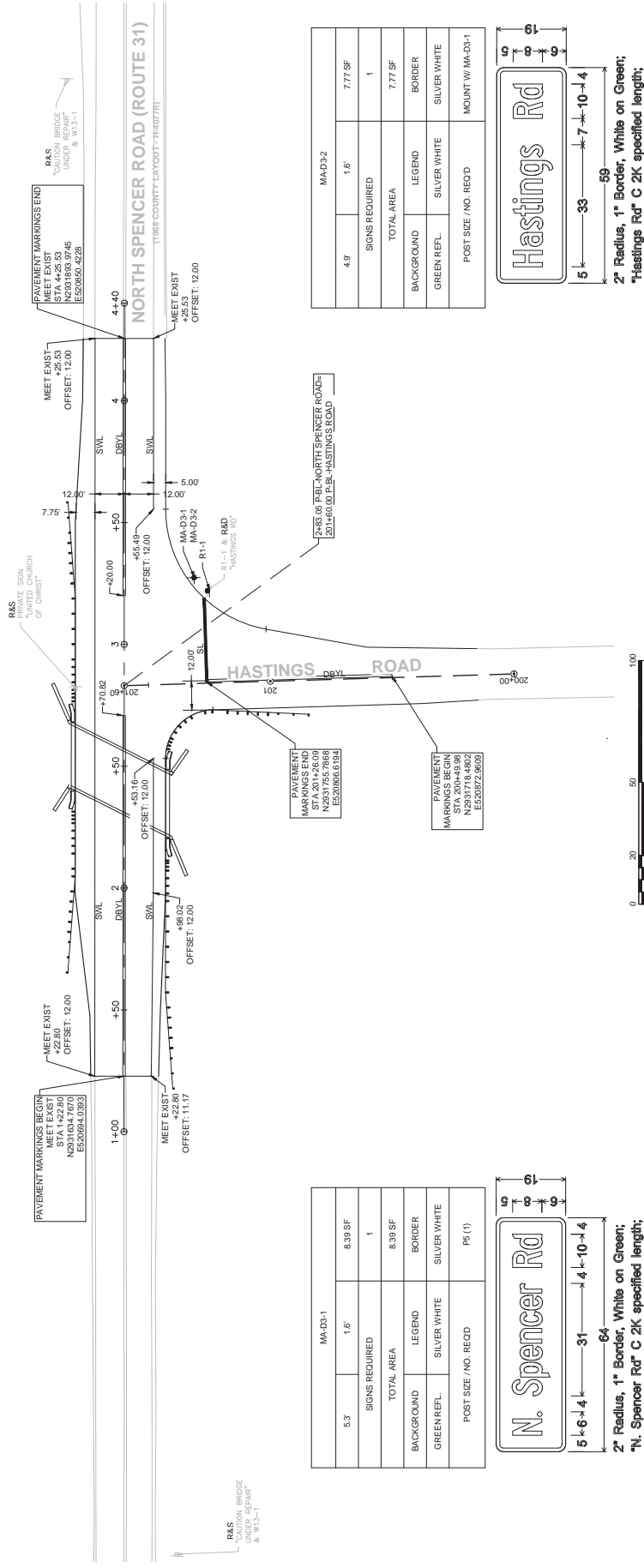
| IDENTIFICATION NUMBER | SIZE OF SIGN |        | TEXT | TEXT DIMENSIONS (INCHES) |                  | NUMBER OF SIGNS REQUIRED | COLOR           |             | POST SIZE AND NUMBER REQUIRED | UNIT AREA (S.F.) | AREA IN SQUARE FEET |
|-----------------------|--------------|--------|------|--------------------------|------------------|--------------------------|-----------------|-------------|-------------------------------|------------------|---------------------|
|                       | WIDTH        | HEIGHT |      | LETTER HEIGHT            | VERTICAL SPACING |                          | ARROW HTE. MKR. | BACK-GROUND |                               |                  |                     |
| R1-1                  | 30           | 30     | STOP | 1                        | 1                | 1                        | 1               | 1           | P5 (1)                        | 6.25             | 6.25                |



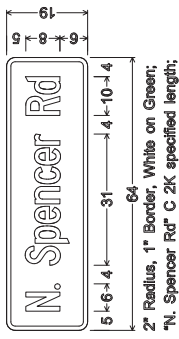
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

|      |                  |               |
|------|------------------|---------------|
| DATE | FED. AGENCY      | SHEET TOTAL   |
| MA   | PROJECT FILE NO. | NO. OF SHEETS |
|      |                  | 607/741       |

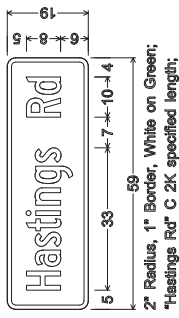
**TRAFFIC SIGN & PAVEMENT MARKINGS**



|                      |              |              |
|----------------------|--------------|--------------|
| MA-D3-1              | 16"          | 8.39 SF      |
| SIGNS REQUIRED       |              | 1            |
| TOTAL AREA           |              | 8.39 SF      |
| BACKGROUND           | LEGEND       | BORDER       |
| SILVER WHITE         | SILVER WHITE | SILVER WHITE |
| POST SIZE / NO. RECD |              | P5 (1)       |



|                      |              |                  |
|----------------------|--------------|------------------|
| MAD32                | 1.6"         | 7.77 SF          |
| SIGNS REQUIRED       |              | 1                |
| TOTAL AREA           |              | 7.77 SF          |
| BACKGROUND           | LEGEND       | BORDER           |
| SILVER WHITE         | SILVER WHITE | SILVER WHITE     |
| POST SIZE / NO. RECD |              | MOUNT W/ MA-D3-1 |

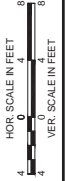
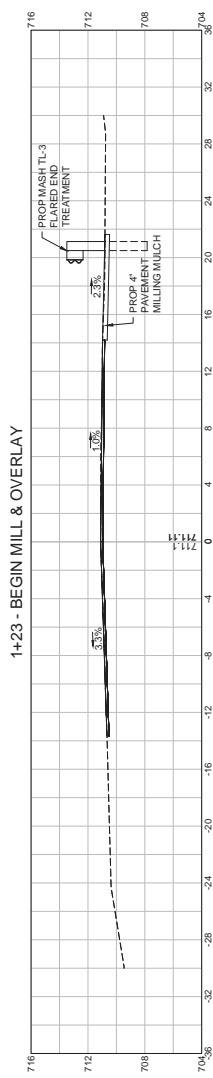
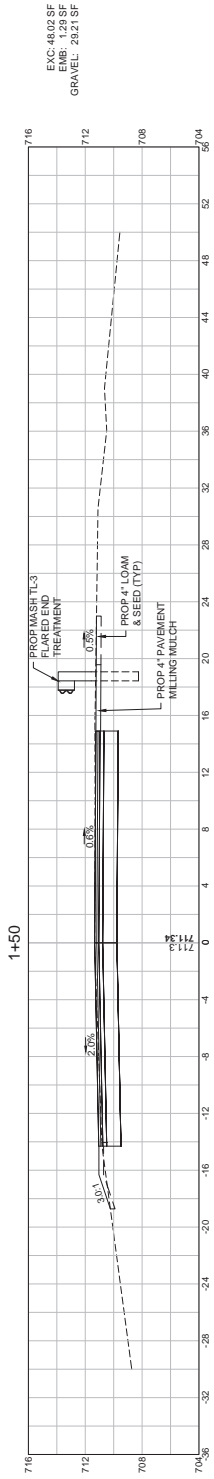


SCALE: 1" = 20'

**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

|                  |                    |             |
|------------------|--------------------|-------------|
| DATE             | FED. AID PROJ. NO. | SHEET TOTAL |
| NO.              |                    | NO.         |
| NO.              |                    | NO.         |
| PROJECT FILE NO. | 80077A             |             |

**CROSS SECTIONS ST 31**



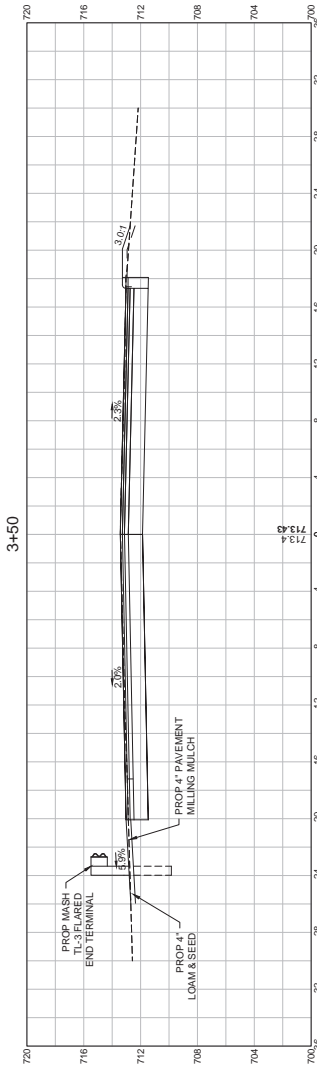
**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

|          |             |            |           |              |
|----------|-------------|------------|-----------|--------------|
| DATE     | DESIGNED BY | CHECKED BY | SHEET NO. | TOTAL SHEETS |
| 06/21/23 | JH11        | JH11       | 31        | 30           |

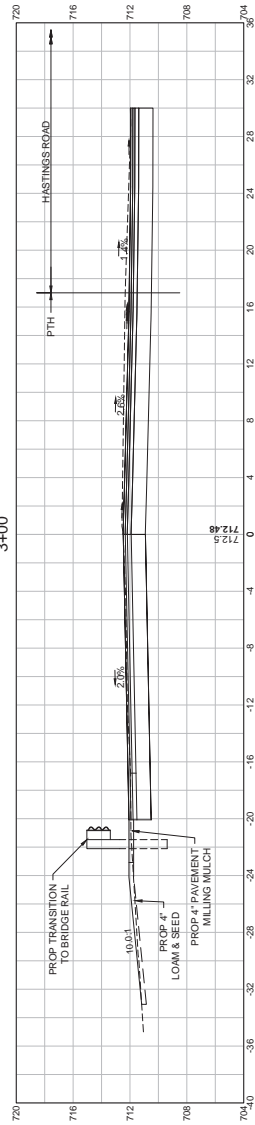
PROJECT FILE NO. 609179

**CROSS SECTIONS ST 31 (2)**

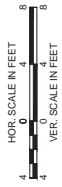
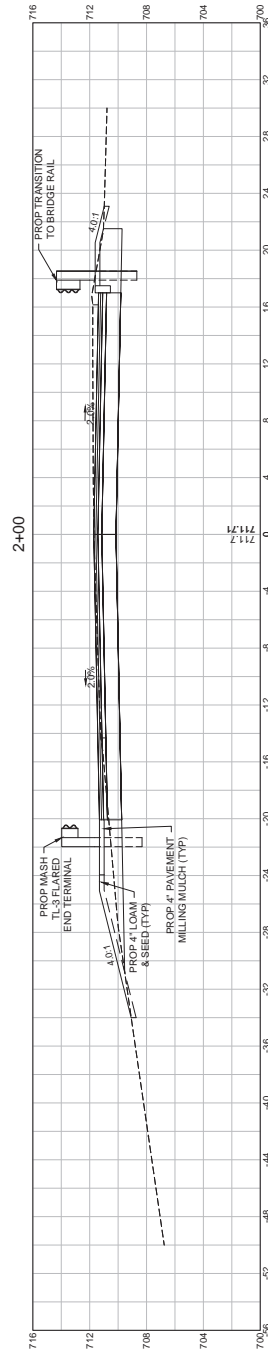
EXC: 59.81 SF  
EMB: 5.26 SF  
GRAVEL: 58.93 SF



EXC: 4.60 SF  
EMB: 2.20 SF  
GRAVEL: 37.07 SF



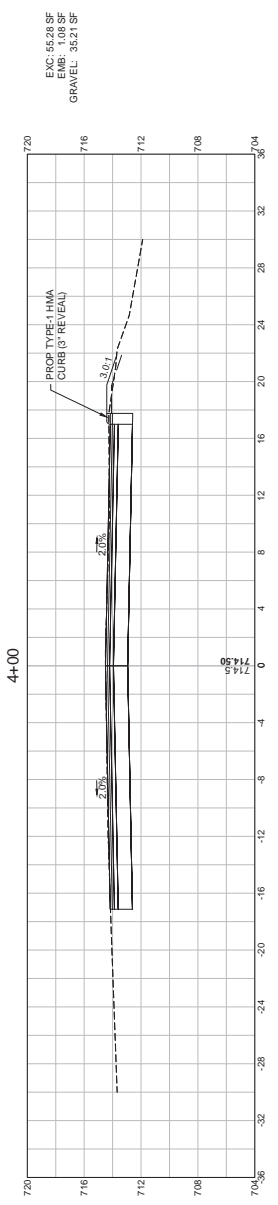
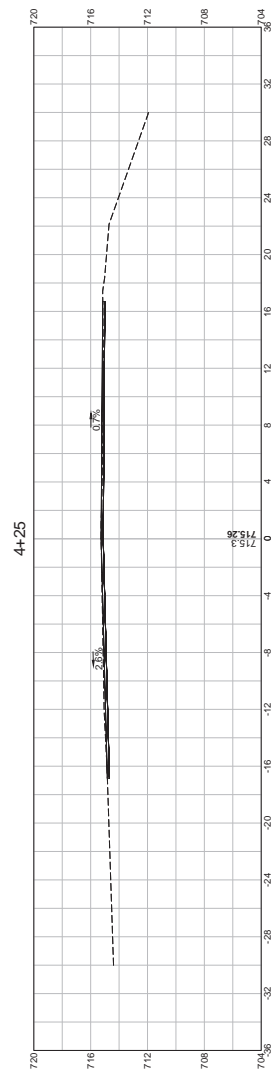
EXC: 74.58 SF  
EMB: 4.28 SF  
GRAVEL: 59.62 SF





**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

|                         |                    |                      |              |
|-------------------------|--------------------|----------------------|--------------|
| DATE                    | FED. AID PROJ. NO. | SHEET NO.            | TOTAL SHEETS |
| 04/23/23                | MA                 | 31                   | 30           |
| PROJECT FILE NO. 609179 |                    | CROSS SECTIONS ST 31 |              |

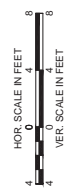
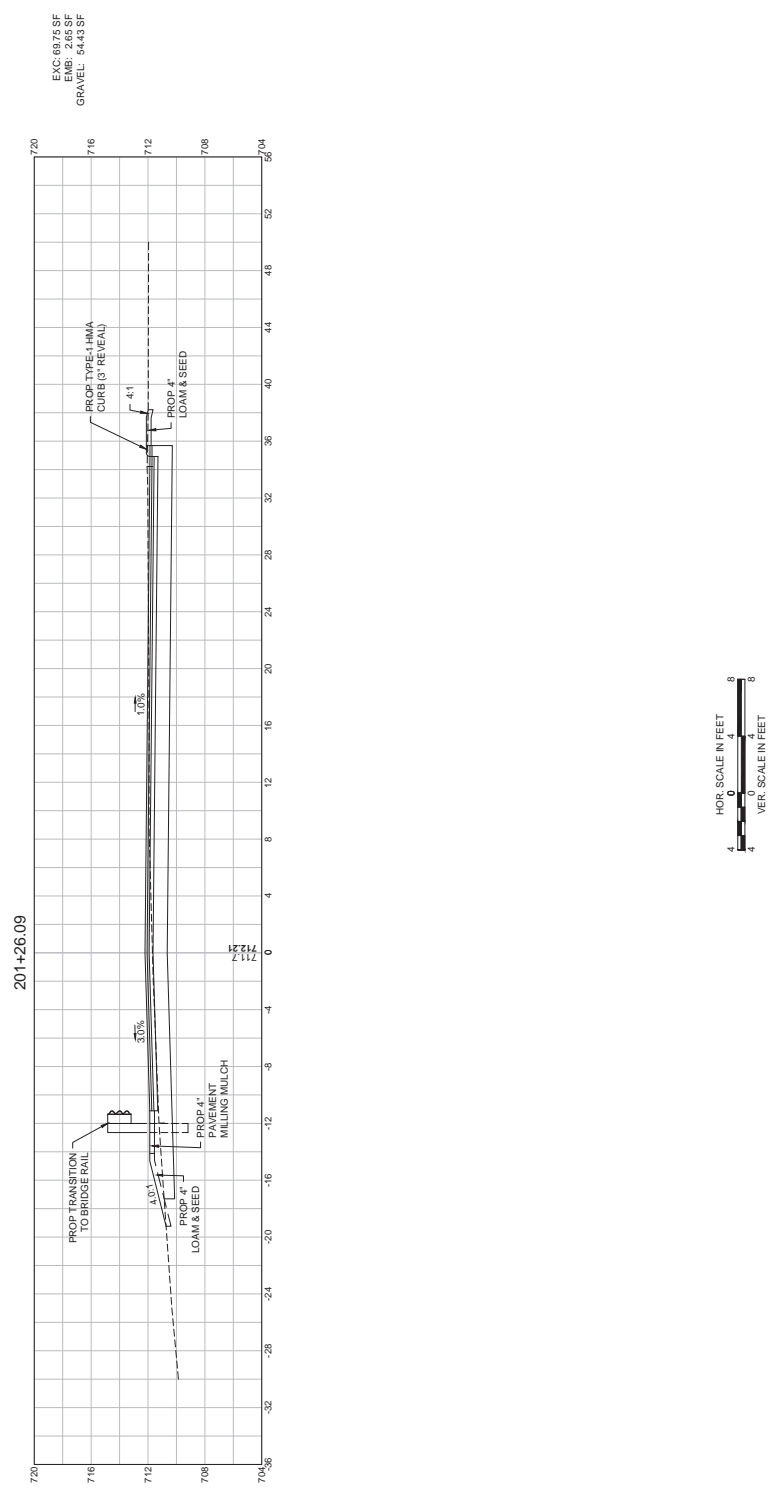




**SPENCER**  
**ST 31 (NORTH SPENCER ROAD)**

|                  |                    |             |
|------------------|--------------------|-------------|
| DATE             | FED. AID PROJ. NO. | SHEET TOTAL |
| NO.              | NO.                | NO.         |
| NO.              | NO.                | NO.         |
| PROJECT FILE NO. | 609179             |             |

**CROSS SECTIONS HASTING ROAD**



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DOCUMENT A00872

**NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM  
OF THE MASSACHUSETTS DIVISION OF FISHERIES & WILDLIFE**

**MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)**

**DETERMINATION**

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MASSWILDLIFE

## DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581

p: (508) 389-6300 | f: (508) 389-7890

[MASS.GOV/MASSWILDLIFE](https://www.mass.gov/masswildlife)

May 05, 2023

David Paulson  
MassDOT Highway Division  
10 Park Plaza, Room 4260  
Boston, Massachusetts 02116

RE: Project Location: North Spencer Road (Route 31)  
Project Description: MassDOT #609179 Bridge replacement, S-23-012  
**DEP Wetlands File No.:** -  
**NHESP File No.:** 23-1147  
**Heritage Hub Form ID:** RC-55053

Dear Applicant:

Thank you for submitting the MESA Project Review Checklist, site plans and other required materials to the Natural Heritage and Endangered Species Program of the MA Division of Fisheries & Wildlife (the "Division") for review pursuant to the Massachusetts Endangered Species Act (MESA) (MGL c.131A) and its implementing regulations (321 CMR 10.00).

Based on a review of the information that was provided and the information that is currently contained in our database, the Division has determined that this project, as currently proposed, **will not result in a prohibited Take of state-listed rare species provided the mussel protection measures are implemented as described in the filing.** This determination is a final decision of the Division of Fisheries & Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or any additional work beyond that shown on the site plans may require an additional filing with the Division pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project. This determination is valid for five (5) years from the date of issuance, thereafter, the Applicant must refile for any additional work.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Melany Cheeseman, Endangered Species Review Assistant, at [Melany.Cheeseman@mass.gov](mailto:Melany.Cheeseman@mass.gov), (508) 389-6357.

---

MASSWILDLIFE

Sincerely,

A handwritten signature in black ink, reading "Everose Schlüter". The signature is written in a cursive style with a large initial 'E' and a long, sweeping underline.

Everose Schlüter, Ph.D.  
Assistant Director

cc:



DOCUMENT A00875

**POLICY DIRECTIVE P-22-001  
AND  
POLICY DIRECTIVE P-22-002**

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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.).

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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

SPENCER

For: **Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River**

COMMONWEALTH OF MASSACHUSETTS

LOCATION

The work referred to herein is in the Town of Spencer 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:

**Bridge S-23-012**

**North Spencer Road**

**Beginning – Station 0+30.00 +/-**

**Ending – Station 4+85.00 +/-**

**Hastings Road**

**Beginning – Station 200+15.00 +/-**

**Ending – Station 201+60.00**

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 **560 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 15<sup>th</sup>.

The Work of this project is described by the following Items and quantities.

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| Project # 609179  |          | Contract # 125779   |             |             |
|---|----------|---|-------------|-------------|
| Location : SPENCER  |          |   |             |             |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |   |             |             |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS  | UNIT PRICE  | AMOUNT      |
| 100.  | 1        | SCHEDULE OF OPERATIONS - FIXED PRICE \$13500<br><br>AT Thirteen Thousand Five Hundred Dollars<br>LUMP SUM | \$13,500.00 | \$13,500.00 |
| 101.  | 0.3      | CLEARING AND GRUBBING<br><br>AT _____<br>PER ACRE   |             |             |
| 102.1   | 565      | TREE TRIMMING<br><br>AT _____<br>PER FOOT   |             |             |
| 102.511   | 5        | TREE PROTECTION – ARMORING & PRUNING<br><br>AT _____<br>EACH  |             |             |
| 114.1   | 1        | DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. S-23-012<br><br>AT _____<br>LUMP SUM                           |             |             |
| 120.1   | 1,595    | UNCLASSIFIED EXCAVATION<br><br>AT _____<br>PER CUBIC YARD   |             |             |
| 127.  | 400      | CONCRETE EXCAVATION<br><br>AT _____<br>PER CUBIC YARD   |             |             |
| 140.  | 840      | BRIDGE EXCAVATION<br><br>AT _____<br>PER CUBIC YARD   |             |             |
| 144.  | 85       | CLASS B ROCK EXCAVATION<br><br>AT _____<br>PER CUBIC YARD   |             |             |

| Project # 609179  |          | Contract # 125779  |            |        |
|---|----------|--|------------|--------|
| Location : SPENCER  |          |  |            |        |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |  |            |        |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS   | UNIT PRICE | AMOUNT |
| 150.  | 5        | ORDINARY BORROW<br><br>AT _____<br>PER CUBIC YARD                                    |            |        |
| 151.  | 800      | GRAVEL BORROW<br><br>AT _____<br>PER CUBIC YARD                                      |            |        |
| 151.1   | 40       | GRAVEL BORROW FOR BRIDGE FOUNDATION<br><br>AT _____<br>PER CUBIC YARD                |            |        |
| 151.2   | 560      | GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES<br><br>AT _____<br>PER CUBIC YARD |            |        |
| 156.1   | 235      | CRUSHED STONE FOR BRIDGE FOUNDATIONS<br><br>AT _____<br>PER TON                      |            |        |
| 156.5   | 45       | CRUSHED STONE FOR FILTER BLANKET<br><br>AT _____<br>PER CUBIC YARD                   |            |        |
| 170.  | 1,430    | FINE GRADING AND COMPACTING - SUBGRADE AREA<br><br>AT _____<br>PER SQUARE YARD       |            |        |
| 180.01  | 1        | ENVIRONMENTAL HEALTH AND SAFETY PROGRAM<br><br>AT _____<br>LUMP SUM                  |            |        |
| 180.02  | 8        | PERSONAL PROTECTION LEVEL C UPGRADE<br><br>AT _____<br>PER HOUR                      |            |        |

| Project # 609179  |          | Contract # 125779   |            |        |
|---|----------|---|------------|--------|
| Location : SPENCER  |          |   |            |        |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |   |            |        |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS                                  | UNIT PRICE | AMOUNT |
| 180.03  | 8        | LICENSED SITE PROFESSIONAL SERVICES<br><br>AT _____<br>PER HOUR               |            |        |
| 181.11  | 1,170    | DISPOSAL OF UNREGULATED SOIL<br><br>AT _____<br>PER TON                       |            |        |
| 181.12  | 15       | DISPOSAL OF REGULATED SOIL - IN-STATE FACILITY<br><br>AT _____<br>PER TON     |            |        |
| 181.13  | 15       | DISPOSAL OF REGULATED SOIL - OUT-OF-STATE FACILITY<br><br>AT _____<br>PER TON |            |        |
| 181.14  | 5        | DISPOSAL OF HAZARDOUS WASTE<br><br>AT _____<br>PER TON                        |            |        |
| 184.1   | 1        | DISPOSAL OF TREATED WOOD PRODUCTS<br><br>AT _____<br>PER TON                  |            |        |
| 415.2   | 255      | PAVEMENT FINE MILLING<br><br>AT _____<br>PER SQUARE YARD                      |            |        |
| 440.  | 1,600    | CALCIUM CHLORIDE FOR ROADWAY DUST CONTROL<br><br>AT _____<br>PER POUND        |            |        |
| 443.  | 6        | WATER FOR ROADWAY DUST CONTROL<br><br>AT _____<br>PER 1000 GALLONS            |            |        |

| Project # 609179  |          | Contract # 125779   |            |        |
|---|----------|---|------------|--------|
| Location : SPENCER  |          |   |            |        |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |   |            |        |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS  | UNIT PRICE | AMOUNT |
| 450.31  | 210      | SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC -12.5)<br><br>AT _____<br>PER TON                   |            |        |
| 450.42  | 350      | SUPERPAVE BASE COURSE - 37.5 (SBC - 37.5)<br><br>AT _____<br>PER TON                          |            |        |
| 450.601   | 166      | SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P)<br><br>AT _____<br>PER TON    |            |        |
| 450.701   | 25       | SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 POLYMER (SPC-B - 9.5 - P)<br><br>AT _____<br>PER TON |            |        |
| 452.  | 250      | ASPHALT EMULSION FOR TACK COAT<br><br>AT _____<br>PER GALLON                                  |            |        |
| 453.  | 185      | HMA JOINT ADHESIVE<br><br>AT _____<br>PER FOOT  |            |        |
| 505.  | 75       | GRANITE CURB TYPE VA5 - STRAIGHT<br><br>AT _____<br>PER FOOT                                  |            |        |
| 570.1   | 135      | HOT MIX ASPHALT CURB TYPE 1<br><br>AT _____<br>PER FOOT                                       |            |        |
| 620.13  | 60       | GUARDRAIL, TL-3 (SINGLE FACED)<br><br>AT _____<br>PER FOOT                                    |            |        |

| Project # 609179  |          | Contract # 125779   |            |        |
|---|----------|---|------------|--------|
| Location : SPENCER  |          |   |            |        |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |   |            |        |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS                                  | UNIT PRICE | AMOUNT |
| 627.93  | 4        | GUARDRAIL FLARED END TREATMENT, TL-3<br><br>AT _____<br>EACH                  |            |        |
| 628.24  | 3        | TRANSITION TO BRIDGE RAIL<br><br>AT _____<br>EACH                             |            |        |
| 628.26  | 1        | CURVED TRANSITION TO BRIDGE RAIL<br><br>AT _____<br>EACH                      |            |        |
| 628.305   | 2        | TEMPORARY IMPACT ATTENUATOR, NON-REDIRECTIVE,<br>TL-3<br><br>AT _____<br>EACH |            |        |
| 628.4   | 2        | TEMPORARY IMPACT ATTENUATOR, REMOVED AND<br>RESET<br><br>AT _____<br>EACH     |            |        |
| 630.2   | 185      | HIGHWAY GUARD REMOVED AND DISCARDED<br><br>AT _____<br>PER FOOT               |            |        |
| 657.  | 220      | TEMPORARY FENCE<br><br>AT _____<br>PER FOOT                                   |            |        |
| 657.5   | 220      | TEMPORARY FENCE REMOVED AND RESET<br><br>AT _____<br>PER FOOT                 |            |        |
| 697.2   | 60       | FLOATING SILT FENCE<br><br>AT _____<br>PER FOOT                               |            |        |

| Project # 609179  |          | Contract # 125779  |            |        |
|---|----------|--|------------|--------|
| Location : SPENCER  |          |  |            |        |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |  |            |        |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS                                       | UNIT PRICE | AMOUNT |
| 698.3   | 190      | GEOTEXTILE FABRIC FOR SEPARATION<br><br>AT _____<br>PER SQUARE YARD                |            |        |
| 698.4   | 130      | GEOTEXTILE FABRIC FOR PERMANENT EROSION CONTROL<br><br>AT _____<br>PER SQUARE YARD |            |        |
| 740.  | 22       | ENGINEERS FIELD OFFICE AND EQUIPMENT (TYPE A)<br><br>AT _____<br>PER MONTH         |            |        |
| 748.  | 1        | MOBILIZATION<br><br>AT _____<br>LUMP SUM   |            |        |
| 751.  | 350      | LOAM FOR ROADSIDES<br><br>AT _____<br>PER CUBIC YARD                               |            |        |
| 751.765   | 3        | COMPOST AND SEED OVER MODIFIED ROCK<br><br>AT _____<br>PER CUBIC YARD              |            |        |
| 765.21  | 11       | ANNUAL COVER CROP FOR NATIVE SEEDING<br><br>AT _____<br>PER POUND                  |            |        |
| 765.451   | 4        | PART SHADE ROADSIDE MIX<br><br>AT _____<br>PER POUND                               |            |        |
| 765.635   | 1,210    | NATIVE SEEDING AND ESTABLISHMENT<br><br>AT _____<br>PER SQUARE YARD                |            |        |



| Project # 609179  |          | Contract # 125779  |            |        |
|---|----------|--|------------|--------|
| Location : SPENCER  |          |  |            |        |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |  |            |        |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS   | UNIT PRICE | AMOUNT |
| 767.121   | 755      | SEDIMENT CONTROL BARRIER<br><br>AT _____<br>PER FOOT   |            |        |
| 769.  | 400      | PAVEMENT MILLING MULCH UNDER GUARD RAIL<br><br>AT _____<br>PER FOOT                              |            |        |
| 799.  | 1        | MUSSEL TRANSLOCATION<br><br>AT _____<br>LUMP SUM   |            |        |
| 816.811   | 450      | TEMPORARY TRAFFIC CONTROL SIGNAL<br><br>AT _____<br>PER DAY                                      |            |        |
| 828.06  | 3        | GROUND MOUNTED SIGN PANEL - REMOVED AND STACKED<br><br>AT _____<br>EACH                          |            |        |
| 832.  | 8        | WARNING-REGULATORY AND ROUTE MARKER - ALUMINUM PANEL (TYPE A)<br><br>AT _____<br>PER SQUARE FOOT |            |        |
| 847.1   | 3        | SIGN SUP (N/GUIDE)+RTE MKR W/1 BRKWAY POST ASSEMBLY - STEEL<br><br>AT _____<br>EACH              |            |        |
| 852.  | 600      | SAFETY SIGNING FOR TRAFFIC MANAGEMENT<br><br>AT _____<br>PER SQUARE FOOT                         |            |        |
| 853.1   | 2        | PORTABLE BREAKAWAY BARRICADE TYPE III<br><br>AT _____<br>EACH                                    |            |        |

| Project # 609179  |          | Contract # 125779   |            |        |
|---|----------|---|------------|--------|
| Location : SPENCER  |          |   |            |        |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |   |            |        |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS  | UNIT PRICE | AMOUNT |
| 853.21  | 230      | TEMPORARY BARRIER REMOVED AND RESET<br><br>AT _____<br>PER FOOT                           |            |        |
| 853.33  | 230      | TEMPORARY BARRIER - LIMITED DEFLECTION (TL-3)<br><br>AT _____<br>PER FOOT                 |            |        |
| 856.12  | 900      | PORTABLE CHANGEABLE MESSAGE SIGN<br><br>AT _____<br>PER DAY                               |            |        |
| 859.1   | 360      | REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING<br>WARNING LIGHTS<br><br>AT _____<br>PER DAY |            |        |
| 866.206   | 530      | 6 INCH REFLECTORIZED WHITE LINE (POLYUREA)<br>(RECESSED)<br><br>AT _____<br>PER FOOT      |            |        |
| 866.212   | 35       | 12 INCH REFLECTORIZED WHITE LINE (POLYUREA)<br>(RECESSED)<br><br>AT _____<br>PER FOOT     |            |        |
| 867.206   | 695      | 6 INCH REFLECTORIZED YELLOW LINE (POLYUREA)<br>(RECESSED)<br><br>AT _____<br>PER FOOT     |            |        |
| 874.  | 4        | STREET NAME SIGN<br><br>AT _____<br>EACH  |            |        |
| 874.41  | 1        | TRAFFIC SIGN REMOVED AND DISCARDED<br><br>AT _____<br>EACH                                |            |        |

| Project # 609179  |          | Contract # 125779   |            |        |
|---|----------|---|------------|--------|
| Location : SPENCER  |          |   |            |        |
| Description : Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River |          |   |            |        |
| ITEM #  | QUANTITY | ITEM WITH UNIT BID PRICE<br>WRITTEN IN WORDS  | UNIT PRICE | AMOUNT |
| 983.35  | 45       | STREAMBED MATERIAL REMOVED AND RELAID<br><br>AT _____<br>PER CUBIC YARD                 |            |        |
| 983.36  | 25       | NATURAL STREAMBED MATERIAL<br><br>AT _____<br>PER CUBIC YARD                            |            |        |
| 986.  | 160      | MODIFIED ROCKFILL<br><br>AT _____<br>PER TON  |            |        |
| 990.11  | 1        | TEMPORARY EXCAVATION SUPPORT - STRUCTURE NO. S-23-012 (CCL)<br><br>AT _____<br>LUMP SUM |            |        |
| 991.1   | 1        | CONTROL OF WATER - STRUCTURE NO. S-23-012<br><br>AT _____<br>LUMP SUM                   |            |        |
| 994.01  | 1        | TEMPORARY PROTECTIVE SHIELDING BRIDGE NO. S-23-012<br><br>AT _____<br>LUMP SUM          |            |        |
| 995.01  | 1        | BRIDGE STRUCTURE, BRIDGE NO. S-23-012 (CCL)<br><br>AT _____<br>LUMP SUM                 |            |        |
| <b>Total Qty:</b>   |          | 19,206.3  |            |        |

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DOCUMENT B00853

SCHEDULE OF PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES (DBES)

PRIME BIDDER: \_\_\_\_\_

DATE OF BID OPENING: \_\_\_\_\_ PROJECT NO.: 609179

FEDERAL AID PROJECT NO. HIP(BR)-003S(723)X

PROJECT LOCATION: SPENCER

| Name, Address, and Phone Number(s) of DBE | Name of Activity             | (a)†<br>DBE Contractor Activity Amount<br><i>Construction Work</i> | (b)<br>DBE Other Business Amount<br><i>Services, Supplies, Material</i> | (c)<br>Total amount eligible for credit under rules in Section 6 of Document 00719 - DBE Special Provisions |
|---|------------------------------|--|---|---|
|   |                              |  |   |   |
|   |                              |  |   |   |
|   |                              |  |   |   |
|   |                              |  |   |   |
| Total Bid Amount                          | TOTALS:                      | \$   | \$  | \$  |
| \$  | DBE Percentage of Total Bid: | %  | %   | %   |

†Column (a) must be at least one-half of the DBE participation goal. Attach additional sheets as necessary.

Is MassDOT Document B00855 (Joint Check Approval) being submitted for any of the above?  Yes  No  
 Not Known at This Time

Will any of the contractors listed above be using a third party (i.e. manufacturer) to deliver materials or perform any portion of work by a third party?  Yes  No

**CERTIFICATION:** I HEREBY DECLARE, TO THE BEST OF MY KNOWLEDGE, THAT I HAVE READ THE SPECIAL PROVISIONS FOR PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES - DOCUMENT 00719. BOTH THIS SCHEDULE AND THE RELEVANT AND ACCOMPANYING LETTER(S) OF INTENT ARE IN FULL COMPLIANCE WITH THE PROVISIONS OF, AND IN ACCORDANCE WITH, TITLE 49 CODE OF FEDERAL REGULATIONS, PART 26 (49 CFR Part 26).

SIGNATURE: \_\_\_\_\_ DATE \_\_\_\_\_

NAME AND TITLE (PRINT): \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_ TEL NO.: \_\_\_\_\_

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

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DOCUMENT B00854

DISADVANTAGED BUSINESS ENTERPRISES (DBE) PARTICIPATION  
LETTER OF INTENT

(To be completed by the DBE – Page 1 of 2)

TO: \_\_\_\_\_ (Prime Bidder)

FROM: \_\_\_\_\_ (DBE Firm)

RE: PROJECT NO.: 609179 FEDERAL AID PROJECT NO.: HIP(BR)-003S(723)X

PROJECT LOCATION: SPENCER

DATE OF BID OPENING: \_\_\_\_\_

I, \_\_\_\_\_, *Print Name* authorized signatory of the above-referenced DBE firm hereby declare:

1. My company is currently certified as a Disadvantaged Business Enterprise (DBE) by the Massachusetts Supplier Diversity Office (“SDO”), formerly known as the State Office of Minority and Women Business Assistance (SOMWBA), as a: (check all applicable, see Section 1 of the Special Provisions For Participation By Disadvantaged Business Enterprises, MassDOT Document 00719 additional guidance is available at Title 49, Code of Federal Regulations, Part 26.55 (49 CFR Part 26.55)):

- CONTRACTOR       REGULAR DEALER       BROKER
- MANUFACTURER       TRUCKING OPERATIONS       PROFESSIONAL SERVICES

2. My firm has the ability to manage, supervise and perform the activity described on page 2 of this Letter of Intent. If you are awarded the contract, my company intends to enter into a contract with your firm to perform the items of work or other activity described on the following sheet for the prices indicated.

3. There have been no changes affecting the ownership, control or independence of my company since my last certification review on \_\_\_\_\_, 20\_\_\_. If any such change is planned or occurs prior to my company's completion of this proposed work, I will give prior written notification to your firm and to the Massachusetts Department of Transportation (“MassDOT”) Office of Civil Rights and SDO.

4. I have read the MassDOT proposal for the Project which may be entitled “Project Contract Documents and Special Provisions” or the draft “Contract” which includes MassDOT Document 00719, and acknowledge that my company will comply with that document and the requirements of 49 CFR Part 26.

5. For the purpose of obtaining subcontractor approval from MassDOT, my firm will provide to you:

**A. The following construction work:**

- (i) a resume, stating the qualifications and experience, of the superintendent or foreperson who will supervise on site-work;
- (ii) a list of equipment owned or leased by my firm for use on this project; and
- (iii) a list of all projects (public or private) upon which my firm is currently performing, is committed to perform, or intends to make a commitment to perform. I shall also include, for each project: the name and telephone number of a contact person for the contracting authority, person, or organization; the dollar value of the work; a description of the work; and my firm's work schedule for the project.

**B. The following services, materials or supplies:**

- (i) a written agreement and invoices for the materials or supplies, and any other documents evidencing the terms of providing such items;
- (ii) information concerning brokers fees and commissions for providing services or materials; and
- (iii) a statement concerning whether my firm intends or will be required to use a joint check arrangement; and any other documents that may be required by MassDOT.

\_\_\_\_\_  
*DBE Company Authorized Signature*

Date \_\_\_\_\_

**DISADVANTAGED BUSINESS ENTERPRISES (DBE) PARTICIPATION  
LETTER OF INTENT**  
(To be completed by the DBE – Page 2 of 2)

DATE OF BID OPENING: \_\_\_\_\_

PROJECT NUMBER: 609179

FEDERAL AID PROJECT NUMBER: HIP(BR)-003S(723)X

PROJECT LOCATION: SPENCER

PRIME BIDDER: \_\_\_\_\_

DBE COMPANY NAME: \_\_\_\_\_

| <u>Item number</u><br>if applicable | <u>NAICS</u><br><u>Code</u> | <u>Description of Activity</u><br>with notations such as Services, or Brokerage, Installation Only,<br>Material Only, or Complete | <u>Quantity</u> | <u>Unit Price</u>    | <u>Amount</u> |
|-------------------------------------|-----------------------------|---|-----------------|----------------------|---------------|
|                                     |                             |   |                 |                      |               |
|                                     |                             |   |                 |                      |               |
|                                     |                             |   |                 |                      |               |
|                                     |                             |   |                 |                      |               |
|                                     |                             |   |                 |                      |               |
|                                     |                             |   |                 | <b>TOTAL AMOUNT:</b> |               |

*Please give full explanations, attach additional sheets if necessary.*

I HEREBY VERIFY THAT \_\_\_\_\_ WILL SOLELY  
(DBE company name)  
PERFORM THE WORK, OR PROVIDE THE SERVICES OR MATERIALS, AS DESCRIBED ABOVE.

DBE AUTHORIZED SIGNATURE: \_\_\_\_\_

NAME AND TITLE (PRINT): \_\_\_\_\_

TELEPHONE NUMBER: \_\_\_\_\_ FAX NUMBER: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

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

*Rev'd 9/20/19*



DOCUMENT B00855

DBE JOINT CHECK ARRANGEMENT APPROVAL FORM

(to be submitted by Prime Contractor)

Contract No: 125779 Project No. 609179 Federal Aid No.: HIP(BR)-003S(723)X

Location: Spencer Bid Opening Date:

Project Description: Bridge Replacement, S-23-012, North Spencer Road (Route 31) over the Seven Mile River

We have received the attached request for the use of a joint check arrangement from \_\_\_\_\_, a DBE on the above- referenced Contract and \_\_\_\_\_, a Material Supplier/Vendor for the subject Contract. The DBE has complied with the requirements of 49 CFR Part 26.55(c)(1). In particular, the DBE has:

- a written agreement with the material supplier/vendor;
• applied for credit with the subject material supplier and has supplied the vendor's response;
• shown that it will place all orders to the subject material supplier/vendor;
• made and retains all decision-making responsibilities concerning the materials; and
• provided a Joint Check Agreement that is acceptable to MassDOT;

As the Contractor for the Project, we agree to issue joint checks (made payable to the Material Supplier/Vendor and the DBE) for payment of sums due pursuant to invoices from the Supplier/Vendor and DBE.

Contractor:

Company Name

Signature
Duly Authorized

Printed Name

Date

Title

SubContractor:

Company Name

Signature -
Duly Authorized

Printed Name

Date

Title

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

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DOCUMENT B00856

JOINT VENTURE AFFIDAVIT  
(All Firms)

- All Information Requested By This Schedule Must Be Answered. Additional Sheets May Be Attached.
- If, there is any change in the information submitted, the Joint Venture parties must inform MassDOT Pre-Qualifications Office (and, if one of the companies is a DBE, the Director of Contract Compliance, Office of Civil Rights) *prior* to such change, in writing, either directly or through the Prime Contractor if the Joint Venture is a subcontractor.
- If the Joint Venture Entity will be the bidder on a prime Contract, it must bid and submit all required documents (insurance, worker’s compensation, bonds, etc.) in the name of the Joint Venture Entity.

**I. Name of Joint Venture:** \_\_\_\_\_  
 Type of Entity if applicable (Corp., LLC): \_\_\_\_\_ Filing State \_\_\_\_\_  
 Address of joint venture: \_\_\_\_\_  
 \_\_\_\_\_  
 Phone No(s) for JV Entity: \_\_\_\_\_ E-mail: \_\_\_\_\_  
 Contact Person(s) \_\_\_\_\_  
 Tax ID/EIN of Joint Venture: \_\_\_\_\_ Vendor Code: \_\_\_\_\_

**II. Identify each firm or party to the Joint Venture:**  
 Name of Firm: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone : \_\_\_\_\_ E-mail: \_\_\_\_\_  
 Contact person(s) \_\_\_\_\_  
 Name of Firm: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_  
 Contact Person(s) \_\_\_\_\_

**III. Describe the role(s) of the each party to the Joint Venture:**  
 \_\_\_\_\_  
 \_\_\_\_\_

**IV. Attach a copy of the Joint Venture Agreement.** The proposed Joint Venture Agreement should include specific details including, but not limited to: (1) the contributions of capital and equipment; (2) work items to be performed by each company’s forces, (3) work items to be performed under the supervision of any DBE Venturer; (4) the commitment of management, supervisory and operative personnel employed by the DBE to be dedicated to the performance of the Project; and (5) warranty, guaranty, and indemnification clauses.

**V. Attach any applicable Corporate or LLC Votes, Authorizations, etc.**

**VI. Ownership of the Joint Venture:**

A. What is the percentage(s) of each company’s ownership in the Joint Venture?

ownership percentage(s): \_\_\_\_\_

ownership percentage(s): \_\_\_\_\_

B. Specify percentages for each of the following (provide narrative descriptions and other detail as applicable):

1. Sharing of profit and loss: \_\_\_\_\_

2. Capital contributions:

(a) Dollar amounts of initial contribution: \_\_\_\_\_

(b) Dollar amounts of anticipated on-going contributions: \_\_\_\_\_

(c) Contributions of equipment (specify types, quality and quantities of equipment to be provided by each firm): \_\_\_\_\_

4. Other applicable ownership interests, including ownership options or other agreements, which restrict or limit ownership and/or control:

\_\_\_\_\_  
\_\_\_\_\_

5. Provide copies of all other written agreements between firms concerning bidding and operation of this Project or projects or contracts.

6. Identify all current contracts and contracts completed during the past two (2) years by either of the Joint Venture partners to this Joint Venture:

\_\_\_\_\_  
\_\_\_\_\_

**VII. Control of and Participation in the Joint Venture.** Identify by name and firm those individuals who are, or will be, responsible for and have the authority to engage in the following management functions and policy decisions. (Indicate any limitations to their authority such as dollar limits and co-signatory requirements.):

A. Joint Venture check signing:

\_\_\_\_\_  
\_\_\_\_\_

B. Authority to enter Contracts on behalf of the Joint Venture:

\_\_\_\_\_  
\_\_\_\_\_

C. Signing, co-signing and/or collateralizing loans:

\_\_\_\_\_  
\_\_\_\_\_

D. Acquisition of lines of credit:

\_\_\_\_\_

\_\_\_\_\_

E. Acquisition and indemnification of payment and performance bonds:

\_\_\_\_\_

\_\_\_\_\_

F. Negotiating and signing labor agreements:

\_\_\_\_\_

\_\_\_\_\_

G. Management of contract performance. (*Identify by name and firm only*):

1. Supervision of field operations: \_\_\_\_\_
2. Major purchases: \_\_\_\_\_
3. Estimating: \_\_\_\_\_
4. Engineering: \_\_\_\_\_

**VIII. Financial Controls of Joint Venture:**

A. Which firm and/or individual will be responsible for keeping the books of account?

\_\_\_\_\_

\_\_\_\_\_

B. Identify the "Managing Partner," if any, and describe the means and measure of their compensation:

\_\_\_\_\_

\_\_\_\_\_

C. What authority does each firm have to commit or obligate the other to insurance and bonding companies, financing institutions, suppliers, subcontractors, and/or other parties participating in the performance of this Contract or the work of this Project?

\_\_\_\_\_

**IX. Personnel of Joint Venture:** State the approximate number of personnel (by trade) needed to perform the Joint Venture's work under this Contract. Indicate whether they will be employees of the majority firm, DBE firm, or the Joint Venture.

|                         | Firm 1<br>(number) | Firm 2<br>(number) | Joint Venture<br>(number) |
|-------------------------|--------------------|--------------------|---------------------------|
| Trade                   |                    |                    |                           |
|                         |                    |                    |                           |
| Professional            |                    |                    |                           |
|                         |                    |                    |                           |
| Administrative/Clerical |                    |                    |                           |
|                         |                    |                    |                           |
| Unskilled Labor         |                    |                    |                           |
|                         |                    |                    |                           |

Will any personnel proposed for this Project be employees of the Joint Venture?: \_\_\_\_\_

If so, who: \_\_\_\_\_

A. Are any proposed Joint Venture employees currently employed by either firm?

Employed by Firm 1: \_\_\_\_\_ Employed by firm 2 \_\_\_\_\_

B. Identify by name and firm the individual who will be responsible for Joint Venture hiring: \_\_\_\_\_

\_\_\_\_\_

**X. Additional Information.** Please state any material facts and additional information pertinent to the control and structure of this Joint Venture.

\_\_\_\_\_  
\_\_\_\_\_

**XI. AFFIDAVIT OF JOINT VENTURE PARTIES.** The undersigned affirm that the foregoing statements and attached documents are correct and include all material information necessary to identify and explain the terms and operations of our Joint Venture and the intended participation of each firm in the undertaking. Further, the undersigned covenant and agree to provide to MassDOT current, complete and accurate information regarding actual Joint Venture work, payments, and any proposed changes to any provisions of the Joint Venture, or the nature, character of each party to the Joint Venture. We understand that any material misrepresentation will be grounds for terminating any Contract awarded and for initiating action under Federal or State laws concerning false statements.

\_\_\_\_\_  
Firm 1

\_\_\_\_\_  
Firm 2

\_\_\_\_\_  
Signature  
Duly Authorized

\_\_\_\_\_  
Signature  
Duly Authorized

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
Printed Name and Title

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

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