

COMMONWEALTH OF MASSACHUSETTS



CONTRACT DOCUMENTS AND SPECIAL PROVISIONS

PROPOSAL NO.	614101-133051
P.V. =	\$1,515,000.00
PLANS	NO

FOR

**Scheduled & Emergency Bridge Structural & Substructure Repairs
and Related Work at Various Locations along I-90**

in

DISTRICT 3

In accordance with the STANDARD SPECIFICATIONS
for HIGHWAYS and BRIDGES dated 2025

This Proposal to be opened and read:

TUESDAY, JANUARY 6, 2026 at 2:00 P.M.

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DOCUMENT 00010

TABLE OF CONTENTS

DOCUMENT 00010	
TABLE OF CONTENTS	00010-1 through 2
DOCUMENT 00102	
NOTICE TO CONTRACTORS	00102- 1 through 2
DOCUMENT 00210	
REQUIREMENTS OF MASSACHUSETTS GENERAL LAWS CHAPTER 30 SECTION 39R; CHAPTER 30, SECTION 39O	00210-1 through 4
DOCUMENT 00331	
LOCUS MAP	00331-1 through 2
DOCUMENT 00439	
CONTRACTOR PROJECT EVALUATION FORM	00439-1 through 2
DOCUMENT 00440	
SUBCONTRACTOR PROJECT EVALUATION FORM	00440-1 through 2
DOCUMENT 00710	
GENERAL CONTRACT PROVISIONS.....	00710-1 through 2
DOCUMENT 00715	
SUPPLEMENTAL SPECIFICATIONS	00715-1 through 10
DOCUMENT 00718	
SPECIAL PROVISION FOR PARTICIPATION BY MINORITY OR WOMEN'S BUSINESS ENTERPRISES AND SERVICE- DISABLED VETERAN- OWNED BUSINESS ENTERPRISES	00718-1 through 10
DOCUMENT 00761	
SPECIAL PROVISIONS FOR CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION	00761-1 through 4
DOCUMENT 00811	
MONTHLY PRICE ADJUSTMENT FOR HOT MIX ASPHALT (HMA) MIXTURES.....	00811-1 through 2
DOCUMENT 00812	
MONTHLY PRICE ADJUSTMENT FOR DIESEL FUEL AND GASOLINE	00812-1 through 2
DOCUMENT 00813	
PRICE ADJUSTMENT FOR STRUCTURAL STEEL AND REINFORCING STEEL	00813-1 through 4
DOCUMENT 00814	
PRICE ADJUSTMENT FOR PORTLAND CEMENT CONCRETE MIXES	00814-1 through 2
DOCUMENT 00820	
THE COMMONWEALTH OF MASSACHUSETTS SUPPLEMENTAL EQUAL EMPLOYMENT OPPORTUNITY, NON-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM	00820-1 through 6

TABLE OF CONTENTS (Continued)

DOCUMENT 00821	
ELECTRONIC REPORTING REQUIREMENTS	
CIVIL RIGHTS PROGRAM AND CERTIFIED PAYROLL	00821-1 through 2
DOCUMENT 00859	
CONTRACTOR/SUBCONTRACTOR CERTIFICATION FORM	00859-1 through 2
DOCUMENT 00860	
COMMONWEALTH OF MASSACHUSETTS PUBLIC EMPLOYMENT LAWS	00860-1 through 2
DOCUMENT 00861	
STATE PREVAILING WAGE RATES	00861-1 through 40
DOCUMENT A00801	
SPECIAL PROVISIONS	A00801-1 through 78
DOCUMENT A00803	
DRAWINGS AND SKETCHES	A00803-1 through 16
DOCUMENT A00811	
MBTA RAILROAD OPERATIONS DIRECTORATE.....	A00811-1 through 132
DOCUMENT A00812	
MBTA FLAGGING REQUEST FORM	A00812-1 through 4
DOCUMENT A00813	
MBTA SPECIAL INSTRUCTIONS, APRIL 1, 2003	A00813-1 through 14
DOCUMENT A00814	
MBTA SECTION 01568 CONSTRUCTION SAFETY	A00814-1 through 12
DOCUMENT A00815	
CSX RAILROAD REQUIRMENTS	A00815-1 through 24
DOCUMENT A00820	
REQUEST FOR RELEASE OF MASSDOT AUTOCAD FILES FORM.....	A00820-1 through 2
DOCUMENT A00875	
POLICY DIRECTIVE P-22-001 AND POLICY DIRECTIVE P-22-002	A00875-1 through 8
DOCUMENT A00881	
STRUCTURES INSPECTION FIELD REPORT	A00881-1 through 36
DOCUMENT B00420	
PROPOSAL.....	B00420-1 through 6
DOCUMENT B00842	
SCHEDULE OF PARTICIPATION BY MINORITY OR WOMEN BUSINESS	
ENTERPRISE (M/WBE)	B00842-1 through 2
DOCUMENT B00843	
MINORITY OR WOMENS BUSINESS ENTERPRISE PARTICIPATION	
LETTER OF INTENT	B00843-1 through 2
DOCUMENT B00846	
M/WBE OR SDVOBE JOINT CHECK ARRANGEMENT APPROVAL FORM.....	B00846-1 through 2
DOCUMENT B00847	
JOINT VENTURE AFFIDAVIT	B00847-1 through 4

*** END OF DOCUMENT ***

DOCUMENT 00102

**NOTICE TO CONTRACTORS**

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

TUESDAY, JANUARY 6, 2026 at 2:00 P.M. **

DISTRICT 3

**Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work
at Various Locations along I-90**

****Date Subject to Change**

PROJECT VALUE = \$1,515,000.00

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

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

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

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

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

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

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.

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

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

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 \$625.00 per ton, Portland cement \$425.13 per ton, diesel fuel \$2.996 per gallon, and gasoline \$2.411 per gallon, and Steel Base Price Index 381.4 MassDOT posts the **Price Adjustments** on their Highway Division’s website at

<https://www.mass.gov/massdot-contract-price-adjustments>

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

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

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

BY: Phillip Eng, Interim MassDOT Secretary
Jonathan L. Gulliver, Undersecretary and Highway Administrator
SATURDAY, NOVEMBER 22, 2025

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.

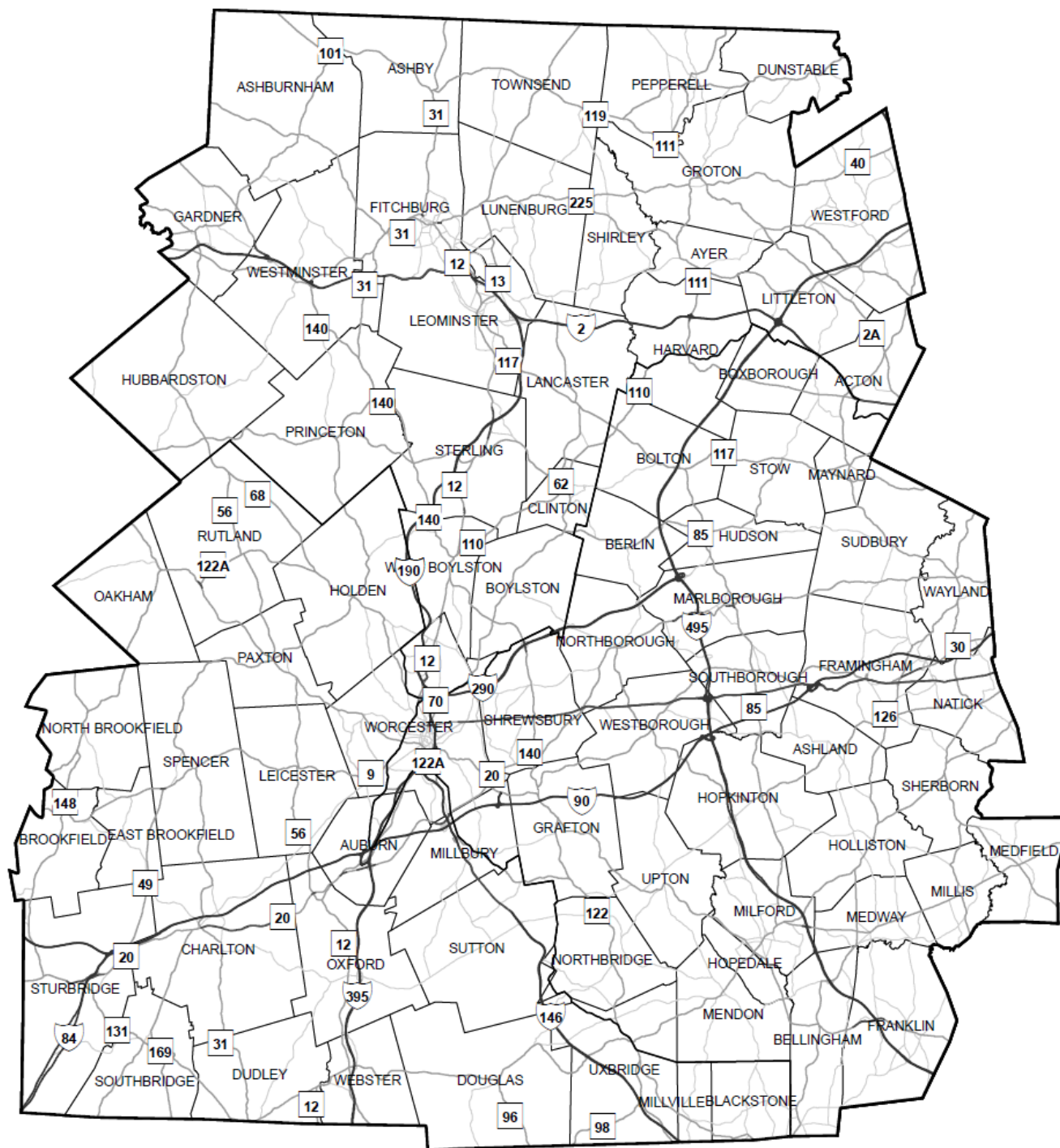
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DOCUMENT 00331

LOCUS MAP

DISTRICT 3

Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at Various Locations along I-90



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Final Report ☐Interim Report ☐**CONTRACTOR PROJECT EVALUATION FORM***For instructions on using this form, see Engineering Directive E-10-002, Dated 4/20/2010*

Date: _____

City/Town: _____

Contractor: _____

Project: _____

Address: _____

F.A. No. _____

Contract Number: _____

Bid Price: _____

Notice to Proceed: _____

Funds: State: _____ Fed Aid: _____

Current Contract Completion Date: _____

Date Work Started: _____

Date Work Completed*: _____

Contractor's Superintendent: _____

Division: (indicates class of work) Highway: _____ Bridge: _____ Maintenance: _____

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

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

*(Give explanation of items 1 through 9 on the following page in numerical order if overall rating is below 80%. Use additional sheets if necessary.)*_____
District Construction Engineer's Signature/Date_____
Resident Engineer's Signature/Date_____
Contractor's Signature Acknowledging Report/DateContractor 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: _____

[illegible]

WORK NOT COMPLETED WITHIN SPECIFIED TIME:

Revised: 04/28/17

*** END OF DOCUMENT ***



DOCUMENT 00440

Final Report ☐Interim Report ☐**SUBCONTRACTOR PROJECT EVALUATION FORM***For instructions on using this form, see Engineering Directive E-10-002, Dated 4/20/2010*

Date: _____

City/Town: _____

Subcontractor: _____

Project: _____

Address: _____

F.A. No.: _____

Contract Number: _____

Prime Contractor _____

Current Contract Completion Date: _____

Date Work Started: _____

Date Work Completed*: _____

Subcontractor's Superintendent: _____

Type of Work Performed by Subcontractor: _____

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

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

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

District Construction Engineer's Signature/Date _____

Resident Engineer's Signature/Date _____

Contractor Signature Acknowledging Report/Date _____

Subcontractor Signature Acknowledging Report/Date _____

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

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

Contractor's Comments: _____

DOCUMENT 00710
GENERAL CONTRACT PROVISIONS
Revised: 04-16-25

NOTICE OF AVAILABILITY

The STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES dated 2025, the SUPPLEMENTAL SPECIFICATIONS, the 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; the 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING and the CONSTRUCTION STANDARD DETAILS are available online at <https://www.mass.gov/massdot-highway-division-manuals-and-publications>

SPECIAL PROVISIONS FOR RIGHT-TO-KNOW ACT REQUIREMENTS

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

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

1. Deliver to the Department, prior to the start of any work under this contract, copies of MSDS for all MSL substances to be used, stored, processed or manufactured at the worksite by the Contractor.
2. Train employees of the Department, who may be exposed to MSL substances as a result of the Contractor's work under this contract, with regard to those specific substances in accordance with requirements of the Right-To-Know Act.
3. Observe all safety precautions recommended on the MSDS for any MSL substance to be used, stored, processed, or manufactured at the worksite by the Contractor.
4. Inform the Department in writing regarding specific protective equipment recommended in the MSDS for MSL substances to which employees of the Department may be exposed as a result of the Contractor's work under this contract.

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

ALTERNATIVE DISPUTE RESOLUTION

Forum, Choice of Law and Mediations:

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

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DOCUMENT 00715



SUPPLEMENTAL SPECIFICATIONS

SEPTEMBER 30, 2025

The 2025 *Standard Specifications for Highways and Bridges* are amended by the following modifications, additions and deletions. These Supplemental Specifications prevail over those published in the Standard Specifications.

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

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

DIVISION I

GENERAL REQUIREMENTS AND COVENANTS

SECTION 2.00: PROPOSAL REQUIREMENTS AND CONDITIONS

Subsection 2.09: Rejection of Proposals

Replace the first bullet in the third paragraph with the following:

- award of the contract would result in the Bidder exceeding the Aggregate Bonding Capacity or the Single Bonding Capacity established by its Surety Company, or the Bidder's Proposal exceeds its Single Contract Limit, or the Bidder was not prequalified in the specified class of work on or before the time of bid opening; or

SECTION 3.00: AWARD AND EXECUTION OF THE CONTRACT

Subsection 3.02: Award of Contract

Replace the third paragraph with the following:

The successful bidder will be notified by mail or otherwise that their bid has been accepted and that they have been awarded the Contract.

SECTION 7.00: LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Subsection 7.01: Laws to be Observed

In paragraph 701.G Buy America Provisions change Federally-aid to Federal-aid.

Subsection 7.05: Insurance Requirements

Change the title of paragraph A to Workers' Compensation Insurance

Subsection 7.22: Labor, Lodging, Board, Maximum Hours of Employment, Weekly Payment, Keeping of Payroll Records.

Replace this subsection with the following;

Subsection 7.22: Labor, Lodging, Board; Maximum Hours of Employment; Minimum Wage Rates; Payment of Wages; Keeping of Payroll Records

Every employee in public work shall lodge, board and trade where and with whom he elects; and no person or their agents or employees under contract with the commonwealth, a county, city or town, or with a department, board, commission or officer acting therefor, for the doing of public work shall directly or indirectly require, as a condition of employment therein, that the employee shall lodge, board or trade at a particular place or with a particular person. This section shall be made a part of the contract for such employment. (M.G.L. c. 149, § 25).

Every contract, except for the purchase of material or supplies, involving the employment of laborers, workers, mechanics, foremen or inspectors, to which the commonwealth or any county or any town, subject to section thirty, is a party, shall contain a stipulation that no laborer, worker, mechanic, foreman or inspector working within the commonwealth, in the employ of the contractor, sub-contractor or other person doing or contracting to do the whole or a part of the work contemplated by the contract, shall be required or permitted to work more than eight hours in any one day or more than forty-eight hours in any one week, or more than six days in any one week, except in cases of emergency, or, in case any town subject to section thirty-one is a party to such a contract, more than eight hours in any one day, except as aforesaid; provided, that in contracts entered into by the department of highways [a predecessor agency to MassDOT] for the construction or reconstruction of highways there may be inserted in said stipulation a provision that said department, or any contractor or sub-contractor for said department, may employ laborers, workers, mechanics, foreman and inspectors for more than eight hours in any one day in such construction or reconstruction when, in the opinion of the commissioner [currently defined in M.G.L. c. 149, § 1 as the director of the Department of Labor Standards], public necessity so requires. Every such contract not containing the aforesaid stipulation shall be null and void. (M.G.L. c. 149, § 34).

Attention of Bidders is called to M.G.L. c. 149, § 26-27H (the Prevailing Wage Law), requiring that the rate per hour of the wages paid to mechanics and apprentices, teamsters, chauffeurs and laborers in the construction of public works shall not be less than the rate or rates of wages to be determined by the director of the department of labor standards, and M.G.L. c. 149, § 148 requiring the weekly or bi-weekly payment of employees.

The Contractor shall furnish certified copies of any or all payrolls for the Contract, showing the name, address, and occupational classification of each employee on said works, and the hours worked by, and the wages paid to each such employee. Such payroll shall also include the rates paid for rented trucks or rental equipment of any kind used on the work. This requirement shall also apply to the work of any Subcontractor, having a Subcontract for any of the work performed on the project. Such records shall be kept in such manner as the Director of Labor Standards shall prescribe, and shall be open to inspection by the Engineer or any authorized representative of the Department of Labor Standards at any reasonable time and as often as may be necessary.

SECTION 8.00: PROSECUTION AND PROGRESS

Subsection 8.01: Subletting or Assignment of Contract

In the first bullet of the third paragraph replace the title of Subsection 7.22 Labor, Lodging, Board; Maximum Hours of Employment; Minimum Wage Rates; Payment of Wages; Keeping of Payroll Records

SECTION 9.00: MEASUREMENT AND PAYMENT

Subsection 9.03: Payment for Extra Work

Replace 903.B, first paragraph, numbers (2) and (3) with the following.

- (2) Plus 13 percent of direct labor, for the estimated costs of Federal Insurance Contribution Act (FICA) including Medicare; Federal Unemployment Tax Act (FUTA); State Unemployment Tax Act (SUTA), which includes Unemployment Insurance, the Workforce Training Fund Program,-Employer Medical Assistance Contribution, and COVID-19 Recovery Assessment; Earned Sick Time (EST) Law (940 CMR 33.00); and Paid Family and Medical Leave (PFML) Act (458 CMR 2.00); or, as an alternative to the above 13 percent, the Contractor may elect to use actual rates for FICA, FUTA, SUTA, EST and PFML provided the actual rates are supported with verifiable documentation and shall be subject to review by MassDOT Audit Operations.
- (3) Plus the estimated cost of Workers' Compensation and Liability Insurance, Health, Welfare and Pension benefits, and such additional fringe benefits which the Contractor is required to pay as a result of Union Labor Agreements and/or is required by authorized governmental agencies;

In 903.B, second paragraph, number (3), replace the word "Workmen's" with "Workers".

DIVISION II

CONSTRUCTION DETAILS

SECTION 300: WATER SYSTEMS

SUBSECTION 301: WATER SYSTEMS

Subsection 301.60G: Laying Pipe

Revise the third paragraph to read as follows:

Pipe sections shall be laid with the bell on the upgrade end. Before laying the pipe, the outside of the spigot and the inside of the bell shall be wire brushed and wiped clean and dry.

Subsection 301.80: Method of Measurement

Delete the words cast iron in the first paragraph.

Replace the second paragraph with the following;

Fittings, consisting of bends, tees, caps, wyes, sleeves, reducers, increasers, blow-off fittings and other special fittings, apply only when new materials are necessary and which are not specifically provided for under other items in the Proposal. Fittings other than new will not be paid separately but only under the applicable pipe items. When new fittings are measured separately for payment, the length of pipe occupied by the fittings will not be measured for payment.

SECTION 700: INCIDENTAL WORK

SUBSECTION 715: RURAL MAIL BOXES REMOVED AND RESET

Subsection 715: Rural Mail Boxes Removed and Reset

Change the words mail box and mail boxes to the word mailbox or mailboxes where encountered in the title, and all subsections.

SECTION 800: TRAFFIC CONTROL DEVICES

SUBSECTION 850: TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE OPERATIONS

Subsection 850.29: Temporary Barrier and Temporary Barrier Removed and Reset

Delete this subsection.

Subsection 850.49: Temporary Barrier

Delete this subsection.

Subsection 850.69: Temporary Barrier and Temporary Barrier Removed and Reset

Delete this subsection.

Subsection 850.80: Method of Measurement

Delete the fifth paragraph from the end of this subsection.

Subsection 850.81: Basis of Payment

Delete the sixth and seventh paragraphs from the end of this subsection.

SUBSECTION 853: TEMPORARY BARRIER

Subsection 853.: Temporary Barrier

Add this new subsection:

DESCRIPTION

853.20: General

Work under this Subsection consists of furnishing, placing, adjusting, resetting, maintaining, and removing temporary barrier.

MATERIALS

853.40: General

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

Material	Section
Precast, Prestressed, and Prefabricated Concrete Products	M4.09.0
Temporary Barrier	M10.16.0
Limited Deflection Temporary Barrier	M10.16.1
Delineators for Temporary Barrier	M10.16.2

The Contractor shall supply a temporary barrier system that meets or exceeds the Test Level (TL) designated in the description of the bid item.

If the Contractor uses a proprietary temporary barrier system, it shall be listed on the QTCE.

Temporary barrier segments that appear to be damaged or in otherwise unsuitable condition may be rejected or ordered to be replaced by the Engineer at no additional cost.

853.41: Deflection

The deflection of a temporary barrier system is defined as the measured deflection, permanent and/or dynamic, during MASH Test Designation 2-11 (for TL-2) or Test Designation 3-11 (for TL-3).

The Contractor shall supply a temporary barrier system that is equal to or less than the maximum allowable deflection (permanent and/or dynamic) for each run of temporary barrier, as shown in the Plans or stated in the Special Provisions. If no distinction between permanent and temporary deflection is shown in the plans or Special Provisions, then dynamic deflection shall govern.

853.42: Precast Concrete Barriers

Precast Concrete Barriers used as temporary barriers shall be fabricated in accordance with M4.09.0: Precast, Prestressed, and Prefabricated Concrete Products. The Contractor shall submit a Certificate of Compliance (CoC) attesting to meeting this requirement.

853.43: Delineation

Delineators installed at 20-ft intervals throughout the entire barrier run shall be included. The delineators shall conform to M10.16.2: Delineators for Temporary Barrier. Delineators that may act as a washer on a bolted connection shall not be used unless specifically allowed by the barrier manufacturer. Delineators that are damaged, are no longer reflective, or go missing while temporary barrier is deployed shall be replaced in kind by the Contractor.

Delineators may be top or side-mounted to the barrier and oriented in a manner to maximize reflectivity to approaching traffic.

Temporary barrier placed on the right side of the travel way, or top-mounted and separating two or more lanes traveling in the same direction, shall use white delineators. Temporary barrier placed on the left side of the travel way shall use amber or yellow delineators; if separating two-way traffic and top-mounted, the delineator shall be double-sided.

853.44: Anchored Barrier

Temporary barrier systems that include an anchor system in order to meet performance requirements of the contract and/or meet MASH testing requirements may be accepted for use at the discretion of the Department.

Barrier that utilizes an anchor system shall use the same pattern, placement, and material of anchors that was used in MASH crash testing.

853.45: Shop Drawings

Within 30 days of the Notice to Proceed, the Contractor shall provide Shop Drawings showing the proposed temporary barrier system and confirming that it conforms to 853.40: General and will meet the allowable deflection requirements as described in 853.41: Deflection.

If anchors are proposed, the means, methods, pattern, placement, and materials for anchoring and subsequent pavement and/or deck repairs following removal of the temporary barrier system shall be included in the Shop Drawing submittal. If the use of an anchor system is rejected by the Department, the Contractor shall select an unanchored system that meets or exceeds the contract specified performance requirements, at no additional cost.

Shop Drawings for proprietary barrier systems shall include manufacturer's instructions for installation.

CONSTRUCTION METHODS**853.60: General**

A Traffic Management Plan approved by the Department is required prior to the installation of the temporary barrier system.

The Contractor shall install temporary barrier systems in accordance with the Plans.

Barrier ends shall not be exposed to approaching traffic during installation. Crashworthy shielding or attenuation shall be provided at all times.

Proprietary temporary barrier systems shall be installed per the manufacturer's instructions.

The Contractor shall not place any breaks in the temporary barrier system that will result in sections that are shorter than the tested minimum length-of-need (LON) under MASH Test 2-11 (for TL-2) or 3-11 (for TL-3). Exceptions shall be allowed for gate systems or changeable length segments placed over expansion joints, if those barrier segment types have been determined to be crashworthy per MASH.

Temporary barrier shall not be placed on unpaved surfaces, unless otherwise shown in the Plans.

The Contractor shall not store materials, vehicles, or other equipment within the measured dynamic deflection envelope, as defined in 853.41: Deflection.

853.61: Temporary Barrier Removed and Reset

Temporary Barrier Removed and Reset consists of relocating a string of temporary barrier from one alignment to another to support the sequence and phasing of construction, as shown in the Plans.

Temporary Barrier Removed and Reset does not include moving all or a portion of the temporary barrier system to gain access to a work area, for the convenience of the Contractor, or to realign units that have moved due to construction activities or a traffic incident.

853.62: Quality Control Inspection

After temporary barrier installation is completed, the Contractor shall perform a Quality Control (QC) Inspection in the presence of the Engineer. QC Inspection activities shall include, but are not limited to the following reviews:

- Installation location per the approved Plans.
- Alignment and connection mechanism between adjacent barrier segments.
- Alignment and connection mechanism between barrier segment and attenuator, if present.
- Anchor system installation, if present.

For proprietary barrier systems, the QC Inspection shall also include any manufacturer-specific inspection details or criteria found in the installation instructions.

Work behind the barrier shall not commence until the QC Inspection has been accepted by the Engineer.

COMPENSATION

853.80: Method of Measurement

Temporary Barrier will be measured by the foot installed, in place.

Temporary Barrier Removed and Reset will be measured by the foot removed and reset.

853.81: Basis of Payment

Temporary Barrier will be paid for at the contract unit price per foot which shall provide full compensation for fabrication, storage, transport, furnishment, installation, delineation, alignment, maintenance, repair, and final removal of the temporary barrier.

Temporary Barrier Removed and Reset will be paid for at the contract unit price per foot which shall provide full compensation for removing, relocating, transporting, and installing new anchorage (if used). If more than one accepted temporary barrier system is approved for use in a single contract, the unit cost for Temporary Barrier Removed and Reset shall not differ among systems.

All costs associated with fabrication, installation, and maintenance of temporary barrier delineators shall be considered incidental to the cost of the item.

All costs associated with Shop Drawings and COCs shall be considered incidental to the item.

All costs associated with patching or repairing the road surface or bridge deck due to the installation and removal of temporary barrier and/or anchors for a temporary barrier system shall be considered incidental to the cost of the item.

853.82: Payment Items

Item number	Description	Unit
853.2	Temporary Barrier (TL-2)	Foot
853.21	Temporary Barrier Removed and Reset	Foot
853.23	Temporary Barrier (TL-3)	Foot
853.33	Temporary Barrier – Limited Deflection (TL-3)	Foot

SECTION 900: STRUCTURES

SUBSECTION 902: ULTRA HIGH PERFORMANCE CONCRETE

Subsection 902.32: Mockup

In Table 902.32-1 change the Link Slab width to 2 ft – 0 in. and change the Joint Header width to 0 ft – 6 in. .

Subsection 902.32: - 902.38

Renumber section 902.32 Surface Preparation to 902.33 Surface Preparation and renumber section 902.33 through 902.38 to 902.34 through 902.39.

DIVISION III

MATERIALS SPECIFICATIONS

SECTION M2: AGGREGATES AND RELATED MATERIALS

Subsection M2.01.0 Crushed Stone

Replace the fourth paragraph and the associated asterisk notes with the following;

The crushed stone shall have a maximum 45% wear as determined by the Los Angeles Abrasion Test (AASHTO T 96)

SECTION M5: PIPE, CULVERT SECTIONS AND CONDUIT

Subsection M5.01.0 Joint Materials for Pipe

Replace this subsection with the following;

- Jute or oakum furnished for use in pipe joints shall be of an accepted grade approved for common usage.
- Mortar shall conform to the requirements of M4.04.0: Cementitious Grout, Mortar and Concrete Products
- Standard couplers as approved by the manufacturer shall be used to join corrugated metal pipe
- Rubber ring or plastic gaskets for concrete pipe joints, or manholes section joints shall be of tough, flexible, chemical-resistant material, and of such size and shape as to ensure satisfactory pipe joints when incorporated in the work and shall conform to AWWA C153.
- Rubber gasket joints for ductile iron pipe shall be Styrene-Butadiene Rubber (SBR), Ethylene Propylene Diene Monomer (EPDM) or Nitrile and conform to AWWA C111

Subsection M5.05.03.B Gate Valves

Replace this subsection with the following;

Gate valves shall conform to the requirements of AWWA Standard C500 and/or to the type used by the municipality as specified in the Special Provisions.

SECTION M7: PAINTS, PROTECTIVE COATINGS AND PAVEMENT MARKINGS

Subsection M7.01.04 Fast Drying White and Yellow Waterborne Traffic Paint

Replace the subsection with the following;

Approved waterborne traffic paint shall be tested in accordance with AASHTO M 348 and be listed on the QCML. The dry paint film shall be under the Toxicity Characteristic Leaching Procedure (TCLP) limits for all contaminants listed in 40 CFR 261.24. The markings shall be installed using reflective glass beads meeting the requirements of M7.01.07. For waterborne yellow paint use Organic Yellow No. 65 or No. 75 pigment.

SECTION M9: MISCELLANEOUS MATERIALS

Subsection M9.12.0 Reflectors for Barriers

Delete this subsection.

SECTION M10: TRAFFIC CONTROL DEVICES

Subsection M10.16.0: Temporary Barrier

Subsection M10.16.1: Limited Deflection Temporary Barrier

Subsection M10.16.2: Delineators for Temporary Barrier

Add these new subsections.

DOCUMENT 00718

SPECIAL PROVISION FOR PARTICIPATION BY MINORITY OR WOMEN'S BUSINESS ENTERPRISES
AND SERVICE- DISABLED VETERAN- OWNED BUSINESS ENTERPRISES(Implementing Chapter 102, Section 24 and
Chapter 273, Section 124, of the Acts of 1994 and Chapter 56, Sections 1 to 5 of the Acts of 2010
and subsequent Acts)

Revised: September 27, 2021

I. PARTICIPATION

M/WBE PARTICIPATION GOAL

On this Contract, the Massachusetts Department of Transportation (MassDOT) has established a goal for participation by Minority or Women Business Enterprise(s) (M/WBE). One half of the goal shall be met in the form of contractor activity. This goal shall remain in effect throughout the life of the Contract.

☒ Design-Bid-Build Projects: M/WBE Participation Goal 0 %
(One half of this goal shall be met in the form of Subcontractor construction activity)

☐ Design-Build Projects: M/WBE Design Participation Goal % and M/WBE
Construction Participation Goal %
*(One half of the Construction Goal shall be met in the form of Subcontractor
construction activity)*

SDVOBE PARTICIPATION BENCHMARK

On this Contract, the Massachusetts Department of Transportation (MassDOT) has established a goal for participation by Service- Disabled Veteran- Owned Business Enterprise(s) (SDVOBE). This goal shall remain in effect throughout the life of the Contract.

☐ Design-Bid-Build Projects: SDVOBE Participation Goal %

☐ Design-Build Projects: SDVOBE Design Participation Goal % and SDVOBE
Construction Participation Goal %

II. POLICY

It is the policy of the MassDOT that Minority, Women Business Enterprises (M/WBEs) and Service- Disabled Veteran- Owned Business Enterprises (SDVOBEs) have equal opportunity to receive and participate in the performance of its state funded Contracts.

III. M/WBE and SDVOBE OBLIGATION

The Contractor agrees to take all necessary and reasonable steps to ensure that MBE, WBE, and SDVOBEs have the maximum opportunity to compete for, and to perform, Department Contracts.

IV. FAILURE TO COMPLY WITH M/WBE OR SDVOBE REQUIREMENTS

All Contractors and Subcontractors are hereby advised that failure to carry out the requirements of these Provisions constitutes a breach of Contract which may result in termination of the Contract, a determination that the Contractor or Subcontractor be barred from bidding on Department Contracts for up to three (3) years, or any other remedy as the Department may impose under Section XIV of these Special Provisions.

V. REQUIRED SUBCONTRACT PROVISIONS

The Prime Contractor shall include the Provisions of Sections II, III, and IV above in every subcontract making those provisions binding on each subcontractor, supplier, manufacturer, consultant or service provider.

VI. DEFINITIONS

For the purpose of these Special Provisions, the terms listed below are defined as follows:

Minority Business Enterprise or MBE means any individual, business organization, or non-profit corporation certified as a MBE by the Supplier Diversity Office (SDO), formerly known as the State Office of Minority and Women Business Assistance (SOMWBA), or by the Department for the purposes of a particular bid or proposal to be submitted to the Department.

Women Business Enterprise or WBE means any individual, business or organization, or non-profit corporation certified as a WBE by SDO, or by the Department for the purposes of a particular bid or proposal to be submitted to the Department.

Service- Disabled Veterans- Owned Businesses or SDVOBE means a business not less than 51 percent of which is owned by one or more service- disabled veterans or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more service-disabled veterans; and the management and daily business operations of which are controlled by one or more service- disabled veterans or, in the case of a veteran with permanent and severe disability, the spouse or permanent caregiver of such veteran.

"Contractor activity" means any work, including but not limited to, construction, demolition, renovation, survey, test boring services, or maintenance work performed under the Contract.

"Approved Joint Venture" means a joint venture between M/WBEs and non-M/WBEs, or SDVOBEs and non-SDVOBEs, which has been established for the purpose of participation on a particular contract, where:

1. The M/WBE or SDVOBE partner(s) shares in the ownership, control, management responsibilities, risks and profits of the joint venture; and
2. The Joint Venture has been approved by the Department for M/WBE or SDVOBE participation on the particular contract.

"Equipment Rental Firm" means a firm that owns equipment and assumes actual and contractual responsibility to rent said equipment to perform a useful function of the work of the contract consistent with normal industry practice.

"Material Supplier" means a vendor engaged in sales to the highway construction industry from an established place of business or source of supply, which:

- (a) Manufactures goods from raw materials or substantially alters them before resale, or
- (b) Provides and maintains a storage facility for materials used in the work, consistent with normal industry practice.

"Department" means the Massachusetts Department of Transportation (MassDOT).

"SDO" means the Massachusetts Supplier Diversity Office.

VII. ELIGIBILITY of M/WBEs

Only firms, *OTHER THAN THE PRIME CONTRACTOR*, which have been certified by SDO and/or the Department as eligible to participate on state funded contracts as MBEs or WBEs may be used on this contract for credit toward the toward the M/WBE participation goal.

1. SDO Directory of Certified M/WBEs: The Supplier Diversity Office publishes a Directory of certified MBE and WBEs. This Directory can be obtained from SDO at <https://www.sdo.osd.state.ma.us/>. This site lists those firms which have been certified as minority owned (MBEs) or women owned (WBEs) in accordance with the criteria of 425 CMR 2.00 et seq to participate as M/WBEs on state funded contracts. It also lists the kinds of work in which each firm engages but does not constitute an endorsement of the quality or performance of any business and does not represent Department subcontractor approval.
2. Application for Certification by the Department for a Particular Project: A firm which has (1) submitted a fully completed M/WBE application to SDO at least 30 days previously, (2) has provided in a timely manner, any additional information which may have been requested by SDO, and (3) can provide evidence, satisfactory to the Department, of a bidder's conditional commitment to subcontract with the firm, if certified, may apply directly to the MassDOT Office of Civil Rights to be certified for participation on the particular contract.
3. Joint Venture Approval: To obtain recognition as an approved joint venture between M/WBEs and non-M/WBEs, the Joint Venture must provide to the MassDOT Office of Civil Rights, at least 14 business days before the bid opening date, the Joint Venture Affidavit Document B00847, and a copy of the Joint Venture Agreement, which shall include a detailed breakdown of the following:
 - (a) Capital participation by the M/WBE,
 - (b) Specific equipment to be provided to the Joint Venture by the M/WBE,
 - (c) Specific responsibilities of the M/WBE in the management of the Joint Venture,
 - (d) Workforce and specific skills to be provided to the Joint Venture by the M/WBE, and
 - (e) Percentage distribution to the M/WBE of the projected profit or loss incurred by the Joint Venture.
 - (f) The Joint Venture shall provide all such additional information as may be requested by the Department for the purpose of determining joint venture eligibility.

VIII. ELIGIBILITY of SDVOBEs

Only firms, *OTHER THAN THE PRIME CONTRACTOR*, which have demonstrated that they are listed as a service-disabled veteran- owned small businesses within the VetBiz database may be used on this contract for credit toward the SDVOBE participation goal.

1. VetBiz Database: The website, located at www.VetBiz.gov, listing verified service- disabled veteran- owned businesses.
2. Joint Venture Approval: To obtain recognition as an approved joint venture between SDVOBEs and non-SDVOBEs, the joint venture must provide to the MassDOT Office of Civil Rights, at least 14 business days before the bid opening date, an application for joint venture participation approval, and a copy of the Joint Venture Agreement, which shall include a detailed breakdown of the following:
 - (a) Capital participation by the SDVOBE,
 - (b) Specific equipment to be provided to the joint venture by the SDVOBE,
 - (c) Specific responsibilities of the SDVOBE in the management of the Joint Venture,
 - (d) Workforce and specific skills to be provided to the joint venture by the SDVOBE, and

- (e) Percentage distribution to the SDVOBE of the projected profit or loss incurred by the Joint Venture.
- (f) The Joint Venture shall provide all such additional information as may be requested by the Department for the purpose of determining joint venture eligibility.

IX. COUNTING M/WBE PARTICIPATION AND SDVOBE BENCHMARKS TOWARDS M/WBE AND SDVOBE GOALS

In order for M/WBE participation and SDVOBE benchmarks to count toward the Contract goal, the M/WBE and SDVOBE must have independently managed, supervised and performed the Contract work with its own workforce, equipment and resources. M/WBE and SDVOBE participation which fulfills these requirements shall be counted toward meeting the M/WBE and SDVOBE goals in accordance with the following rules:

- 1 If a firm has been determined to be an eligible MBE, WBE or SDVOBE, the total dollar value of the contract performed by the M/WBE or SDVOBE is counted toward the applicable goal as follows:
 - a. Except as provided below, in Section IX (1)(g), work performed by a M/WBE or a SDVOBE Prime Contractor shall not be counted toward the M/WBE or SDVOBE goal, and all Prime Contractors, including M/WBE or SDVOBE Prime Contractors, must comply with the M/WBE and SDVOBE requirements of this Contract.
 - b. For a M/WBE or SDVOBE material supplier, sixty percent (60%) of the amount to be paid for materials and supplies required under this Contract shall be credited toward the goal.
 - c. For a M/WBE or SDVOBE who provides a bonafide service such as professional, technical, consultant or managerial services and assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for performance of the contract, reasonable fees or commissions charged for the service shall be listed, but the cost of items themselves shall not be credited.
 - d. For a M/WBE or SDVOBE hauler, trucker, or delivery service, which is not also the manufacturer of or a regular dealer in the materials and supplies, reasonable fees charged for delivery of materials and supplies required on the job site shall be credited; the cost of the materials and supplies themselves shall not be credited.
 - e. For a M/WBE or SDVOBE who provides any bonds or insurance specifically required for the performance of the contract, reasonable fees or commissions charged for such service shall be listed, but the face amount or actual premium paid for the bond or insurance shall not be credited.
 - f. The Department shall determine if the fees or commissions listed in accordance with paragraphs (c), (d), and (e) are not excessive as compared with fees or commissions customarily allowed for similar services.
 - g. That portion of the contract total dollar value equal to the percentage of ownership and control of the M/WBE partner(s) or SDVOBE partner(s) in an approved Joint Venture shall be counted toward the Contract goal, except that credit for M/WBE and SDVOBE participation in an approved Prime Joint Venture shall not exceed one half of the Contract goal.

X. JOINT CHECK POLICY

1. 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 M/WBE or SDVOBE third party such as a regular dealer of material or supplies. The Prime Contractor issues the check as payor to the M/WBE or SDVOBE 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 M/WBE or SDVOBE. MassDOT has established criteria to ensure that M/WBEs or SDVOBEs are in fact performing a commercially useful function ("CUF") while using a joint check arrangement. Contractors and M/WBEs or SDVOBEs must meet and conform to these conditions and criteria governing the use of joint checks.

2. In the event that a Contractor, M/WBE or SDVOBE Subcontractor desires to use a joint check, MassDOT will require prior notice and will closely monitor the arrangement for compliance. MassDOT may allow a joint check arrangement and give credit to a Contractor for use of the M/WBE or SDVOBE 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 (M/WBEs, SDVOBE and non-M/WBEs or non-SDVOBEs); 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 M/WBE or SDVOBE (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.
3. Other factors MassDOT may consider:
 - Whether there is a requirement by the Prime Contractor that a M/WBE or SDVOBE should use a specific vendor or supplier to meet their Subcontractor specifications;
 - Whether there is a requirement that a M/WBE or SDVOBE use the Prime Contractor's negotiated price;
 - The independence of the M/WBE or SDVOBE;
 - 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 M/WBE or SDVOBE has made an effort to establish alternate arrangements for following periods (i.e., the M/WBE or SDVOBE 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 M/WBE or SDVOBE remain responsible for compliance with all other elements of the Special Provisions, and must still be able to prove that a commercially useful function is being performed for the Contractor.

XI. JOINT CHECK PROCEDURES

- The M/WBE or SDVOBE 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 B00846) and by notification on the M/WBE Letter of Intent (Document B00843) or SDVOBE Letter of Intent (Document B00845), 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 Contractor and M/WBE or SDVOBE must have:
 - (a) a written agreement with the material supplier/vendor;
 - (b) applied for credit with the subject material supplier and has supplied the vendor's response;

- (c) shown that it will place all orders to the subject material supplier/vendor;
 - (d) made and retains all decision-making responsibilities concerning the materials; and
 - (e) provided a Joint Check Agreement that is acceptable to MassDOT;
- The MassDOT Office of Civil Rights will review the request and render a decision as part of the approval process for M/WBE or SDVOBE 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 M/WBE or SDVOBE 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 M/WBE or SDVOBE (i.e. if possible, funds or the joint check should be processed by the M/WBE or SDVOBE and sent by the M/WBE or SDVOBE 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 M/WBE or SDVOBE 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 M/WBE or SDVOBE Program policies and procedures as part of the Subcontractor approval process.

XII. AWARD DOCUMENTATION AND PROCEDURES

1. The two lowest bidders/the two bidders with the lowest price per quality score point, including any M/WBE bidder or SDVOBE bidder, shall submit, by the close of business on the third business day after the bid opening, a completed Schedule of M/WBE and SDVOBE participation, in the form attached, which shall list:
 - a. The full company name, address and telephone number of each M/WBE or SDVOBE with whom the bidder intends to make a commitment;
 - b. The Contract item(s), by number(s) and quantity(ies), if applicable, or specific description of other business activity to be performed by each M/WBE or SDVOBE 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 Section XII of these Special Provisions.
 - c. The total dollar amount to be paid to each M/WBE or SDVOBE. (Bidders are cautioned that at least one half of the participation goal must be met with Contract work.)
 - d. The total dollar amount to be paid to each M/WBE or SDVOBE which is eligible for credit toward the M/WBE or SDVOBE goal under the crediting rules set out in Section IX.
 - e. The total creditable M/WBE or SDVOBE participation as a percentage of the total bid price.
2. All firms listed on the Schedule must be currently certified.
3. The two lowest bidders/the two bidders with the lowest price per quality score point shall submit with their Schedules of Participation, fully completed, signed Letters of Intent from each of the M/WBEs or SDVOBEs listed on the Schedule. The Letters of Intent shall be in the form attached and shall identify specifically the contract activity the M/WBE or SDVOBE proposes to perform, expressed as contract item number, if applicable, description of the activity, 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.

4. Evidence of good faith efforts will be evaluated by the Department in the selection of the lowest responsible bidder/best value bidder. All information requested by the Department for the purpose of evaluating the bidder's efforts to achieve the goal must be provided within three calendar days and must be accurate and complete in every detail. The apparent low bidder's/best value bidder's attainment of the M/WBE or SDVOBE goal or a satisfactory demonstration of good faith efforts is a prerequisite for Award of the Contract.
5. 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 on the Schedule of Participation, and provide the required Letters of Intent for, M/WBE or SDVOBE 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 the Department, that good faith efforts were made to achieve the goal.
6. If the Department finds that the percentage of M/WBE or SDVOBE participation submitted by the bidder on its Schedule does not meet the Contract goal, or that the 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 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.
7. If, after administrative reconsideration, the Department 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.
8. Actions which constitute evidence of good faith efforts to meet the M/WBE or SDVOBE goals include, but are not limited to, all of the following examples:
 - a. Efforts made to select portions of the work proposed to be performed by M/WBEs or SDVOBEs in order to increase the likelihood of achieving the stated goal, including, where appropriate, but not limited to, breaking down contracts into economically feasible units to facilitate M/WBE and SDVOBE participation. The value of such work is required to at least equal the M/WBE and SDVOBE goal.
 - b. Reasonable written notification prior to the opening of bids soliciting individual M/WBEs or SDVOBEs interested in participation in the contract as subcontractors, regular dealers, manufacturers, consultants, or service providers and identifying the specific items or type of work being solicited.
 - c. Written notification to M/WBE or SDVOBE economic development assistance agencies and organizations which provide assistance in recruitment and placement of M/WBEs and SDVOBEs, describing the type of work, supplies or services being considered for M/WBE or SDVOBE subcontracting on this contract.
 - d. Efforts made to negotiate with M/WBEs or SDVOBEs for specific items of work including evidence of:
 - (1) The names, addresses, telephone numbers of M/WBEs or SDVOBEs who were contacted, the dates of initial contact and whether initial solicitations of interest were followed up by contacts with M/WBEs or SDVOBEs to determine with certainty whether the M/WBEs or SDVOBEs were interested. Personal or phone contacts are expected.
 - (2) A description of the information provided by the M/WBEs or SDVOBEs regarding the plans and specifications and estimated quantities for portions of the work to be performed.
 - (3) A statement of why additional agreements with M/WBEs or SDVOBEs were not reached.
 - (4) Documentation of each M/WBE or SDVOBE contacted but rejected and the reasons for the rejection.
 - e. Absence of any agreements between the Contractor and the M/WBE or SDVOBE in which M/WBE or SDVOBE promises not to provide subcontracting quotations to other bidders.
 - f. Efforts made to assist the M/WBEs or SDVOBEs that need assistance in obtaining bonding, insurance, or lines of credit required by the Contractor.

- g. Documentation that qualified M/WBEs or SDVOBEs are not available, or are not interested.
 - h. Attendance at any meeting scheduled by the Department to encourage better Contractor-M/WBE or Contractor- SDVOBE relationships and/or to inform M/WBEs or SDVOBEs of forthcoming M/WBE or SDVOBE utilization opportunities.
 - i. Advertisement, in general circulation media, in trade association publications and in disadvantaged business enterprise-focused media, of interest in utilizing M/WBEs or SDVOBEs and the area of interest.
 - j. Efforts to effectively use the services of available minority community organizations; women organizations, veteran organizations, minority, women disadvantaged and veteran contractor's groups; local, state and federal disadvantaged business assistance offices; and other organizations that provide assistance in recruitment and placement of M/WBEs or SDVOBEs.
9. The demonstration of good faith efforts must establish that the Contractor has actively and aggressively sought out M/WBEs or SDVOBEs to participate in the project and has taken all actions which could be reasonably expected to achieve the goal. Examples of circumstances or actions not acceptable as reasons for failure to meet the M/WBE or SDVOBE goal, include, but are not limited to:
- a. The M/WBE or SDVOBE was unable to provide performance and/or payment bonds.
 - b. The M/WBEs or SDVOBEs commercially reasonable bid was rejected based on price.
 - c. The M/WBE or SDVOBE would not agree to perform items of work at the unit bid price.
 - d. The Contractor does not want to subcontract a percentage of the work sufficient to meet the goal.
 - e. Solicitation by mail or fax only.

XIII. COMPLIANCE

- 1. All activity performed by a M/WBE or SDVOBE for credit toward the Contract goal must be performed, managed and supervised by the M/WBE or SDVOBE. Prime Contractor shall not enter into, or condone, any other arrangement.
- 2. The Prime Contractor shall not perform with its own organization, or assign to any other business, any activity designated for the M/WBEs or SDVOBEs named on the Schedule submitted by the Prime Contractor under Section IX, or under Section XII(6), without the approval of the Department in accordance with the requirements of Sections XIII(6) and XIII(10).
- 3. The Department may suspend payment for any activity which was not performed by the M/WBE or SDVOBE to whom the activity was committed on the approved Schedule of Participation, or which was not performed in accordance with the requirements of Section XIII(1).
- 4. The Department retains the right to approve or disapprove all subcontractors. Requests by the Prime Contractor for approval of participation by a M/WBE or SDVOBE subcontractor for credit toward the Contract goal must include, in addition to any other requirements for subcontractor approval, the following:
 - a. A copy of the proposed subcontract. The subcontract must be for at least the dollar amount, and for the work described, in the Prime Contractor's Schedule of Participation.
 - b. A resume stating the qualifications and experience of the M/WBE or SDVOBE 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.
 - c. A Schedule of Operations indicating when the M/WBE or SDVOBE is expected to perform the work.

- d. A list of (1) equipment owned by the M/WBE or SDVOBE to be used on the Project, and (2) equipment to be leased by the M/WBE or SDVOBE for use on the Project.
 - e. A list of: (1) all projects (public and private) which the M/WBE or SDVOBE is currently performing, (2) all projects (public and private) to which the M/WBE or SDVOBE is committed, (3) all projects (public and private) to which the M/WBE or SDVOBE 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 M/WBEs or SDVOBEs work schedule for each project.
5. If, pursuant to the subcontractor approval process, the Department finds that a M/WBE or SDVOBE subcontractor does not have sufficient experience or resources to perform, manage and supervise work of the kind proposed in accordance with the requirements of Section XIII(1), approval of the M/WBE or SDVOBE subcontractor may be denied. In the event of such denial, the Prime Contractor shall proceed in accordance with the requirements of Sections XIII(6) and XIII(10).
 6. If, for reasons beyond its control, the Prime Contractor cannot comply with its M/WBE or SDVOBE commitment in accordance with the Schedule of participation submitted under Section IX and the terms of these Special Provisions, the Prime Contractor shall submit to the Department the reasons for its inability to comply with its obligations under Section I and shall submit, and request approval for, a revised Schedule of Participation. If approved by the Department, the revised Schedule shall govern the Prime Contractor's performance in meeting its obligations under these special provisions.
 7. A Prime Contractor's compliance with the participation goal in Section I shall be determined by reference to the required percentage of the total Contract price, including any additions and modifications thereto, provided, however, that no decrease in the dollar amount of a bidder's commitment to any M/WBE or SDVOBE shall be allowed without the approval of the Department.
 8. If the Contract amount is increased, the Prime Contractor shall submit a revised Schedule of Participation in accordance with Sections XIII(6) and XIII(10).
 9. In the event of the decertification of a M/WBE or SDVOBE participating or scheduled to participate on the contract for credit toward the goal, the Contractor shall proceed in accordance with Sections XIII(6) and XIII(10).
 10. The Prime Contractor shall notify the Department immediately of any facts which come to its attention indicating that it may or will be unable to comply with any aspect of its M/WBE or SDVOBE obligation under this Contract.
 11. Any notice required by these Special Provisions shall be given in writing to the Resident Engineer and the district designated Compliance Officer with a copy to the Director of Compliance, Office of Diversity and Civil Rights, 10 Park Plaza, Room 3170, Boston MA 02116.
 12. The Prime Contractor and its subcontractors shall comply with the Department's Electronic Reporting System Requirements (Contract Document 00821) and submit all information required by the Department related to the M/WBE Special Provisions and SDVOBE Special Provisions through the Equitable Business Opportunity Solution (EBO). The Department reserves the right to request reports in the format it deems necessary anytime during the performance of the Contract.
 13. The Contractor shall pay each M/WBE or SDVOBE for satisfactory performance of its Contract no later than 10 days from receipt of payment for the work from the Department. Any delay or postponement of payment to the M/WBEs or SDVOBEs must be for good cause and only with the prior approval of the Department.
 14. The Department may withhold the Contractor's next periodic payment if each M/WBE or SDVOBE is not paid in accordance with Section XIII(13).
 15. The Department may require specific performance of the Prime Contractor's commitment under the Contract by requiring the Prime Contractor to subcontract with a M/WBE or SDVOBE for any contract or specialty item.

XIV. SANCTIONS

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

1. Retain, in connection with final acceptance and final payment, an amount determined by multiplying the total contract amount by the percentage in Section I, less the amount paid to approved M/WBEs or SDVOBEs for work performed under the Contract in accordance with the provisions of Section X. The Prime Contractor shall have the right to appeal such retention of funds in accordance with the provisions of M.G.L. c. 30A s.10.
2. 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.
3. 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 5.07.
4. Initiate debarment proceedings under M.G.L. c.29 §29F.

XV. FURTHER INFORMATION

Any proposed M/WBE, SDVOBE, bidder, Contractor or subcontractor shall provide such information as is necessary in the judgement of the Department to ascertain its compliance with the terms of this Special Provision.

XVI. LIST OF ADDITIONAL DOCUMENTS

1. The following documents shall be completed and signed by the bidder and designated M/WBEs or SDVOBEs in accordance with Section XII - Award Documentation and Procedures. These documents must be returned by the bidder to MassDOT's Bid Document Distribution Center:
 - ☐ Schedule of M/WBEs (Document B00842) or SDVOBE Participation (Document B00844)
 - ☐ Letter of Intent: M/WBEs (Document B00843) or SDVOBE (Document B00845)
 - ☐ M/WBEs or SDVOBE Joint Check Arrangement Approval Form (Document B00846), if Contractor and M/WBE or SDVOBE plan, or if M/WBE or SDVOBE is required to use a Joint Check (when applicable)
2. The following document shall be signed and returned by Contractor and Subcontractors/M/WBEs or SDVOBEs 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 (M/WBEs or SDVOBEs and non-M/WBEs or SDVOBEs alike)).
3. 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:
 - ☐ Joint Venture Affidavit of M/WBE or SDVOBE/Non-M/WBE or Non-SDVOBE (Document B00847)
4. The following document shall be provided to MassDOT's District Office of Civil Rights within 30 calendar days after the work of the M/WBE is completed, or no later than 30 calendar days after the work of the M/WBE 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/WBE) (Form No. CSD-100)

** END OF DOCUMENT ***

DOCUMENT 00761

**SPECIAL PROVISIONS FOR CERTIFICATION REGARDING DEBARMENT,
SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

Revised: 02/09/16

I. Instructions for Certification - Primary Covered Transactions:

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

1. 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 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 MassDOT's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
2. The certification in this clause is a material representation of fact upon which reliance was placed when the MassDOT determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available, the MassDOT may terminate this transaction for cause of default.
3. The prospective primary participant shall provide immediate written notice to the MassDOT if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the MassDOT for assistance in obtaining a copy of those regulations.
5. The prospective primary 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 MassDOT.
6. The prospective primary 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 Transaction," provided by the MassDOT, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. 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 may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded From Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration and the Debarment Lists compiled by both the Massachusetts Office of the Attorney General and the Department of Capital Asset Management and Maintenance (DCAMM) and published separately in the Central Register.
8. 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.
9. Except for transactions authorized under paragraph 5 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, the MassDOT may terminate this transaction for cause or default.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion -- Primary Covered Transactions

The prospective primary 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 covered transactions by any Federal, State or local department or agency;
2. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgement rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 2 of this certification; and
4. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

II. Instructions for Certification - Lower Tier Covered Transactions:

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

1. 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 the MassDOT may pursue available remedies, including suspension and/or debarment.
2. 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.
3. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the MassDOT for assistance in obtaining a copy of those regulations.
4. 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 MassDOT.
5. 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.
6. 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 may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List and the Debarment Lists.

7. 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.
8. Except for transactions authorized under paragraph 4 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, the MassDOT may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal, State or local department or agency.

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

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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

November 26, 2025

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 = $\$0.82/\text{Pound} \times 0.950 = \$0.78/\text{Pound}$

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

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

* To access the PPI website and obtain a Base Price Index or a Period Price Index, go to

<http://data.bls.gov/cgi-bin/srgate>

End of example.

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

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

Structural Steel

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

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

Reinforcing Steel

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

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

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

TABLE

Steel Type		Price per Pound
1	ASTM A615/A615M Grade 60 (AASHTO M31 Grade 60 or 420) Reinforcing Steel	\$0.59
2	ASTM A27 (AASHTO M103) Steel Castings, H-Pile Points & Pipe Pile Shoes (See Note below.)	\$0.82
3	ASTM A668 / A668M (AASHTO M102) Steel Forgings	\$0.82
4	ASTM A108 (AASHTO M169) Steel Forgings for Shear Studs	\$0.84
5	ASTM A709/A709M Grade 36 / AASHTO M270M/M270 Grade 36 or 250 Structural Steel Plate	\$0.89
6	ASTM A709/A709M Grade 36 / AASHTO M270M/M270 Grade 36 or 250 Structural Steel Shapes	\$0.83
7	ASTM A709/A709M Grade 50 / AASHTO M270M/M270 Grade 50 or 345 Structural Steel Plate	\$0.89
8	ASTM A709/A709M Grade 50 / AASHTO M270M/M270 Grade 50 or 345 Structural Steel Shapes	\$0.83
9	ASTM A709/A709M Grade 50WT / AASHTO M270M/M270 Grade 50WT or 345WT Structural Steel Plate	\$0.92
10	ASTM A709/A709M Grade 50WT / AASHTO M270M/M270 Grade 50WT or 345WT Structural Steel Shapes	\$0.84
11	ASTM A709/A709M Grade 50W / AASHTO M270M/M270 Grade 50W 345W Structural Steel Plate	\$0.92
12	ASTM A709/A709M Grade 50W / AASHTO M270M/M270 Grade 50W or 345W Structural Steel Shapes	\$0.84
13	ASTM A709/A709M Grade HPS 50W / AASHTO M270M/M270 Grade HPS 50W or 345W Structural Steel Plate	\$0.96
14	ASTM A709/A709M Grade HPS 70W / AASHTO M270M/M270 Grade HPS 70W or 485W Structural Steel Plate	\$1.04
15	ASTM A514/A514M-05 Grade HPS 100W / AASHTO M270M/M270 Grade HPS 100W or 690W Structural Steel Plate	\$1.58
16	ASTM A992/A992M Grade 50S / AASHTO M270M/M270 Grade 50S or 345S Structural Steel Plate	\$0.92
17	ASTM A992/A992M Grade 50S / AASHTO M270M/M270 Grade 50S or 345S Structural Steel Shapes	\$0.84
18	ASTM A276 Type 316 Stainless Steel	\$4.75
19	ASTM A240 Type 316 Stainless Steel	\$4.75
20	ASTM A148 Grade 80/50 Steel Castings (See Note below.)	\$1.63
21	ASTM A53 Grade B Structural Steel Pipe	\$1.04
22	ASTM A500 Grades A, B, 36 & 50 Structural Steel Pipe	\$1.04
23	ASTM A252, Grades 240 (36 KSI) & 414 (60 KSI) Pipe Pile	\$0.82
24	ASTM 252, Grade 2 Permanent Steel Casing	\$0.82
25	ASTM A36 (AASHTO M183) for H-piles, steel supports and sign supports	\$0.86
26	ASTM A328 / A328M, Grade 50 (AASHTO M202) Steel Sheetpiling	\$1.56
27	ASTM A572 / A572M, Grade 50 Sheetpiling	\$1.56
28	ASTM A36/36M, Grade 50	\$0.89
29	ASTM A570, Grade 50	\$0.86
30	ASTM A572 (AASHTO M223), Grade 50 H-Piles	\$0.89
31	ASTM A1085 Grade A (50 KSI) Steel Hollow Structural Sections (HSS), heat-treated per ASTM A1085 Supplement S1	\$1.04
32	AREA 140 LB Rail and Track Accessories	\$0.53

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 preceeding 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. 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 SubcontractorContract No: 133051 Project No. 614101 Federal Aid No.: NFALocation: DISTRICT 3Project Description: Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at Various Locations along I-90

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

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

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

- ☐ 00718 –Participation By Minority Or Women's Business Enterprises and SDVOBE†
- ☐ 00761 –Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion
- ☐ 00820 – MA Supplemental Equal Employment Opportunity, Non-Discrimination, and Affirmative Action Program
- ☐ 00821 – Electronic Reporting Requirements, Civil Rights Programs, and Certified Payroll
- ☐ 00859 – Contractor/Subcontractor Certification Form (this document)
- ☐ 00860 – MA Employment Laws
- ☐ 00861 – Applicable State Wage Rates in the Contract Proposal**
- ☐ B00842 – MA Schedule of Participation By Minority or Women Business Enterprises (M/WBEs)†
- ☐ B00843 – MA Letter of Intent – M/WBEs†
 - ** Does not apply to Material Suppliers, unless performing work on-site
 - † Applies only if Subcontractor is a M/WBE; only include these forms for the particular M/WBE Entity
- ☐ B00844 - Schedule of Participation By SDVOBE
- ☐ B00845 - Letter of Intent – SDVOBE
- ☐ B00846 – M/WBE or SDVOBE Joint Check Arrangement Approval Form
- ☐ B00847 – Joint Venture Affidavit

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

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

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

*Applicable only to Contracts or Subcontracts in excess of \$10,000

**Does not apply to Material Suppliers, unless performing work on-site

† Applies only if Subcontractor is a DBE; only include these forms for the particular DBE Entity

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

(Print Name and Title)

(Authorized Signature)

PART 2

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

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

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

Firm: _____

Address: _____

(Print Name and Title)

Telephone Number: _____

Federal I.D. Number: _____

Estimated Start Date: _____

Estimated Completion Date: _____

Estimated Dollar Amount: _____

(Authorized Signature)

(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 than two weeks before the anniversary of the Notice to Proceed date of the contract to allow for adequate processing by the Department of Labor Standards (DLS). The effective date for the new rates will be the anniversary date of the contract (i.e. the notice to proceed date), regardless of the date of issuance on the schedule from DLS.

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

*** END OF DOCUMENT ***

DOCUMENT 00861

STATE PREVAILING WAGE RATES

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

MAURA HEALY
Governor

KIM DRISCOLL
Lt. Governor

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

LAUREN JONES
Secretary
MICHAEL FLANAGAN
Director

Awarding Authority:	Massachusetts Highway	City/Town:	WORCESTER
Contract Number:	133051		
Description of Work:	DISTRICT 3— Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at Various Locations along I-90		
Job Location:	Various Locations along I-90		

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 updated wage schedule must be provided to all contractors, including general and sub-contractors, working on the construction project.
- This annual update requirement is generally not applicable to 27F “rental of equipment” contracts. For such contracts, the prevailing wage rates issued by DLS shall remain in effect for the duration of the contract term. However, if the prevailing wage rate sheet issued does not contain wage rates for each year covered by the contract term, the Awarding Authority must request updated rate sheets from DLS and provide them to the contractor to ensure the correct rates are being paid throughout the duration of the contract. Additionally, if an Awarding Authority exercises an option to renew or extend the contract term, they must request updated rate sheets from DLS and provide them to the contractor.
- 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.

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
(2 AXLE) DRIVER - EQUIPMENT	6/1/2025	\$40.95	\$15.57	\$20.17	\$0.00	\$0.00	\$76.69
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2025	\$40.95	\$15.57	\$21.78	\$0.00	\$0.00	\$78.30
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2026	\$40.95	\$16.17	\$21.78	\$0.00	\$0.00	\$78.90
	6/1/2026	\$41.95	\$16.17	\$21.78	\$0.00	\$0.00	\$79.90
	12/1/2026	\$41.95	\$16.17	\$23.52	\$0.00	\$0.00	\$81.64
	1/1/2027	\$41.95	\$16.77	\$23.52	\$0.00	\$0.00	\$82.24
(3 AXLE) DRIVER - EQUIPMENT	6/1/2025	\$41.02	\$15.57	\$20.17	\$0.00	\$0.00	\$76.76
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2025	\$41.02	\$15.57	\$21.78	\$0.00	\$0.00	\$78.37
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2026	\$41.02	\$16.17	\$21.78	\$0.00	\$0.00	\$78.97
	6/1/2026	\$42.02	\$16.17	\$21.78	\$0.00	\$0.00	\$79.97
	12/1/2026	\$42.02	\$16.17	\$23.52	\$0.00	\$0.00	\$81.71
	1/1/2027	\$42.02	\$16.77	\$23.52	\$0.00	\$0.00	\$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT	6/1/2025	\$41.14	\$15.57	\$20.17	\$0.00	\$0.00	\$76.88
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2025	\$41.14	\$15.57	\$21.78	\$0.00	\$0.00	\$78.49
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2026	\$41.14	\$16.17	\$21.78	\$0.00	\$0.00	\$79.09
	6/1/2026	\$42.14	\$16.17	\$21.78	\$0.00	\$0.00	\$80.09
	12/1/2026	\$42.14	\$16.17	\$23.52	\$0.00	\$0.00	\$81.83
	1/1/2027	\$42.14	\$16.77	\$23.52	\$0.00	\$0.00	\$82.43
ADS/SUBMERSIBLE PILOT	8/1/2024	\$117.16	\$10.08	\$11.62	\$12.67	\$0.00	\$151.53
PILE DRIVER LOCAL 56							
PILE DRIVER LOCAL 56 (ZONE 2)							
For apprentice rates see "Apprentice- PILE DRIVER"							
AIR TRACK OPERATOR	6/1/2025	\$40.59	\$10.15	\$9.50	\$9.11	\$0.00	\$69.35
LABORERS	12/1/2025	\$41.97	\$10.15	\$9.50	\$9.11	\$0.00	\$70.73
LABORERS - ZONE 2	6/1/2026	\$43.41	\$10.15	\$9.50	\$9.11	\$0.00	\$72.17
	12/1/2026	\$44.85	\$10.15	\$9.50	\$9.11	\$0.00	\$73.61
	6/1/2027	\$46.30	\$10.15	\$9.50	\$9.11	\$0.00	\$75.06
	12/1/2027	\$47.75	\$10.15	\$9.50	\$9.11	\$0.00	\$76.51
	6/1/2028	\$49.25	\$10.15	\$9.50	\$9.11	\$0.00	\$78.01
	12/1/2028	\$50.75	\$10.15	\$9.50	\$9.11	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"							
AIR TRACK OPERATOR (HEAVY & HIGHWAY)	6/1/2025	\$40.59	\$10.15	\$9.50	\$9.21	\$0.00	\$69.45
LABORERS	12/1/2025	\$41.97	\$10.15	\$9.50	\$9.21	\$0.00	\$70.83
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$43.41	\$10.15	\$9.50	\$9.21	\$0.00	\$72.27
	12/1/2026	\$44.85	\$10.15	\$9.50	\$9.21	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
ASBESTOS WORKER (PIPES & TANKS)	6/1/2025	\$43.80	\$14.50	\$4.30	\$6.75	\$0.00	\$69.35
HEAT & FROST INSULATORS LOCAL 6	12/1/2025	\$44.80	\$14.50	\$4.30	\$6.75	\$0.00	\$70.35
HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)							
ASPHALT RAKER	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"							
ASPHALT RAKER (HEAVY & HIGHWAY)	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.21	\$0.00	\$68.95
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.21	\$0.00	\$70.33
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.21	\$0.00	\$71.77
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.21	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE	6/1/2025	\$57.83	\$16.05	\$13.25	\$3.25	\$0.00	\$90.38
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$59.28	\$16.05	\$13.25	\$3.25	\$0.00	\$91.83
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$60.58	\$16.05	\$13.25	\$3.25	\$0.00	\$93.13
	12/1/2026	\$62.03	\$16.05	\$13.25	\$3.25	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
BACKHOE/FRONT-END LOADER	6/1/2025	\$57.83	\$16.05	\$13.25	\$3.25	\$0.00	\$90.38
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$59.28	\$16.05	\$13.25	\$3.25	\$0.00	\$91.83
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$60.58	\$16.05	\$13.25	\$3.25	\$0.00	\$93.13
	12/1/2026	\$62.03	\$16.05	\$13.25	\$3.25	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
BARCO-TYPE JUMPING TAMPER	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"							
BLOCK PAVER, RAMMER / CURB SETTER	6/1/2025	\$40.59	\$10.15	\$9.50	\$9.11	\$0.00	\$69.35
LABORERS	12/1/2025	\$41.97	\$10.15	\$9.50	\$9.11	\$0.00	\$70.73
LABORERS - ZONE 2	6/1/2026	\$43.41	\$10.15	\$9.50	\$9.11	\$0.00	\$72.17
	12/1/2026	\$44.85	\$10.15	\$9.50	\$9.11	\$0.00	\$73.61
	6/1/2027	\$46.30	\$10.15	\$9.50	\$9.11	\$0.00	\$75.06
	12/1/2027	\$47.75	\$10.15	\$9.50	\$9.11	\$0.00	\$76.51
	6/1/2028	\$49.25	\$10.15	\$9.50	\$9.11	\$0.00	\$78.01
	12/1/2028	\$50.75	\$10.15	\$9.50	\$9.11	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"							
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY)	6/1/2025	\$40.59	\$10.15	\$9.50	\$9.21	\$0.00	\$69.45
LABORERS	12/1/2025	\$41.97	\$10.15	\$9.50	\$9.21	\$0.00	\$70.83
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$43.41	\$10.15	\$9.50	\$9.21	\$0.00	\$72.27
	12/1/2026	\$44.85	\$10.15	\$9.50	\$9.21	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
BOILER MAKER	1/1/2024	\$48.12	\$7.07	\$14.60	\$6.00	\$0.00	\$75.79
BOILERMAKERS LOCAL 29							
BOILERMAKERS LOCAL 29							

Apprentice: BOILER MAKER							
Effective Date: 1/1/2024							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	65.00	\$31.28	\$7.07	\$9.32	\$3.90	\$0.00	\$51.57
2	65.00	\$31.28	\$7.07	\$9.32	\$3.90	\$0.00	\$51.57
3	70.00	\$33.68	\$7.07	\$10.03	\$4.20	\$0.00	\$54.98
4	75.00	\$36.09	\$7.07	\$10.74	\$4.50	\$0.00	\$58.40
5	80.00	\$38.50	\$7.07	\$11.45	\$4.80	\$0.00	\$61.82
6	85.00	\$40.90	\$7.07	\$12.18	\$5.10	\$0.00	\$65.25
7	90.00	\$43.31	\$7.07	\$12.88	\$5.40	\$0.00	\$68.66
8	95.00	\$45.71	\$7.07	\$13.62	\$5.70	\$0.00	\$72.10

Apprentice to Journeyworker Ratio: 1:4

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	8/1/2025	\$65.81	\$11.49	\$15.57	\$7.33	\$0.00	\$100.20
BRICKLAYERS LOCAL 3	2/1/2026	\$67.16	\$11.49	\$15.57	\$7.33	\$0.00	\$101.55
BRICKLAYERS LOCAL 3 (WORCESTER)	8/1/2026	\$69.36	\$11.49	\$15.57	\$7.33	\$0.00	\$103.75
	2/1/2027	\$70.76	\$11.49	\$15.57	\$7.33	\$0.00	\$105.15

Apprentice: BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)							
Effective Date: 8/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$32.91	\$11.49	\$15.57	\$7.33	\$0.00	\$67.30
2	60.00	\$39.49	\$11.49	\$15.57	\$7.33	\$0.00	\$73.88
3	70.00	\$46.07	\$11.49	\$15.57	\$7.33	\$0.00	\$80.46
4	80.00	\$52.65	\$11.49	\$15.57	\$7.33	\$0.00	\$87.04
5	90.00	\$59.23	\$11.49	\$15.57	\$7.33	\$0.00	\$93.62

Apprentice: BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)							
Effective Date: 2/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$33.58	\$11.49	\$15.57	\$7.33	\$0.00	\$67.97
2	60.00	\$40.30	\$11.49	\$15.57	\$7.33	\$0.00	\$74.69
3	70.00	\$47.01	\$11.49	\$15.57	\$7.33	\$0.00	\$81.40
4	80.00	\$53.73	\$11.49	\$15.57	\$7.33	\$0.00	\$88.12
5	90.00	\$60.44	\$11.49	\$15.57	\$7.33	\$0.00	\$94.83

Apprentice to Journeyworker Ratio: 1:5

BULLDOZER/GRADER/SCRAPER	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
CAISSON & UNDERPINNING BOTTOM MAN LABORERS LABORERS - FOUNDATION AND MARINE	6/1/2025	\$48.35	\$10.15	\$9.50	\$9.80	\$0.00	\$77.80
	12/1/2025	\$49.85	\$10.15	\$9.50	\$9.80	\$0.00	\$79.30
	6/1/2026	\$51.40	\$10.15	\$9.50	\$9.80	\$0.00	\$80.85
	12/1/2026	\$52.90	\$10.15	\$9.50	\$9.80	\$0.00	\$82.35
For apprentice rates see "Apprentice- LABORER"							
CAISSON & UNDERPINNING LABORER LABORERS LABORERS - FOUNDATION AND MARINE	6/1/2025	\$47.20	\$10.15	\$9.50	\$9.80	\$0.00	\$76.65
	12/1/2025	\$48.70	\$10.15	\$9.50	\$9.80	\$0.00	\$78.15
	6/1/2026	\$50.25	\$10.15	\$9.50	\$9.80	\$0.00	\$79.70
	12/1/2026	\$51.75	\$10.15	\$9.50	\$9.80	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"							
CAISSON & UNDERPINNING TOP MAN LABORERS LABORERS - FOUNDATION AND MARINE	6/1/2025	\$47.53	\$10.15	\$9.50	\$9.80	\$0.00	\$76.98
	12/1/2025	\$49.03	\$10.15	\$9.50	\$9.80	\$0.00	\$78.48
	6/1/2026	\$50.58	\$10.15	\$9.50	\$9.80	\$0.00	\$80.03
	12/1/2026	\$52.08	\$10.15	\$9.50	\$9.80	\$0.00	\$81.53
For apprentice rates see "Apprentice- LABORER"							
CARBIDE CORE DRILL OPERATOR LABORERS LABORERS - ZONE 2	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"							
CARPENTER CARPENTERS CARPENTERS -ZONE 2 (Eastern Massachusetts)	9/1/2025	\$50.35	\$10.33	\$11.47	\$8.50	\$0.00	\$80.65
	3/1/2026	\$51.60	\$10.33	\$11.47	\$8.50	\$0.00	\$81.90
	9/1/2026	\$52.85	\$10.33	\$11.47	\$8.50	\$0.00	\$83.15
	3/1/2027	\$54.10	\$10.33	\$11.47	\$8.50	\$0.00	\$84.40

Apprentice: CARPENTER							
Effective Date: 9/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	\$22.66	\$10.33	\$0.00	\$1.73	\$0.00	\$34.72
2	45.00	\$22.66	\$10.33	\$0.00	\$1.73	\$0.00	\$34.72
3	55.00	\$27.69	\$10.33	\$0.00	\$3.40	\$0.00	\$41.42
4	55.00	\$27.69	\$10.33	\$0.00	\$3.40	\$0.00	\$41.42
5	70.00	\$35.25	\$10.33	\$11.41	\$5.10	\$0.00	\$62.09
6	70.00	\$35.25	\$10.33	\$11.41	\$5.10	\$0.00	\$62.09
7	80.00	\$40.28	\$10.33	\$11.44	\$6.80	\$0.00	\$68.85
8	80.00	\$40.28	\$10.33	\$11.44	\$6.80	\$0.00	\$68.85

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: CARPENTER							
Effective Date: 3/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	\$23.22	\$10.33	\$0.00	\$1.73	\$0.00	\$35.28
2	45.00	\$23.22	\$10.33	\$0.00	\$1.73	\$0.00	\$35.28
3	55.00	\$28.38	\$10.33	\$0.00	\$3.40	\$0.00	\$42.11
4	55.00	\$28.38	\$10.33	\$0.00	\$3.40	\$0.00	\$42.11
5	70.00	\$36.12	\$10.33	\$11.41	\$5.10	\$0.00	\$62.96
6	70.00	\$36.12	\$10.33	\$11.41	\$5.10	\$0.00	\$62.96
7	80.00	\$41.28	\$10.33	\$11.44	\$6.80	\$0.00	\$69.85
8	80.00	\$41.28	\$10.33	\$11.44	\$6.80	\$0.00	\$69.85

Apprentice to Journeyworker Ratio: 1:5

CARPENTER WOOD FRAME	10/1/2025	\$27.75	\$7.02	\$3.80	\$1.00	\$0.00	\$39.57
CARPENTERS	10/1/2026	\$28.85	\$7.02	\$3.80	\$1.00	\$0.00	\$40.67
CARPENTERS-ZONE 3 (Wood Frame)							
All Aspects of New Wood Frame Work							

Apprentice: CARPENTER WOOD FRAME							
Effective Date: 10/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	\$16.65	\$7.02	\$0.00	\$0.00	\$0.00	\$23.67
2	60.00	\$16.65	\$7.02	\$0.00	\$0.00	\$0.00	\$23.67
3	65.00	\$18.04	\$7.02	\$0.00	\$1.00	\$0.00	\$26.06
4	70.00	\$19.43	\$7.02	\$0.00	\$1.00	\$0.00	\$27.45
5	75.00	\$20.81	\$7.02	\$3.80	\$1.00	\$0.00	\$32.63
6	80.00	\$22.20	\$7.02	\$3.80	\$1.00	\$0.00	\$34.02
7	85.00	\$23.59	\$7.02	\$3.80	\$1.00	\$0.00	\$35.41
8	90.00	\$24.98	\$7.02	\$3.80	\$1.00	\$0.00	\$36.80

Apprentice: CARPENTER WOOD FRAME							
Effective Date: 10/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	\$17.31	\$7.02	\$0.00	\$0.00	\$0.00	\$24.33
2	60.00	\$17.31	\$7.02	\$0.00	\$0.00	\$0.00	\$24.33
3	65.00	\$18.75	\$7.02	\$0.00	\$1.00	\$0.00	\$26.77
4	70.00	\$20.20	\$7.02	\$0.00	\$1.00	\$0.00	\$28.22
5	75.00	\$21.64	\$7.02	\$3.80	\$1.00	\$0.00	\$33.46
6	80.00	\$23.08	\$7.02	\$3.80	\$1.00	\$0.00	\$34.90
7	85.00	\$24.52	\$7.02	\$3.80	\$1.00	\$0.00	\$36.34
8	90.00	\$25.97	\$7.02	\$3.80	\$1.00	\$0.00	\$37.79

Apprentice to Journeyworker Ratio: 1:5

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 BRICKLAYERS LOCAL 3 (WORCESTER)	7/1/2024	\$49.19	\$13.35	\$16.43	\$7.78	\$1.80	\$88.55

Apprentice: CEMENT MASONRY/PLASTERING							
Effective Date: 7/1/2024							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$24.60	\$13.35	\$16.43	\$0.00	\$0.00	\$54.38
2	60.00	\$29.51	\$13.35	\$16.43	\$2.78	\$1.80	\$63.87
3	65.00	\$31.97	\$13.35	\$16.43	\$3.78	\$1.80	\$67.33
4	70.00	\$34.43	\$13.35	\$16.43	\$4.78	\$1.80	\$70.79
5	75.00	\$36.89	\$13.35	\$16.43	\$5.78	\$1.80	\$74.25
6	80.00	\$39.35	\$13.35	\$16.43	\$6.78	\$1.80	\$77.71
7	90.00	\$44.27	\$13.35	\$16.43	\$7.78	\$1.80	\$83.63

Apprentice to Journeyworker Ratio: 1:3

CHAIN SAW OPERATOR	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	6/1/2025	\$59.01	\$16.05	\$13.25	\$3.25	\$0.00	\$91.56
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$60.48	\$16.05	\$13.25	\$3.25	\$0.00	\$93.03
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$61.81	\$16.05	\$13.25	\$3.25	\$0.00	\$94.36
	12/1/2026	\$63.29	\$16.05	\$13.25	\$3.25	\$0.00	\$95.84

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

COMPRESSOR OPERATOR	6/1/2025	\$37.02	\$16.05	\$13.25	\$3.25	\$0.00	\$69.57
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$37.97	\$16.05	\$13.25	\$3.25	\$0.00	\$70.52
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$38.83	\$16.05	\$13.25	\$3.25	\$0.00	\$71.38
	12/1/2026	\$39.78	\$16.05	\$13.25	\$3.25	\$0.00	\$72.33

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

DELEADER (BRIDGE)	7/1/2025	\$58.51	\$10.30	\$11.95	\$12.50	\$0.00	\$93.26
PAINTERS LOCAL 35	1/1/2026	\$59.56	\$10.35	\$12.00	\$12.60	\$0.00	\$94.51
PAINTERS LOCAL 35 - ZONE 2							

Apprentice: DELEADER (BRIDGE)							
Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$29.26	\$10.30	\$0.00	\$0.00	\$0.00	\$39.56

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: DELEADER (BRIDGE)							
Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
2	55.00	\$32.18	\$10.30	\$0.00	\$6.88	\$0.00	\$49.36
3	60.00	\$35.11	\$10.30	\$0.00	\$7.50	\$0.00	\$52.91
4	65.00	\$38.03	\$10.30	\$0.00	\$8.13	\$0.00	\$56.46
5	70.00	\$40.96	\$10.30	\$11.95	\$8.75	\$0.00	\$71.96
6	75.00	\$43.88	\$10.30	\$11.95	\$9.38	\$0.00	\$75.51
7	80.00	\$46.81	\$10.30	\$11.95	\$10.00	\$0.00	\$79.06
8	90.00	\$52.66	\$10.30	\$11.95	\$11.25	\$0.00	\$86.16

Apprentice: DELEADER (BRIDGE)							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$29.78	\$10.35	\$0.00	\$0.00	\$0.00	\$40.13
2	55.00	\$32.76	\$10.35	\$0.00	\$6.93	\$0.00	\$50.04
3	60.00	\$35.74	\$10.35	\$0.00	\$7.56	\$0.00	\$53.65
4	65.00	\$38.71	\$10.35	\$0.00	\$8.19	\$0.00	\$57.25
5	70.00	\$41.69	\$10.35	\$12.00	\$8.82	\$0.00	\$72.86
6	75.00	\$44.67	\$10.35	\$12.00	\$9.45	\$0.00	\$76.47
7	80.00	\$47.65	\$10.35	\$12.00	\$10.08	\$0.00	\$80.08
8	90.00	\$53.60	\$10.35	\$12.00	\$11.34	\$0.00	\$87.29

Apprentice to Journeyworker Ratio: 1:1

DEMO: ADZEMAN	6/2/2025	\$47.25	\$10.15	\$9.50	\$9.65	\$0.00	\$76.55
LABORERS	12/1/2025	\$48.75	\$10.15	\$9.50	\$9.65	\$0.00	\$78.05
LABORERS - ZONE 2	6/1/2026	\$50.30	\$10.15	\$9.50	\$9.65	\$0.00	\$79.60
	12/7/2026	\$51.80	\$10.15	\$9.50	\$9.65	\$0.00	\$81.10
	6/7/2027	\$53.40	\$10.15	\$9.50	\$9.65	\$0.00	\$82.70
	12/6/2027	\$55.00	\$10.15	\$9.50	\$9.65	\$0.00	\$84.30
	6/5/2028	\$56.68	\$10.15	\$9.50	\$9.65	\$0.00	\$85.98
	12/4/2028	\$58.35	\$10.15	\$9.50	\$9.65	\$0.00	\$87.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BACKHOE/LOADER/HAMMER OPERATOR	6/2/2025	\$48.25	\$10.15	\$9.50	\$9.65	\$0.00	\$77.55
LABORERS	12/1/2025	\$49.75	\$10.15	\$9.50	\$9.65	\$0.00	\$79.05
LABORERS - ZONE 2	6/1/2026	\$51.30	\$10.15	\$9.50	\$9.65	\$0.00	\$80.60
	12/7/2026	\$52.80	\$10.15	\$9.50	\$9.65	\$0.00	\$82.10
	6/7/2027	\$54.40	\$10.15	\$9.50	\$9.65	\$0.00	\$83.70
	12/6/2027	\$56.00	\$10.15	\$9.50	\$9.65	\$0.00	\$85.30
	6/5/2028	\$57.68	\$10.15	\$9.50	\$9.65	\$0.00	\$86.98
	12/4/2028	\$59.35	\$10.15	\$9.50	\$9.65	\$0.00	\$88.65

For apprentice rates see "Apprentice- LABORER"

DEMO: BURNERS	6/2/2025	\$48.00	\$10.15	\$9.50	\$9.65	\$0.00	\$77.30
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Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
LABORERS	12/1/2025	\$49.50	\$10.15	\$9.50	\$9.65	\$0.00	\$78.80
LABORERS - ZONE 2	6/1/2026	\$51.05	\$10.15	\$9.50	\$9.65	\$0.00	\$80.35
	12/7/2026	\$52.55	\$10.15	\$9.50	\$9.65	\$0.00	\$81.85
	6/7/2027	\$54.15	\$10.15	\$9.50	\$9.65	\$0.00	\$83.45
	12/6/2027	\$55.75	\$10.15	\$9.50	\$9.65	\$0.00	\$85.05
	6/5/2028	\$57.43	\$10.15	\$9.50	\$9.65	\$0.00	\$86.73
	12/4/2028	\$59.10	\$10.15	\$9.50	\$9.65	\$0.00	\$88.40
For apprentice rates see "Apprentice- LABORER"							
DEMO: CONCRETE CUTTER/SAWYER	6/2/2025	\$48.25	\$10.15	\$9.50	\$9.65	\$0.00	\$77.55
LABORERS	12/1/2025	\$49.75	\$10.15	\$9.50	\$9.65	\$0.00	\$79.05
LABORERS - ZONE 2	6/1/2026	\$51.30	\$10.15	\$9.50	\$9.65	\$0.00	\$80.60
	12/7/2026	\$52.80	\$10.15	\$9.50	\$9.65	\$0.00	\$82.10
	6/7/2027	\$54.40	\$10.15	\$9.50	\$9.65	\$0.00	\$83.70
	12/6/2027	\$56.00	\$10.15	\$9.50	\$9.65	\$0.00	\$85.30
	6/5/2028	\$57.68	\$10.15	\$9.50	\$9.65	\$0.00	\$86.98
	12/4/2028	\$59.35	\$10.15	\$9.50	\$9.65	\$0.00	\$88.65
For apprentice rates see "Apprentice- LABORER"							
DEMO: JACKHAMMER OPERATOR	6/2/2025	\$48.00	\$10.15	\$9.50	\$9.65	\$0.00	\$77.30
LABORERS	12/1/2025	\$49.50	\$10.15	\$9.50	\$9.65	\$0.00	\$78.80
LABORERS - ZONE 2	6/1/2026	\$51.05	\$10.15	\$9.50	\$9.65	\$0.00	\$80.35
	12/7/2026	\$52.55	\$10.15	\$9.50	\$9.65	\$0.00	\$81.85
	6/7/2027	\$54.15	\$10.15	\$9.50	\$9.65	\$0.00	\$83.45
	12/6/2027	\$55.75	\$10.15	\$9.50	\$9.65	\$0.00	\$85.05
	6/5/2028	\$57.43	\$10.15	\$9.50	\$9.65	\$0.00	\$86.73
	12/4/2028	\$59.10	\$10.15	\$9.50	\$9.65	\$0.00	\$88.40
For apprentice rates see "Apprentice- LABORER"							
DEMO: WRECKING LABORER	6/2/2025	\$47.25	\$10.15	\$9.50	\$9.65	\$0.00	\$76.55
LABORERS	12/1/2025	\$48.75	\$10.15	\$9.50	\$9.65	\$0.00	\$78.05
LABORERS - ZONE 2	6/1/2026	\$50.30	\$10.15	\$9.50	\$9.65	\$0.00	\$79.60
	12/7/2026	\$51.80	\$10.15	\$9.50	\$9.65	\$0.00	\$81.10
	6/7/2027	\$53.40	\$10.15	\$9.50	\$9.65	\$0.00	\$82.70
	12/6/2027	\$55.00	\$10.15	\$9.50	\$9.65	\$0.00	\$84.30
	6/5/2028	\$56.68	\$10.15	\$9.50	\$9.65	\$0.00	\$85.98
	12/4/2028	\$58.35	\$10.15	\$9.50	\$9.65	\$0.00	\$87.65
For apprentice rates see "Apprentice- LABORER"							
DIRECTIONAL DRILL MACHINE OPERATOR	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
DIVER	8/1/2024	\$78.11	\$10.08	\$11.62	\$12.67	\$0.00	\$112.48
PILE DRIVER LOCAL 56							
PILE DRIVER LOCAL 56 (ZONE 2)							
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Diver wage 70/80/90 2A \$69.83, 3A \$91.79,4A \$102.14 Total Rate							
DIVER TENDER	8/1/2024	\$51.97	\$10.08	\$11.62	\$12.67	\$0.00	\$86.34

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
PILE DRIVER LOCAL 56							
PILE DRIVER LOCAL 56 (ZONE 2)							
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Piledriver wage 70/80/90 2A \$54.20, 3A \$73.93,4A \$82.05 Total Rate							
DIVER TENDER (EFFLUENT)	8/1/2024	\$83.69	\$10.08	\$11.62	\$12.67	\$0.00	\$118.06
PILE DRIVER LOCAL 56							
PILE DRIVER LOCAL 56 (ZONE 2)							
For apprentice rates see "Apprentice- PILE DRIVER"							
DIVER/SLURRY (EFFLUENT)	8/1/2024	\$117.16	\$10.08	\$11.62	\$12.67	\$0.00	\$151.53
PILE DRIVER LOCAL 56							
PILE DRIVER LOCAL 56 (ZONE 2)							
For apprentice rates see "Apprentice- PILE DRIVER"							
DRAWBRIDGE OPERATOR (Construction)	7/1/2020	\$26.77	\$6.67	\$3.93	\$0.00	\$0.16	\$37.53
DRAWBRIDGE - SEIU LOCAL 888							
DRAWBRIDGE - SEIU LOCAL 888							
ELECTRICIAN	9/7/2025	\$48.16	\$14.98	\$14.30	\$5.30	\$0.00	\$82.74
ELECTRICIANS LOCAL 96	9/6/2026	\$49.38	\$15.96	\$14.57	\$5.43	\$0.00	\$85.34
ELECTRICIANS LOCAL 96							

Apprentice: ELECTRICIAN							
Effective Date: 9/7/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	40.00	\$19.26	\$14.98	\$0.58	\$0.00	\$0.00	\$34.82
2	45.00	\$21.67	\$14.98	\$0.65	\$0.00	\$0.00	\$37.30
3	48.00	\$23.12	\$14.98	\$13.55	\$2.54	\$0.00	\$54.19
4	55.00	\$26.49	\$14.98	\$13.65	\$2.92	\$0.00	\$58.04
5	65.00	\$31.30	\$14.98	\$13.80	\$3.45	\$0.00	\$63.53
6	80.00	\$38.53	\$14.98	\$14.02	\$4.24	\$0.00	\$71.77

Apprentice: ELECTRICIAN							
Effective Date: 9/6/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	40.00	\$19.75	\$15.96	\$0.59	\$0.00	\$0.00	\$36.30
2	45.00	\$22.22	\$15.96	\$0.67	\$0.00	\$0.00	\$38.85
3	48.00	\$23.70	\$15.96	\$13.80	\$2.61	\$0.00	\$56.07
4	55.00	\$27.16	\$15.96	\$13.90	\$2.99	\$0.00	\$60.01
5	65.00	\$32.10	\$15.96	\$14.05	\$3.53	\$0.00	\$65.64
6	80.00	\$39.50	\$15.96	\$14.28	\$4.35	\$0.00	\$74.09

Apprentice to Journeyworker Ratio: 2:3

ELEVATOR CONSTRUCTOR	1/1/2025	\$66.41	\$16.28	\$10.96	\$10.40	\$0.00	\$104.05
ELEVATOR CONSTRUCTORS LOCAL 41	1/1/2026	\$69.23	\$16.38	\$11.06	\$10.70	\$0.00	\$107.37
ELEVATOR CONSTRUCTORS LOCAL 41	1/1/2027	\$72.23	\$16.48	\$11.16	\$11.00	\$0.00	\$110.87

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: ELEVATOR CONSTRUCTOR							
Effective Date: 1/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$33.21	\$16.28	\$0.00	\$0.00	\$0.00	\$49.49
2	55.00	\$36.53	\$16.28	\$10.96	\$10.40	\$0.00	\$74.17
3	65.00	\$43.17	\$16.28	\$10.96	\$10.40	\$0.00	\$80.81
4	70.00	\$46.49	\$16.28	\$10.96	\$10.40	\$0.00	\$84.13
5	80.00	\$53.13	\$16.28	\$10.96	\$10.40	\$0.00	\$90.77
Apprentice: ELEVATOR CONSTRUCTOR							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$34.62	\$16.38	\$0.00	\$0.00	\$0.00	\$51.00
2	55.00	\$38.08	\$16.38	\$11.06	\$10.70	\$0.00	\$76.22
3	65.00	\$45.00	\$16.38	\$11.06	\$10.70	\$0.00	\$83.14
4	70.00	\$48.46	\$16.38	\$11.06	\$10.70	\$0.00	\$86.60
5	80.00	\$55.38	\$16.38	\$11.06	\$10.70	\$0.00	\$93.52
Apprentice to Journeyworker Ratio: 1:1							
ELEVATOR CONSTRUCTOR HELPER	1/1/2025	\$46.49	\$16.28	\$10.96	\$10.40	\$0.00	\$84.13
ELEVATOR CONSTRUCTORS LOCAL 41	1/1/2026	\$48.46	\$16.38	\$11.06	\$10.70	\$0.00	\$86.60
ELEVATOR CONSTRUCTORS LOCAL 41	1/1/2027	\$50.56	\$16.48	\$11.16	\$11.00	\$0.00	\$89.20
For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"							
FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY)	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.21	\$0.00	\$68.95
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.21	\$0.00	\$70.33
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.21	\$0.00	\$71.77
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.21	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY	11/1/2025	\$53.76	\$15.85	\$13.15	\$3.25	\$0.00	\$86.01
OPERATING ENGINEERS LOCAL 4	5/1/2026	\$55.20	\$15.85	\$13.15	\$3.25	\$0.00	\$87.45
OPERATING ENGINEERS LOCAL 4	11/1/2026	\$56.49	\$15.85	\$13.15	\$3.25	\$0.00	\$88.74
	5/1/2027	\$57.92	\$15.85	\$13.15	\$3.25	\$0.00	\$90.17
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY	11/1/2025	\$55.37	\$15.85	\$13.15	\$3.25	\$0.00	\$87.62
OPERATING ENGINEERS LOCAL 4	5/1/2026	\$56.82	\$15.85	\$13.15	\$3.25	\$0.00	\$89.07
OPERATING ENGINEERS LOCAL 4	11/1/2026	\$58.12	\$15.85	\$13.15	\$3.25	\$0.00	\$90.37
	5/1/2027	\$59.57	\$15.85	\$13.15	\$3.25	\$0.00	\$91.82
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY	11/1/2025	\$26.23	\$15.85	\$13.15	\$3.25	\$0.00	\$58.48
OPERATING ENGINEERS LOCAL 4	5/1/2026	\$27.08	\$15.85	\$13.15	\$3.25	\$0.00	\$59.33

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
OPERATING ENGINEERS LOCAL 4	11/1/2026	\$27.84	\$15.85	\$13.15	\$3.25	\$0.00	\$60.09
	5/1/2027	\$28.69	\$15.85	\$13.15	\$3.25	\$0.00	\$60.94
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
FIRE ALARM INSTALLER	9/7/2025	\$48.16	\$14.98	\$14.30	\$5.30	\$0.00	\$82.74
ELECTRICIANS LOCAL 96	9/6/2026	\$49.38	\$15.96	\$14.57	\$5.43	\$0.00	\$85.34
ELECTRICIANS LOCAL 96							
For apprentice rates see "Apprentice- ELECTRICIAN"							
FIRE ALARM REPAIR / MAINT/COMMISSIONING	9/7/2025	\$48.16	\$14.98	\$14.30	\$5.30	\$0.00	\$82.74
ELECTRICIANS LOCAL 96	9/6/2026	\$49.38	\$15.96	\$14.57	\$5.43	\$0.00	\$85.34
ELECTRICIANS LOCAL 96							
For apprentice rates see "Apprentice- ELECTRICIAN"							
FIREMAN (ASST. ENGINEER)	6/1/2025	\$46.52	\$16.05	\$13.25	\$3.25	\$0.00	\$79.07
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$47.69	\$16.05	\$13.25	\$3.25	\$0.00	\$80.24
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$48.75	\$16.05	\$13.25	\$3.25	\$0.00	\$81.30
	12/1/2026	\$49.93	\$16.05	\$13.25	\$3.25	\$0.00	\$82.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
FLAGGER & SIGNALER (HEAVY & HIGHWAY)	6/1/2025	\$28.09	\$10.15	\$9.50	\$9.21	\$0.00	\$56.95
LABORERS	12/1/2025	\$28.09	\$10.15	\$9.50	\$9.21	\$0.00	\$56.95
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$29.21	\$10.15	\$9.50	\$9.21	\$0.00	\$58.07
	12/1/2026	\$29.21	\$10.15	\$9.50	\$9.21	\$0.00	\$58.07
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
FLOORCOVERER	3/1/2024	\$48.93	\$10.33	\$11.47	\$8.80	\$0.00	\$79.53
FLOORCOVERERS LOCAL 2168							
FLOORCOVERERS LOCAL 2168 ZONE II							

Apprentice: FLOORCOVERER

Effective Date: 3/1/2024

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

Apprentice Notes

Steps are 750 hrs.

Apprentice to Journeyworker Ratio: 1:1

FORK LIFT/CHERRY PICKER	6/1/2025	\$57.83	\$16.05	\$13.25	\$3.25	\$0.00	\$90.38
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$59.28	\$16.05	\$13.25	\$3.25	\$0.00	\$91.83

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$60.58	\$16.05	\$13.25	\$3.25	\$0.00	\$93.13
	12/1/2026	\$62.03	\$16.05	\$13.25	\$3.25	\$0.00	\$94.58

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GENERATOR/LIGHTING PLANT/HEATERS	6/1/2025	\$37.02	\$16.05	\$13.25	\$3.25	\$0.00	\$69.57
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$37.97	\$16.05	\$13.25	\$3.25	\$0.00	\$70.52
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$38.83	\$16.05	\$13.25	\$3.25	\$0.00	\$71.38
	12/1/2026	\$39.78	\$16.05	\$13.25	\$3.25	\$0.00	\$72.33

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)	7/1/2025	\$48.01	\$10.30	\$11.95	\$12.50	\$0.00	\$82.76
GLAZIERS LOCAL 35	1/1/2026	\$49.06	\$10.35	\$12.00	\$12.60	\$0.00	\$84.01
GLAZIERS LOCAL 35 (ZONE 2)							

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

Effective Date: 7/1/2025

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$24.01	\$10.30	\$0.00	\$0.00	\$0.00	\$34.31
2	55.00	\$26.41	\$10.30	\$0.00	\$6.88	\$0.00	\$43.59
3	60.00	\$28.81	\$10.30	\$0.00	\$7.50	\$0.00	\$46.61
4	65.00	\$31.21	\$10.30	\$0.00	\$8.13	\$0.00	\$49.64
5	70.00	\$33.61	\$10.30	\$11.95	\$8.75	\$0.00	\$64.61
6	75.00	\$36.01	\$10.30	\$11.95	\$9.38	\$0.00	\$67.64
7	80.00	\$38.41	\$10.30	\$11.95	\$10.00	\$0.00	\$70.66
8	90.00	\$43.21	\$10.30	\$11.95	\$11.25	\$0.00	\$76.71

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

Effective Date: 1/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$24.53	\$10.30	\$0.00	\$0.00	\$0.00	\$34.83
2	55.00	\$26.98	\$10.30	\$0.00	\$6.88	\$0.00	\$44.16
3	60.00	\$29.44	\$10.30	\$0.00	\$7.50	\$0.00	\$47.24
4	65.00	\$31.89	\$10.30	\$0.00	\$8.13	\$0.00	\$50.32
5	70.00	\$34.34	\$10.30	\$11.95	\$8.75	\$0.00	\$65.34
6	75.00	\$36.80	\$10.30	\$11.95	\$9.38	\$0.00	\$68.43
7	80.00	\$39.25	\$10.30	\$11.95	\$10.00	\$0.00	\$71.50
8	90.00	\$44.15	\$10.30	\$11.95	\$11.25	\$0.00	\$77.65

Apprentice to Journeyworker Ratio: 1:1

HOISTING ENGINEER/CRANES/GRADALLS	6/1/2025	\$57.83	\$16.05	\$13.25	\$3.25	\$0.00	\$90.38
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$59.28	\$16.05	\$13.25	\$3.25	\$0.00	\$91.83
	6/1/2026	\$60.58	\$16.05	\$13.25	\$3.25	\$0.00	\$93.13
OPERATING ENGINEERS LOCAL 4	12/1/2026	\$62.03	\$16.05	\$13.25	\$3.25	\$0.00	\$94.58

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: HOISTING ENGINEER/CRANES/GRADALLS							
Effective Date: 6/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	55.00	\$31.81	\$0.00	\$0.00	\$0.00	\$0.00	\$31.81
2	60.00	\$34.70	\$15.55	\$13.25	\$3.25	\$0.00	\$66.75
3	65.00	\$37.59	\$15.55	\$13.25	\$3.25	\$0.00	\$69.64
4	70.00	\$40.48	\$15.55	\$13.25	\$3.25	\$0.00	\$72.53
5	75.00	\$43.37	\$15.55	\$13.25	\$3.25	\$0.00	\$75.42
6	80.00	\$46.26	\$15.55	\$13.25	\$3.25	\$0.00	\$78.31
7	85.00	\$49.16	\$15.55	\$13.25	\$3.25	\$0.00	\$81.21
8	90.00	\$52.05	\$15.55	\$13.25	\$3.25	\$0.00	\$84.10
Apprentice: HOISTING ENGINEER/CRANES/GRADALLS							
Effective Date: 12/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	55.00	\$32.88	\$0.00	\$0.00	\$0.00	\$0.00	\$32.88
2	60.00	\$35.87	\$15.55	\$13.25	\$3.25	\$0.00	\$67.92
3	65.00	\$38.86	\$15.55	\$13.25	\$3.25	\$0.00	\$70.91
4	70.00	\$41.85	\$15.55	\$13.25	\$3.25	\$0.00	\$73.90
5	75.00	\$44.84	\$15.55	\$13.25	\$3.25	\$0.00	\$76.89
6	80.00	\$47.82	\$15.55	\$13.25	\$3.25	\$0.00	\$79.87
7	85.00	\$50.81	\$15.55	\$13.25	\$3.25	\$0.00	\$82.86
8	90.00	\$53.80	\$15.55	\$13.25	\$3.25	\$0.00	\$85.85
Apprentice to Journeyworker Ratio: 1:6							
HVAC (DUCTWORK)	7/1/2025	\$43.48	\$12.94	\$11.01	\$8.72	\$2.13	\$78.28
SHEETMETAL WORKERS LOCAL 63	7/1/2026	\$43.48	\$13.24	\$11.01	\$9.92	\$2.13	\$79.78
SHEETMETAL WORKERS LOCAL 63	1/1/2027	\$43.48	\$13.54	\$11.01	\$11.12	\$2.13	\$81.28
	7/1/2027	\$44.98	\$13.54	\$11.01	\$11.12	\$2.13	\$82.78
	1/1/2028	\$46.48	\$13.54	\$11.01	\$11.12	\$2.13	\$84.28
For apprentice rates see "Apprentice- SHEET METAL WORKER"							
HVAC (ELECTRICAL CONTROLS)	9/7/2025	\$48.16	\$14.98	\$14.30	\$5.30	\$0.00	\$82.74
ELECTRICIANS LOCAL 96	9/6/2026	\$49.38	\$15.96	\$14.57	\$5.43	\$0.00	\$85.34
ELECTRICIANS LOCAL 96							
For apprentice rates see "Apprentice- ELECTRICIAN"							
HVAC (TESTING AND BALANCING - AIR)	7/1/2025	\$43.48	\$12.94	\$11.01	\$8.72	\$2.13	\$78.28
SHEETMETAL WORKERS LOCAL 63	7/1/2026	\$43.48	\$13.24	\$11.01	\$9.92	\$2.13	\$79.78
SHEETMETAL WORKERS LOCAL 63	1/1/2027	\$43.48	\$13.54	\$11.01	\$11.12	\$2.13	\$81.28
	7/1/2027	\$44.98	\$13.54	\$11.01	\$11.12	\$2.13	\$82.78
	1/1/2028	\$46.48	\$13.54	\$11.01	\$11.12	\$2.13	\$84.28
For apprentice rates see "Apprentice- SHEET METAL WORKER"							
HVAC (TESTING AND BALANCING -WATER)	9/1/2025	\$55.00	\$12.70	\$9.71	\$8.06	\$0.00	\$85.47

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
PLUMBERS LOCAL 4	3/1/2026	\$57.80	\$11.30	\$9.71	\$8.06	\$0.00	\$86.87
PLUMBERS LOCAL 4							
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"							
HVAC MECHANIC	9/1/2025	\$55.00	\$12.70	\$9.71	\$8.06	\$0.00	\$85.47
PLUMBERS LOCAL 4	3/1/2026	\$57.80	\$11.30	\$9.71	\$8.06	\$0.00	\$86.87
PLUMBERS LOCAL 4							
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"							
HYDRAULIC DRILLS	6/1/2025	\$40.59	\$10.15	\$9.50	\$9.11	\$0.00	\$69.35
LABORERS	12/1/2025	\$41.97	\$10.15	\$9.50	\$9.11	\$0.00	\$70.73
LABORERS - ZONE 2	6/1/2026	\$43.41	\$10.15	\$9.50	\$9.11	\$0.00	\$72.17
	12/1/2026	\$44.85	\$10.15	\$9.50	\$9.11	\$0.00	\$73.61
	6/1/2027	\$46.30	\$10.15	\$9.50	\$9.11	\$0.00	\$75.06
	12/1/2027	\$47.75	\$10.15	\$9.50	\$9.11	\$0.00	\$76.51
	6/1/2028	\$49.25	\$10.15	\$9.50	\$9.11	\$0.00	\$78.01
	12/1/2028	\$50.75	\$10.15	\$9.50	\$9.11	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"							
HYDRAULIC DRILLS (HEAVY & HIGHWAY)	6/1/2025	\$40.59	\$10.15	\$9.50	\$9.21	\$0.00	\$69.45
LABORERS	12/1/2025	\$41.97	\$10.15	\$9.50	\$9.21	\$0.00	\$70.83
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$43.41	\$10.15	\$9.50	\$9.21	\$0.00	\$72.27
	12/1/2026	\$44.85	\$10.15	\$9.50	\$9.21	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
INSULATOR (PIPES & TANKS)	9/1/2025	\$54.31	\$14.75	\$9.52	\$10.09	\$0.00	\$88.67
HEAT & FROST INSULATORS LOCAL 6	9/1/2026	\$57.38	\$14.75	\$9.52	\$10.09	\$0.00	\$91.74
HEAT & FROST INSULATORS LOCAL 6 (WORCESTER)							

Apprentice: INSULATOR (PIPES & TANKS)

Effective Date: 9/1/2025

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$27.16	\$14.75	\$9.27	\$5.05	\$0.00	\$56.23
2	60.00	\$32.59	\$14.75	\$9.32	\$6.05	\$0.00	\$62.71
3	70.00	\$38.02	\$14.75	\$9.37	\$7.06	\$0.00	\$69.20
4	80.00	\$43.45	\$14.75	\$9.42	\$8.07	\$0.00	\$75.69

Apprentice: INSULATOR (PIPES & TANKS)

Effective Date: 9/1/2026

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$28.69	\$14.75	\$9.27	\$5.05	\$0.00	\$57.76
2	60.00	\$34.43	\$14.75	\$9.32	\$6.05	\$0.00	\$64.55
3	70.00	\$40.17	\$14.75	\$9.37	\$7.06	\$0.00	\$71.35
4	80.00	\$45.90	\$14.75	\$9.42	\$8.07	\$0.00	\$78.14

Apprentice to Journeyworker Ratio: 1:4

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
IRONWORKER/WELDER	9/16/2025	\$57.57	\$9.05	\$12.75	\$14.50	\$0.00	\$93.87
IRONWORKERS LOCAL 7							
IRONWORKERS LOCAL 7 (WORCESTER AREA)							

Apprentice: IRONWORKER/WELDER							
Effective Date: 9/16/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	\$34.54	\$9.05	\$12.75	\$4.50	\$0.00	\$60.84
2	75.00	\$43.18	\$9.05	\$12.75	\$4.50	\$0.00	\$69.48
3	85.00	\$48.93	\$9.05	\$12.75	\$4.50	\$0.00	\$75.23

Apprentice to Journeyworker Ratio: 1:4

JACKHAMMER & PAVING BREAKER OPERATOR	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

LABORER	6/1/2025	\$39.84	\$10.15	\$9.50	\$9.11	\$0.00	\$68.60
LABORERS	12/1/2025	\$41.22	\$10.15	\$9.50	\$9.11	\$0.00	\$69.98
LABORERS - ZONE 2	6/1/2026	\$42.66	\$10.15	\$9.50	\$9.11	\$0.00	\$71.42
	12/1/2026	\$44.10	\$10.15	\$9.50	\$9.11	\$0.00	\$72.86
	6/1/2027	\$45.55	\$10.15	\$9.50	\$9.11	\$0.00	\$74.31
	12/1/2027	\$47.00	\$10.15	\$9.50	\$9.11	\$0.00	\$75.76
	6/1/2028	\$48.50	\$10.15	\$9.50	\$9.11	\$0.00	\$77.26
	12/1/2028	\$50.00	\$10.15	\$9.50	\$9.11	\$0.00	\$78.76

Apprentice: LABORER							
Effective Date: 6/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	\$23.90	\$10.15	\$9.50	\$9.11	\$0.00	\$52.66
2	70.00	\$27.89	\$10.15	\$9.50	\$9.11	\$0.00	\$56.65
3	80.00	\$31.87	\$10.15	\$9.50	\$9.11	\$0.00	\$60.63
4	90.00	\$35.86	\$10.15	\$9.50	\$9.11	\$0.00	\$64.62

Apprentice: LABORER							
Effective Date: 12/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	\$25.03	\$10.15	\$9.50	\$9.11	\$0.00	\$53.79

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: LABORER							
Effective Date: 12/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
2	70.00	\$29.20	\$10.15	\$9.50	\$9.11	\$0.00	\$57.96
3	80.00	\$33.38	\$10.15	\$9.50	\$9.11	\$0.00	\$62.14
4	90.00	\$37.55	\$10.15	\$9.50	\$9.11	\$0.00	\$66.31

Apprentice to Journeyworker Ratio: 1:5

LABORER (HEAVY & HIGHWAY)	6/1/2025	\$39.84	\$10.15	\$9.50	\$9.21	\$0.00	\$68.70
LABORERS	12/1/2025	\$41.22	\$10.15	\$9.50	\$9.21	\$0.00	\$70.08
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$42.66	\$10.15	\$9.50	\$9.21	\$0.00	\$71.52
	12/1/2026	\$44.10	\$10.15	\$9.50	\$9.21	\$0.00	\$72.96

Apprentice: LABORER (HEAVY & HIGHWAY)							
Effective Date: 6/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	\$23.90	\$10.15	\$9.50	\$9.21	\$0.00	\$52.76
2	70.00	\$27.89	\$10.15	\$9.50	\$9.21	\$0.00	\$56.75
3	80.00	\$31.87	\$10.15	\$9.50	\$9.21	\$0.00	\$60.73
4	90.00	\$35.86	\$10.15	\$9.50	\$9.21	\$0.00	\$64.72

Apprentice: LABORER (HEAVY & HIGHWAY)							
Effective Date: 12/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	60.00	\$25.03	\$9.90	\$9.25	\$9.21	\$0.00	\$53.39
2	70.00	\$29.20	\$9.90	\$9.25	\$9.21	\$0.00	\$57.56
3	80.00	\$33.38	\$9.90	\$9.25	\$9.21	\$0.00	\$61.74
4	90.00	\$37.55	\$9.90	\$9.25	\$9.21	\$0.00	\$65.91

Apprentice to Journeyworker Ratio: 1:5

LABORER: CARPENTER TENDER	6/1/2025	\$39.84	\$10.15	\$9.50	\$9.11	\$0.00	\$68.60
LABORERS	12/1/2025	\$41.22	\$10.15	\$9.50	\$9.11	\$0.00	\$69.98
LABORERS - ZONE 2	6/1/2026	\$42.66	\$10.15	\$9.50	\$9.11	\$0.00	\$71.42
	12/1/2026	\$44.10	\$10.15	\$9.50	\$9.11	\$0.00	\$72.86
	6/1/2027	\$45.55	\$10.15	\$9.50	\$9.11	\$0.00	\$74.31
	12/1/2027	\$47.00	\$10.15	\$9.50	\$9.11	\$0.00	\$75.76
	6/1/2028	\$48.50	\$10.15	\$9.50	\$9.11	\$0.00	\$77.26
	12/1/2028	\$50.00	\$10.15	\$9.50	\$9.11	\$0.00	\$78.76

For apprentice rates see "Apprentice- LABORER"

LABORER: CEMENT FINISHER TENDER	6/1/2025	\$39.84	\$10.15	\$9.50	\$9.11	\$0.00	\$68.60
LABORERS	12/1/2025	\$41.22	\$10.15	\$9.50	\$9.11	\$0.00	\$69.98

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
LABORERS - ZONE 2	6/1/2026	\$42.66	\$10.15	\$9.50	\$9.11	\$0.00	\$71.42
	12/1/2026	\$44.10	\$10.15	\$9.50	\$9.11	\$0.00	\$72.86
	6/1/2027	\$45.55	\$10.15	\$9.50	\$9.11	\$0.00	\$74.31
	12/1/2027	\$47.00	\$10.15	\$9.50	\$9.11	\$0.00	\$75.76
	6/1/2028	\$48.50	\$10.15	\$9.50	\$9.11	\$0.00	\$77.26
	12/1/2028	\$50.00	\$10.15	\$9.50	\$9.11	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"							
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER LABORERS LABORERS - ZONE 2	6/2/2025	\$39.93	\$10.15	\$9.50	\$9.65	\$0.00	\$69.23
	12/1/2025	\$41.31	\$10.15	\$9.50	\$9.65	\$0.00	\$70.61
	6/1/2026	\$42.75	\$10.15	\$9.50	\$9.65	\$0.00	\$72.05
	12/7/2026	\$44.19	\$10.15	\$9.50	\$9.65	\$0.00	\$73.49
	6/7/2027	\$45.64	\$10.15	\$9.50	\$9.65	\$0.00	\$74.94
	12/6/2027	\$47.09	\$10.15	\$9.50	\$9.65	\$0.00	\$76.39
	6/5/2028	\$48.59	\$10.15	\$9.50	\$9.65	\$0.00	\$77.89
	12/4/2028	\$50.09	\$10.15	\$9.50	\$9.65	\$0.00	\$79.39
For apprentice rates see "Apprentice- LABORER"							
LABORER: MASON TENDER LABORERS LABORERS - ZONE 2	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"							
LABORER: MASON TENDER (HEAVY & HIGHWAY) LABORERS LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.21	\$0.00	\$68.95
	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.21	\$0.00	\$70.33
	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.21	\$0.00	\$71.77
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.21	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
LABORER: MULTI-TRADE TENDER LABORERS LABORERS - ZONE 2	6/1/2025	\$39.84	\$10.15	\$9.50	\$9.11	\$0.00	\$68.60
	12/1/2025	\$41.22	\$10.15	\$9.50	\$9.11	\$0.00	\$69.98
	6/1/2026	\$42.66	\$10.15	\$9.50	\$9.11	\$0.00	\$71.42
	12/1/2026	\$44.10	\$10.15	\$9.50	\$9.11	\$0.00	\$72.86
	6/1/2027	\$45.55	\$10.15	\$9.50	\$9.11	\$0.00	\$74.31
	12/1/2027	\$47.00	\$10.15	\$9.50	\$9.11	\$0.00	\$75.76
	6/1/2028	\$48.50	\$10.15	\$9.50	\$9.11	\$0.00	\$77.26
	12/1/2028	\$50.00	\$10.15	\$9.50	\$9.11	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"							
LABORER: TREE REMOVER LABORERS LABORERS - ZONE 2	6/1/2025	\$39.84	\$10.15	\$9.50	\$9.11	\$0.00	\$68.60
	12/1/2025	\$41.22	\$10.15	\$9.50	\$9.11	\$0.00	\$69.98
	6/1/2026	\$42.66	\$10.15	\$9.50	\$9.11	\$0.00	\$71.42
	12/1/2026	\$44.10	\$10.15	\$9.50	\$9.11	\$0.00	\$72.86
	6/1/2027	\$45.55	\$10.15	\$9.50	\$9.11	\$0.00	\$74.31
	12/1/2027	\$47.00	\$10.15	\$9.50	\$9.11	\$0.00	\$75.76
	6/1/2028	\$48.50	\$10.15	\$9.50	\$9.11	\$0.00	\$77.26

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	12/1/2028	\$50.00	\$10.15	\$9.50	\$9.11	\$0.00	\$78.76

This classification applies to the removal of standing trees, and the trimming and removal of branches and limbs when related to public works construction or site clearance incidental to construction . For apprentice rates see "Apprentice- LABORER"

LASER BEAM OPERATOR	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

LASER BEAM OPERATOR (HEAVY & HIGHWAY)	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.21	\$0.00	\$68.95
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.21	\$0.00	\$70.33
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.21	\$0.00	\$71.77
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.21	\$0.00	\$73.21

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

MARBLE & TILE FINISHERS	8/1/2025	\$52.08	\$11.49	\$15.57	\$6.05	\$0.00	\$85.19
BRICKLAYERS LOCAL 3	2/1/2026	\$53.16	\$11.49	\$15.57	\$6.05	\$0.00	\$86.27
BRICKLAYERS LOCAL 3 - MARBLE & TILE	8/1/2026	\$54.92	\$11.49	\$15.57	\$6.05	\$0.00	\$88.03
	2/1/2027	\$56.04	\$11.49	\$15.57	\$6.05	\$0.00	\$89.15

Apprentice: MARBLE & TILE FINISHERS							
Effective Date: 8/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$26.04	\$11.49	\$15.57	\$6.05	\$0.00	\$59.15
2	60.00	\$31.25	\$11.49	\$15.57	\$6.05	\$0.00	\$64.36
3	70.00	\$36.46	\$11.49	\$15.57	\$6.05	\$0.00	\$69.57
4	80.00	\$41.66	\$11.49	\$15.57	\$6.05	\$0.00	\$74.77
5	90.00	\$46.87	\$11.49	\$15.57	\$6.05	\$0.00	\$79.98

Apprentice: MARBLE & TILE FINISHERS							
Effective Date: 2/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$26.58	\$11.49	\$15.57	\$6.05	\$0.00	\$59.69
2	60.00	\$31.90	\$11.49	\$15.57	\$6.05	\$0.00	\$65.01
3	70.00	\$37.21	\$11.49	\$15.57	\$6.05	\$0.00	\$70.32
4	80.00	\$42.53	\$11.49	\$15.57	\$6.05	\$0.00	\$75.64
5	90.00	\$47.84	\$11.49	\$15.57	\$6.05	\$0.00	\$80.95

Apprentice to Journeyworker Ratio: 1:5

MARBLE MASONS,TILELAYERS & TERRAZZO MECH	8/1/2025	\$67.97	\$11.49	\$15.57	\$7.99	\$0.00	\$103.02
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Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
BRICKLAYERS LOCAL 3	2/1/2026	\$69.32	\$11.49	\$15.57	\$7.99	\$0.00	\$104.37
BRICKLAYERS LOCAL 3 - MARBLE & TILE	8/1/2026	\$71.52	\$11.49	\$15.57	\$7.99	\$0.00	\$106.57
	2/1/2027	\$72.92	\$11.49	\$15.57	\$7.99	\$0.00	\$107.97

Apprentice: MARBLE MASONS,TILELAYERS & TERRAZZO MECH**Effective Date: 8/1/2025**

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$33.99	\$11.49	\$15.57	\$7.99	\$0.00	\$69.04
2	60.00	\$40.78	\$11.49	\$15.57	\$7.99	\$0.00	\$75.83
3	70.00	\$47.58	\$11.49	\$15.57	\$7.99	\$0.00	\$82.63
4	80.00	\$54.38	\$11.49	\$15.57	\$7.99	\$0.00	\$89.43
5	90.00	\$61.17	\$11.49	\$15.57	\$7.99	\$0.00	\$96.22

Apprentice: MARBLE MASONS,TILELAYERS & TERRAZZO MECH**Effective Date: 2/1/2026**

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$34.66	\$11.49	\$15.57	\$7.99	\$0.00	\$69.71
2	60.00	\$41.59	\$11.49	\$15.57	\$7.99	\$0.00	\$76.64
3	70.00	\$48.52	\$11.49	\$15.57	\$7.99	\$0.00	\$83.57
4	80.00	\$55.46	\$11.49	\$15.57	\$7.99	\$0.00	\$90.51
5	90.00	\$62.39	\$11.49	\$15.57	\$7.99	\$0.00	\$97.44

Apprentice to Journeyworker Ratio: 1:5

MECH. SWEEPER OPERATOR (ON CONST. SITES)	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MECHANICS MAINTENANCE	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

MILLWRIGHT (Zone 3)	1/6/2025	\$43.42	\$10.08	\$11.47	\$9.75	\$0.00	\$74.72
MILLWRIGHTS LOCAL 1121	1/5/2026	\$45.70	\$10.08	\$11.47	\$9.75	\$0.00	\$77.00
MILLWRIGHTS LOCAL 1121 - Zone 3							

Apprentice: MILLWRIGHT (Zone 3)**Effective Date: 1/6/2025**

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	55.00	\$23.88	\$10.08	\$0.00	\$5.36	\$0.00	\$39.32

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: MILLWRIGHT (Zone 3) Effective Date: 1/6/2025							
		Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
2	65.00	\$28.22	\$10.08	\$0.00	\$6.34	\$0.00	\$44.64
3	75.00	\$32.57	\$10.08	\$11.47	\$7.31	\$0.00	\$61.43
4	85.00	\$36.91	\$10.08	\$11.47	\$8.29	\$0.00	\$66.75
Apprentice: MILLWRIGHT (Zone 3) Effective Date: 1/5/2026							
		Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	55.00	\$25.14	\$10.08	\$0.00	\$5.36	\$0.00	\$40.58
2	65.00	\$29.71	\$10.08	\$0.00	\$6.34	\$0.00	\$46.13
3	75.00	\$34.28	\$10.08	\$11.47	\$7.31	\$0.00	\$63.14
4	85.00	\$38.85	\$10.08	\$11.47	\$8.29	\$0.00	\$68.69
Apprentice Notes Step 1&2 Appr. indentured after 1/6/2020 receive no pension,							
Apprentice to Journeyworker Ratio: 1:4							
MORTAR MIXER	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"							
OILER (OTHER THAN TRUCK CRANES,GRADALLS)	6/1/2025	\$25.02	\$16.05	\$13.25	\$3.25	\$0.00	\$57.57
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$25.68	\$16.05	\$13.25	\$3.25	\$0.00	\$58.23
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$26.27	\$16.05	\$13.25	\$3.25	\$0.00	\$58.82
	12/1/2026	\$26.94	\$16.05	\$13.25	\$3.25	\$0.00	\$59.49
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
OILER (TRUCK CRANES, GRADALLS)	6/1/2025	\$30.85	\$16.05	\$13.25	\$3.25	\$0.00	\$63.40
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$31.65	\$16.05	\$13.25	\$3.25	\$0.00	\$64.20
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$32.37	\$16.05	\$13.25	\$3.25	\$0.00	\$64.92
	12/1/2026	\$33.17	\$16.05	\$13.25	\$3.25	\$0.00	\$65.72
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
OTHER POWER DRIVEN EQUIPMENT - CLASS II	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS)	7/1/2025	\$58.51	\$10.30	\$11.95	\$12.50	\$0.00	\$93.26
PAINTERS LOCAL 35	1/1/2026	\$59.56	\$10.35	\$12.00	\$12.50	\$0.00	\$94.41
PAINTERS LOCAL 35 - ZONE 2							

Apprentice: PAINTER (BRIDGES/TANKS)							
Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$29.26	\$10.30	\$0.00	\$0.00	\$0.00	\$39.56
2	55.00	\$32.18	\$10.30	\$0.00	\$6.88	\$0.00	\$49.36
3	60.00	\$35.11	\$10.30	\$0.00	\$7.50	\$0.00	\$52.91
4	65.00	\$38.03	\$10.30	\$0.00	\$8.13	\$0.00	\$56.46
5	70.00	\$40.96	\$10.30	\$11.95	\$8.75	\$0.00	\$71.96
6	75.00	\$43.88	\$10.30	\$11.95	\$9.38	\$0.00	\$75.51
7	80.00	\$46.81	\$10.30	\$11.95	\$10.00	\$0.00	\$79.06
8	90.00	\$52.66	\$10.30	\$11.95	\$11.25	\$0.00	\$86.16

Apprentice: PAINTER (BRIDGES/TANKS)							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$29.78	\$10.35	\$0.00	\$0.00	\$0.00	\$40.13
2	55.00	\$32.76	\$10.35	\$0.00	\$6.93	\$0.00	\$50.04
3	60.00	\$35.74	\$10.35	\$0.00	\$7.56	\$0.00	\$53.65
4	65.00	\$38.71	\$10.35	\$0.00	\$8.19	\$0.00	\$57.25
5	70.00	\$41.69	\$10.35	\$12.00	\$8.82	\$0.00	\$72.86
6	75.00	\$44.67	\$10.35	\$12.00	\$9.45	\$0.00	\$76.47
7	80.00	\$47.65	\$10.35	\$12.00	\$10.08	\$0.00	\$80.08
8	90.00	\$53.60	\$10.35	\$12.00	\$11.34	\$0.00	\$87.29

Apprentice to Journeyworker Ratio: 1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *	7/1/2025	\$49.41	\$10.30	\$11.95	\$12.50	\$0.00	\$84.16
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.	1/1/2026	\$50.46	\$10.35	\$12.00	\$12.60	\$0.00	\$85.41
PAINTERS LOCAL 35							
PAINTERS LOCAL 35 - ZONE 2							

Apprentice: PAINTER (SPRAY OR SANDBLAST, NEW) *							
Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$24.71	\$10.30	\$0.00	\$0.00	\$0.00	\$35.01
2	55.00	\$27.18	\$10.30	\$0.00	\$6.88	\$0.00	\$44.36
3	60.00	\$29.65	\$10.30	\$0.00	\$7.50	\$0.00	\$47.45

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: PAINTER (SPRAY OR SANDBLAST, NEW) * Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
4	65.00	\$32.12	\$10.30	\$0.00	\$8.13	\$0.00	\$50.55
5	70.00	\$34.59	\$10.30	\$11.95	\$8.75	\$0.00	\$65.59
6	75.00	\$37.06	\$10.30	\$11.95	\$9.38	\$0.00	\$68.69
7	80.00	\$39.53	\$10.30	\$11.95	\$10.00	\$0.00	\$71.78
8	90.00	\$44.47	\$10.30	\$11.95	\$11.25	\$0.00	\$77.97
Apprentice: PAINTER (SPRAY OR SANDBLAST, NEW) * Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$25.23	\$10.35	\$0.00	\$0.00	\$0.00	\$35.58
2	55.00	\$27.75	\$10.35	\$0.00	\$6.93	\$0.00	\$45.03
3	60.00	\$30.28	\$10.35	\$0.00	\$7.56	\$0.00	\$48.19
4	65.00	\$32.80	\$10.35	\$0.00	\$8.19	\$0.00	\$51.34
5	70.00	\$35.32	\$10.35	\$12.00	\$8.82	\$0.00	\$66.49
6	75.00	\$37.85	\$10.35	\$12.00	\$9.45	\$0.00	\$69.65
7	80.00	\$40.37	\$10.35	\$12.00	\$10.08	\$0.00	\$72.80
8	90.00	\$45.41	\$10.35	\$12.00	\$11.34	\$0.00	\$79.10
Apprentice to Journeyworker Ratio: 1:1							
PAINTER (SPRAY OR SANDBLAST, REPAINT)	7/1/2025	\$47.47	\$10.30	\$11.95	\$12.50	\$0.00	\$82.22
PAINTERS LOCAL 35	1/1/2026	\$48.52	\$10.35	\$12.00	\$12.60	\$0.00	\$83.47
PAINTERS LOCAL 35 - ZONE 2							

Apprentice: PAINTER (SPRAY OR SANDBLAST, REPAINT) Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$23.74	\$10.30	\$0.00	\$0.00	\$0.00	\$34.04
2	55.00	\$26.11	\$10.30	\$0.00	\$6.88	\$0.00	\$43.29
3	60.00	\$28.48	\$10.30	\$0.00	\$7.50	\$0.00	\$46.28
4	65.00	\$30.86	\$10.30	\$0.00	\$8.13	\$0.00	\$49.29
5	70.00	\$33.23	\$10.30	\$11.95	\$8.75	\$0.00	\$64.23
6	75.00	\$35.60	\$10.30	\$11.95	\$9.38	\$0.00	\$67.23
7	80.00	\$37.98	\$10.30	\$11.95	\$10.00	\$0.00	\$70.23
8	90.00	\$42.72	\$10.30	\$11.95	\$11.25	\$0.00	\$76.22

Apprentice: PAINTER (SPRAY OR SANDBLAST, REPAINT) Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: PAINTER (SPRAY OR SANDBLAST, REPAINT)							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$24.26	\$10.35	\$0.00	\$0.00	\$0.00	\$34.61
2	55.00	\$26.69	\$10.35	\$0.00	\$6.93	\$0.00	\$43.97
3	60.00	\$29.11	\$10.35	\$0.00	\$7.56	\$0.00	\$47.02
4	65.00	\$31.54	\$10.35	\$0.00	\$8.19	\$0.00	\$50.08
5	70.00	\$33.96	\$10.35	\$12.00	\$8.82	\$0.00	\$65.13
6	75.00	\$36.39	\$10.35	\$12.00	\$9.45	\$0.00	\$68.19
7	80.00	\$38.82	\$10.35	\$12.00	\$10.08	\$0.00	\$71.25
8	90.00	\$43.67	\$10.35	\$12.00	\$11.34	\$0.00	\$77.36

Apprentice to Journeyworker Ratio: 1:1

PAINTER / TAPER (BRUSH, NEW) *	7/1/2025	\$48.01	\$10.30	\$11.95	\$12.50	\$0.00	\$82.76
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.	1/1/2026	\$49.06	\$10.35	\$12.00	\$12.60	\$0.00	\$84.01
PAINTERS LOCAL 35							
PAINTERS LOCAL 35 - ZONE 2							

Apprentice: PAINTER / TAPER (BRUSH, NEW) *							
Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$24.01	\$10.30	\$0.00	\$0.00	\$0.00	\$34.31
2	55.00	\$26.41	\$10.30	\$0.00	\$6.88	\$0.00	\$43.59
3	60.00	\$28.81	\$10.30	\$0.00	\$7.50	\$0.00	\$46.61
4	65.00	\$31.21	\$10.30	\$0.00	\$8.13	\$0.00	\$49.64
5	70.00	\$33.61	\$10.30	\$11.95	\$8.75	\$0.00	\$64.61
6	75.00	\$36.01	\$10.30	\$11.95	\$9.38	\$0.00	\$67.64
7	80.00	\$38.41	\$10.30	\$11.95	\$10.00	\$0.00	\$70.66
8	90.00	\$43.21	\$10.30	\$11.95	\$11.25	\$0.00	\$76.71

Apprentice: PAINTER / TAPER (BRUSH, NEW) *							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$24.53	\$10.35	\$0.00	\$0.00	\$0.00	\$34.88
2	55.00	\$26.98	\$10.35	\$0.00	\$6.93	\$0.00	\$44.26
3	60.00	\$29.44	\$10.35	\$0.00	\$7.56	\$0.00	\$47.35
4	65.00	\$31.89	\$10.35	\$0.00	\$8.19	\$0.00	\$50.43
5	70.00	\$34.34	\$10.35	\$12.00	\$8.82	\$0.00	\$65.51
6	75.00	\$36.80	\$10.35	\$12.00	\$9.45	\$0.00	\$68.60
7	80.00	\$39.25	\$10.35	\$12.00	\$10.08	\$0.00	\$71.68
8	90.00	\$44.15	\$10.35	\$12.00	\$11.34	\$0.00	\$77.84

Apprentice to Journeyworker Ratio: 1:1

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
PAINTER / TAPER (BRUSH, REPAINT)	7/1/2025	\$46.07	\$10.30	\$11.95	\$12.50	\$0.00	\$80.82
PAINTERS LOCAL 35	1/1/2026	\$47.12	\$10.35	\$12.00	\$12.60	\$0.00	\$82.07
PAINTERS LOCAL 35 - ZONE 2							

Apprentice: PAINTER / TAPER (BRUSH, REPAINT)**Effective Date: 7/1/2025**

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$23.04	\$10.30	\$0.00	\$0.00	\$0.00	\$33.34
2	55.00	\$25.34	\$10.30	\$0.00	\$6.88	\$0.00	\$42.52
3	60.00	\$27.64	\$10.30	\$0.00	\$7.50	\$0.00	\$45.44
4	65.00	\$29.95	\$10.30	\$0.00	\$8.13	\$0.00	\$48.38
5	70.00	\$32.25	\$10.30	\$11.95	\$8.75	\$0.00	\$63.25
6	75.00	\$34.55	\$10.30	\$11.95	\$9.38	\$0.00	\$66.18
7	80.00	\$36.86	\$10.30	\$11.95	\$10.00	\$0.00	\$69.11
8	90.00	\$41.46	\$10.30	\$11.95	\$11.25	\$0.00	\$74.96

Apprentice: PAINTER / TAPER (BRUSH, REPAINT)**Effective Date: 1/1/2026**

Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$23.56	\$10.35	\$0.00	\$0.00	\$0.00	\$33.91
2	55.00	\$25.92	\$10.35	\$0.00	\$6.93	\$0.00	\$43.20
3	60.00	\$28.27	\$10.35	\$0.00	\$7.56	\$0.00	\$46.18
4	65.00	\$30.63	\$10.35	\$0.00	\$8.19	\$0.00	\$49.17
5	70.00	\$32.98	\$10.35	\$12.00	\$8.82	\$0.00	\$64.15
6	75.00	\$35.34	\$10.35	\$12.00	\$9.45	\$0.00	\$67.14
7	80.00	\$37.70	\$10.35	\$12.00	\$10.08	\$0.00	\$70.13
8	90.00	\$42.41	\$10.35	\$12.00	\$11.34	\$0.00	\$76.10

Apprentice to Journeyworker Ratio: 1:1

PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	6/1/2025	\$39.84	\$10.15	\$9.50	\$9.21	\$0.00	\$68.70
LABORERS	12/1/2025	\$41.22	\$10.15	\$9.50	\$9.21	\$0.00	\$70.08
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$42.66	\$10.15	\$9.50	\$9.21	\$0.00	\$71.52
	12/1/2026	\$44.10	\$10.15	\$9.50	\$9.21	\$0.00	\$72.96

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

PANEL & PICKUP TRUCKS DRIVER	6/1/2025	\$40.78	\$15.57	\$20.17	\$0.00	\$0.00	\$76.52
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2025	\$40.78	\$15.57	\$21.78	\$0.00	\$0.00	\$78.13
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$0.00	\$78.73
	6/1/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$0.00	\$79.73
	12/1/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$0.00	\$81.47
	1/1/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$0.00	\$82.07

PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)	8/1/2024	\$51.97	\$10.08	\$11.62	\$12.67	\$0.00	\$86.34
PILE DRIVER LOCAL 56							
PILE DRIVER LOCAL 56 (ZONE 2)							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- PILE DRIVER"							
PILE DRIVER	8/1/2024	\$51.97	\$10.08	\$11.62	\$12.67	\$0.00	\$86.34
PILE DRIVER LOCAL 56							
PILE DRIVER LOCAL 56 (ZONE 2)							

Apprentice: PILE DRIVER							
Effective Date: 8/1/2024							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	\$23.39	\$10.08	\$0.00	\$2.53	\$0.00	\$36.00
2	55.00	\$28.58	\$10.08	\$0.00	\$5.07	\$0.00	\$43.73
3	70.00	\$36.38	\$10.08	\$11.62	\$7.60	\$0.00	\$65.68
4	80.00	\$41.58	\$10.08	\$11.62	\$10.14	\$0.00	\$73.42

Apprentice to Journeyworker Ratio: 1:5

PIPELAYER	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

PIPELAYER (HEAVY & HIGHWAY)	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.21	\$0.00	\$68.95
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.21	\$0.00	\$70.33
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.21	\$0.00	\$71.77
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.21	\$0.00	\$73.21

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

PLUMBER & PIPEFITTER	9/1/2025	\$55.00	\$12.70	\$9.71	\$8.06	\$0.00	\$85.47
PLUMBERS LOCAL 4	3/1/2026	\$57.80	\$11.30	\$9.71	\$8.06	\$0.00	\$86.87
PLUMBERS LOCAL 4							

Apprentice: PLUMBER & PIPEFITTER							
Effective Date: 9/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	40.00	\$22.00	\$12.70	\$0.00	\$0.00	\$0.00	\$34.70
2	50.00	\$27.50	\$12.70	\$0.00	\$0.00	\$0.00	\$40.20
3	60.00	\$33.00	\$12.70	\$0.00	\$0.00	\$0.00	\$45.70
4	70.00	\$38.50	\$12.70	\$0.00	\$8.06	\$0.00	\$59.26
5	80.00	\$44.00	\$12.70	\$0.00	\$8.06	\$0.00	\$64.76

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate																																																
<div>Apprentice: PLUMBER & PIPEFITTER</div> <div>Effective Date: 3/1/2026</div> <table><thead><tr><th>Step</th><th>Percent</th><th>Apprentice Base Wage</th><th>Health</th><th>Pension</th><th>Annuity</th><th>Supplemental Unemployment</th><th>Total Rate</th></tr></thead><tbody><tr><td>1</td><td>40.00</td><td>\$23.12</td><td>\$11.30</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td><td>\$34.42</td></tr><tr><td>2</td><td>50.00</td><td>\$28.90</td><td>\$11.30</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td><td>\$40.20</td></tr><tr><td>3</td><td>60.00</td><td>\$34.68</td><td>\$11.30</td><td>\$0.00</td><td>\$0.00</td><td>\$0.00</td><td>\$45.98</td></tr><tr><td>4</td><td>70.00</td><td>\$40.46</td><td>\$11.30</td><td>\$0.00</td><td>\$8.06</td><td>\$0.00</td><td>\$59.82</td></tr><tr><td>5</td><td>80.00</td><td>\$46.24</td><td>\$11.30</td><td>\$0.00</td><td>\$8.06</td><td>\$0.00</td><td>\$65.60</td></tr></tbody></table>								Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate	1	40.00	\$23.12	\$11.30	\$0.00	\$0.00	\$0.00	\$34.42	2	50.00	\$28.90	\$11.30	\$0.00	\$0.00	\$0.00	\$40.20	3	60.00	\$34.68	\$11.30	\$0.00	\$0.00	\$0.00	\$45.98	4	70.00	\$40.46	\$11.30	\$0.00	\$8.06	\$0.00	\$59.82	5	80.00	\$46.24	\$11.30	\$0.00	\$8.06	\$0.00	\$65.60
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate																																																
1	40.00	\$23.12	\$11.30	\$0.00	\$0.00	\$0.00	\$34.42																																																
2	50.00	\$28.90	\$11.30	\$0.00	\$0.00	\$0.00	\$40.20																																																
3	60.00	\$34.68	\$11.30	\$0.00	\$0.00	\$0.00	\$45.98																																																
4	70.00	\$40.46	\$11.30	\$0.00	\$8.06	\$0.00	\$59.82																																																
5	80.00	\$46.24	\$11.30	\$0.00	\$8.06	\$0.00	\$65.60																																																
Apprentice to Journeyworker Ratio: 1:3																																																							
PNEUMATIC CONTROLS (TEMP.)	9/1/2025	\$55.00	\$12.70	\$9.71	\$8.06	\$0.00	\$85.47																																																
PLUMBERS LOCAL 4	3/1/2026	\$57.80	\$11.30	\$9.71	\$8.06	\$0.00	\$86.87																																																
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"																																																							
PNEUMATIC DRILL/TOOL OPERATOR	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85																																																
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23																																																
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67																																																
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11																																																
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56																																																
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01																																																
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51																																																
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01																																																
For apprentice rates see "Apprentice- LABORER"																																																							
PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY)	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.21	\$0.00	\$68.95																																																
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.21	\$0.00	\$70.33																																																
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.21	\$0.00	\$71.77																																																
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.21	\$0.00	\$73.21																																																
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"																																																							
POWDERMAN & BLASTER	6/1/2025	\$40.84	\$10.15	\$9.50	\$9.11	\$0.00	\$69.60																																																
LABORERS	12/1/2025	\$42.22	\$10.15	\$9.50	\$9.11	\$0.00	\$70.98																																																
LABORERS - ZONE 2	6/1/2026	\$43.66	\$10.15	\$9.50	\$9.11	\$0.00	\$72.42																																																
	12/1/2026	\$45.10	\$10.15	\$9.50	\$9.11	\$0.00	\$73.86																																																
	6/1/2027	\$46.55	\$10.15	\$9.50	\$9.11	\$0.00	\$75.31																																																
	12/1/2027	\$48.00	\$10.15	\$9.50	\$9.11	\$0.00	\$76.76																																																
	6/1/2028	\$49.50	\$10.15	\$9.50	\$9.11	\$0.00	\$78.26																																																
	12/1/2028	\$51.00	\$10.15	\$9.50	\$9.11	\$0.00	\$79.76																																																
For apprentice rates see "Apprentice- LABORER"																																																							
POWDERMAN & BLASTER (HEAVY & HIGHWAY)	6/1/2025	\$40.84	\$9.90	\$9.50	\$9.21	\$0.00	\$69.45																																																
LABORERS	12/1/2025	\$42.22	\$9.90	\$9.50	\$9.21	\$0.00	\$70.83																																																
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$43.66	\$9.90	\$9.50	\$9.21	\$0.00	\$72.27																																																
	12/1/2026	\$45.10	\$9.90	\$9.50	\$9.21	\$0.00	\$73.71																																																
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"																																																							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
POWER SHOVEL/DERRICK/TRENCHING MACHINE	6/1/2025	\$57.83	\$16.05	\$13.25	\$3.25	\$0.00	\$90.38
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$59.28	\$16.05	\$13.25	\$3.25	\$0.00	\$91.83
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$60.58	\$16.05	\$13.25	\$3.25	\$0.00	\$93.13
	12/1/2026	\$62.03	\$16.05	\$13.25	\$3.25	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
PUMP OPERATOR (CONCRETE)	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
PUMP OPERATOR (DEWATERING, OTHER)	6/1/2025	\$37.02	\$16.05	\$13.25	\$3.25	\$0.00	\$69.57
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$37.97	\$16.05	\$13.25	\$3.25	\$0.00	\$70.52
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$38.83	\$16.05	\$13.25	\$3.25	\$0.00	\$71.38
	12/1/2026	\$39.78	\$16.05	\$13.25	\$3.25	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
READY-MIX CONCRETE DRIVER	1/1/2025	\$27.60	\$11.26	\$6.15	\$0.00	\$0.00	\$45.01
TEAMSTERS 170							
TEAMSTERS 170 - Dauphinais (Bellingham)							
RECLAIMERS	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
RIDE-ON MOTORIZED BUGGY OPERATOR	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"							
ROLLER/SPREADER/MULCHING MACHINE	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
ROOFER (Inc.Roofer Waterproofing &Roofer Damproofg)	8/1/2025	\$53.53	\$13.28	\$12.67	\$9.03	\$0.00	\$88.51
ROOFERS LOCAL 33	2/1/2026	\$54.78	\$13.28	\$12.67	\$9.03	\$0.00	\$89.76
ROOFERS LOCAL 33							

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: ROOFER (Inc.Roofers Waterproofing &Roofers Damproofg) Effective Date: 8/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$26.77	\$13.28	\$6.52	\$9.03	\$0.00	\$55.60
2	60.00	\$32.12	\$13.28	\$12.67	\$9.03	\$0.00	\$67.10
3	65.00	\$34.79	\$13.28	\$12.67	\$9.03	\$0.00	\$69.77
4	75.00	\$40.15	\$13.28	\$12.67	\$9.03	\$0.00	\$75.13
5	85.00	\$45.50	\$13.28	\$12.67	\$9.03	\$0.00	\$80.48
Apprentice: ROOFER (Inc.Roofers Waterproofing &Roofers Damproofg) Effective Date: 2/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$27.39	\$13.28	\$6.52	\$9.03	\$0.00	\$56.22
2	60.00	\$32.87	\$13.28	\$12.67	\$9.03	\$0.00	\$67.85
3	65.00	\$35.61	\$13.28	\$12.67	\$9.03	\$0.00	\$70.59
4	75.00	\$41.09	\$13.28	\$12.67	\$9.03	\$0.00	\$76.07
5	85.00	\$46.56	\$13.28	\$12.67	\$9.03	\$0.00	\$81.54
Apprentice Notes ** 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1							
Apprentice to Journeyworker Ratio: 1:5							
ROOFER SLATE / TILE / PRECAST CONCRETE	8/1/2025	\$53.78	\$13.28	\$12.67	\$9.03	\$0.00	\$88.76
ROOFERS LOCAL 33	2/1/2026	\$55.03	\$13.28	\$12.67	\$9.03	\$0.00	\$90.01
ROOFERS LOCAL 33							
For apprentice rates see "Apprentice- ROOFER"							
SHEETMETAL WORKER	7/1/2025	\$43.48	\$12.94	\$11.01	\$8.72	\$2.13	\$78.28
SHEETMETAL WORKERS LOCAL 63	7/1/2026	\$43.48	\$13.24	\$11.01	\$9.92	\$2.13	\$79.78
SHEETMETAL WORKERS LOCAL 63	1/1/2027	\$43.48	\$13.54	\$11.01	\$11.12	\$2.13	\$81.28
	7/1/2027	\$44.98	\$13.54	\$11.01	\$11.12	\$2.13	\$82.78
	1/1/2028	\$46.48	\$13.54	\$11.01	\$11.12	\$2.13	\$84.28
Apprentice: SHEETMETAL WORKER Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	\$19.57	\$5.82	\$4.95	\$0.00	\$0.85	\$31.19
2	50.00	\$21.74	\$6.47	\$5.51	\$0.00	\$0.94	\$34.66
3	55.00	\$23.91	\$7.12	\$9.91	\$0.00	\$1.15	\$42.09
4	60.00	\$26.09	\$7.76	\$9.91	\$0.00	\$1.23	\$44.99
5	65.00	\$28.26	\$8.41	\$9.91	\$0.00	\$1.31	\$47.89

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: SHEETMETAL WORKER							
Effective Date: 7/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
6	70.00	\$30.44	\$9.06	\$9.91	\$0.00	\$1.39	\$50.80
7	75.00	\$32.61	\$9.71	\$9.91	\$0.00	\$1.47	\$53.70
8	80.00	\$34.78	\$10.35	\$9.91	\$8.72	\$1.78	\$65.54
9	85.00	\$36.96	\$11.00	\$9.91	\$8.72	\$1.86	\$68.45
10	90.00	\$39.13	\$11.65	\$9.91	\$8.72	\$1.94	\$71.35
Apprentice: SHEETMETAL WORKER							
Effective Date: 7/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	45.00	\$19.57	\$5.96	\$4.95	\$0.00	\$0.85	\$31.33
2	50.00	\$21.74	\$6.62	\$5.51	\$0.00	\$0.94	\$34.81
3	55.00	\$23.91	\$7.28	\$9.91	\$0.00	\$1.15	\$42.25
4	60.00	\$26.09	\$7.94	\$9.91	\$0.00	\$1.23	\$45.17
5	65.00	\$28.26	\$8.60	\$9.91	\$0.00	\$1.31	\$48.08
6	70.00	\$30.44	\$9.27	\$9.91	\$0.00	\$1.39	\$51.01
7	75.00	\$32.61	\$9.93	\$9.91	\$0.00	\$1.47	\$53.92
8	80.00	\$34.78	\$10.59	\$9.91	\$9.92	\$1.78	\$66.98
9	85.00	\$36.96	\$11.25	\$9.91	\$9.92	\$1.86	\$69.90
10	90.00	\$39.13	\$11.92	\$9.91	\$9.92	\$1.94	\$72.82
Apprentice to Journeyworker Ratio: 1:3							
SPECIALIZED EARTH MOVING EQUIP < 35 TONS	6/1/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$0.00	\$76.98
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$0.00	\$78.59
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$0.00	\$79.19
	6/1/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$0.00	\$80.19
	12/1/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$0.00	\$81.93
	1/1/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$0.00	\$82.53
SPECIALIZED EARTH MOVING EQUIP > 35 TONS	6/1/2025	\$41.53	\$15.57	\$20.17	\$0.00	\$0.00	\$77.27
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2025	\$41.53	\$15.57	\$21.78	\$0.00	\$0.00	\$78.88
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2026	\$41.53	\$16.17	\$21.78	\$0.00	\$0.00	\$79.48
	6/1/2026	\$42.53	\$16.17	\$21.78	\$0.00	\$0.00	\$80.48
	12/1/2026	\$42.53	\$16.17	\$23.52	\$0.00	\$0.00	\$82.22
	1/1/2027	\$42.53	\$16.77	\$23.52	\$0.00	\$0.00	\$82.82
SPRINKLER FITTER	10/1/2025	\$53.25	\$12.40	\$7.40	\$9.41	\$0.00	\$82.46
SPRINKLER FITTERS LOCAL 669	1/1/2026	\$53.25	\$13.60	\$7.45	\$9.41	\$0.00	\$83.71
SPRINKLER FITTERS LOCAL 669	4/1/2026	\$56.54	\$13.60	\$7.45	\$9.41	\$0.00	\$87.00
	7/1/2026	\$56.54	\$13.60	\$7.45	\$9.41	\$0.00	\$87.00
	10/1/2026	\$56.54	\$13.60	\$7.45	\$9.41	\$0.00	\$87.00
	1/1/2027	\$56.54	\$14.55	\$7.50	\$9.41	\$0.00	\$88.00
	4/1/2027	\$59.83	\$14.55	\$7.50	\$9.41	\$0.00	\$91.29

Construction

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

Apprentice: SPRINKLER FITTER							
Effective Date: 10/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	43.00	\$26.94	\$12.40	\$0.00	\$0.00	\$0.00	\$39.34
2	48.00	\$30.08	\$12.40	\$0.00	\$0.00	\$0.00	\$42.48
3	52.00	\$32.58	\$12.40	\$7.40	\$1.15	\$0.00	\$53.53
4	56.00	\$35.09	\$12.40	\$7.40	\$1.15	\$0.00	\$56.04
5	59.00	\$36.97	\$12.40	\$7.40	\$1.40	\$0.00	\$58.17
6	64.00	\$40.10	\$12.40	\$7.40	\$1.40	\$0.00	\$61.30
7	68.00	\$42.61	\$12.40	\$7.40	\$1.40	\$0.00	\$63.81
8	72.00	\$45.12	\$12.40	\$7.40	\$1.40	\$0.00	\$66.32
9	76.00	\$47.62	\$12.40	\$7.40	\$1.40	\$0.00	\$68.82
10	80.00	\$50.13	\$12.40	\$7.40	\$1.40	\$0.00	\$71.33

Apprentice: SPRINKLER FITTER							
Effective Date: 1/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	43.00	\$26.94	\$9.64	\$0.00	\$0.00	\$0.00	\$36.58
2	48.00	\$30.08	\$9.64	\$0.00	\$0.00	\$0.00	\$39.72
3	52.00	\$32.58	\$13.60	\$7.45	\$1.15	\$0.00	\$54.78
4	56.00	\$35.09	\$13.60	\$7.45	\$1.15	\$0.00	\$57.29
5	59.00	\$36.97	\$13.60	\$7.45	\$1.40	\$0.00	\$59.42
6	64.00	\$40.10	\$13.60	\$7.45	\$1.40	\$0.00	\$62.55
7	68.00	\$42.61	\$13.60	\$7.45	\$1.40	\$0.00	\$65.06
8	72.00	\$45.12	\$13.60	\$7.45	\$1.40	\$0.00	\$67.57
9	76.00	\$47.62	\$13.60	\$7.45	\$1.40	\$0.00	\$70.07
10	80.00	\$50.13	\$13.60	\$7.45	\$1.40	\$0.00	\$72.58

Apprentice to Journeyworker Ratio: 1:1

STEAM BOILER OPERATOR	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
TERRAZZO FINISHERS	8/1/2025	\$66.89	\$11.49	\$15.57	\$8.02	\$0.00	\$101.97
BRICKLAYERS LOCAL 3	2/1/2026	\$68.24	\$11.49	\$15.57	\$8.02	\$0.00	\$103.32
BRICKLAYERS LOCAL 3 - MARBLE & TILE	8/1/2026	\$70.44	\$11.49	\$15.57	\$8.02	\$0.00	\$105.52
	2/1/2027	\$71.84	\$11.49	\$15.57	\$8.02	\$0.00	\$106.92

Apprentice: TERRAZZO FINISHERS							
Effective Date: 8/1/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$33.45	\$11.49	\$15.57	\$8.02	\$0.00	\$68.53
2	60.00	\$40.13	\$11.49	\$15.57	\$8.02	\$0.00	\$75.21
3	70.00	\$46.82	\$11.49	\$15.57	\$8.02	\$0.00	\$81.90
4	80.00	\$53.51	\$11.49	\$15.57	\$8.02	\$0.00	\$88.59
5	90.00	\$60.20	\$11.49	\$15.57	\$8.02	\$0.00	\$95.28

Apprentice: TERRAZZO FINISHERS							
Effective Date: 2/1/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$34.12	\$11.49	\$15.57	\$8.02	\$0.00	\$69.20
2	60.00	\$40.94	\$11.49	\$15.57	\$8.02	\$0.00	\$76.02
3	70.00	\$47.77	\$11.49	\$15.57	\$8.02	\$0.00	\$82.85
4	80.00	\$54.59	\$11.49	\$15.57	\$8.02	\$0.00	\$89.67
5	90.00	\$61.42	\$11.49	\$15.57	\$8.02	\$0.00	\$96.50

Apprentice to Journeyworker Ratio: 1:5

TEST BORING DRILLER	6/1/2025	\$51.20	\$10.15	\$9.50	\$9.80	\$0.00	\$80.65
LABORERS	12/1/2025	\$52.70	\$10.15	\$9.50	\$9.80	\$0.00	\$82.15
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$54.25	\$10.15	\$9.50	\$9.80	\$0.00	\$83.70
	12/1/2026	\$55.75	\$10.15	\$9.50	\$9.80	\$0.00	\$85.20

For apprentice rates see "Apprentice- LABORER"

TEST BORING DRILLER HELPER	6/1/2025	\$47.32	\$10.15	\$9.50	\$9.80	\$0.00	\$76.77
LABORERS	12/1/2025	\$48.82	\$10.15	\$9.50	\$9.80	\$0.00	\$78.27
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$50.37	\$10.15	\$9.50	\$9.80	\$0.00	\$79.82
	12/1/2026	\$51.87	\$10.15	\$9.50	\$9.80	\$0.00	\$81.32

For apprentice rates see "Apprentice- LABORER"

TEST BORING LABORER	6/1/2025	\$47.20	\$10.15	\$9.50	\$9.80	\$0.00	\$76.65
LABORERS	12/1/2025	\$48.70	\$10.15	\$9.50	\$9.80	\$0.00	\$78.15
LABORERS - FOUNDATION AND MARINE	6/1/2026	\$50.25	\$10.15	\$9.50	\$9.80	\$0.00	\$79.70
	12/1/2026	\$51.75	\$10.15	\$9.50	\$9.80	\$0.00	\$81.20

For apprentice rates see "Apprentice- LABORER"

TRACTORS/PORTABLE STEAM GENERATORS	6/1/2025	\$57.18	\$16.05	\$13.25	\$3.25	\$0.00	\$89.73
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$58.62	\$16.05	\$13.25	\$3.25	\$0.00	\$91.17
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$59.90	\$16.05	\$13.25	\$3.25	\$0.00	\$92.45

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
	12/1/2026	\$61.34	\$16.05	\$13.25	\$3.25	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
TRAILERS FOR EARTH MOVING EQUIPMENT	6/1/2025	\$41.82	\$15.57	\$20.17	\$0.00	\$0.00	\$77.56
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2025	\$41.82	\$15.57	\$21.78	\$0.00	\$0.00	\$79.17
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2026	\$41.82	\$16.17	\$21.78	\$0.00	\$0.00	\$79.77
	6/1/2026	\$42.82	\$16.17	\$21.78	\$0.00	\$0.00	\$80.77
	12/1/2026	\$42.82	\$16.17	\$23.52	\$0.00	\$0.00	\$82.51
	1/1/2027	\$42.82	\$16.77	\$23.52	\$0.00	\$0.00	\$83.11
TUNNEL WORK - COMPRESSED AIR	6/1/2025	\$59.43	\$10.15	\$9.50	\$10.25	\$0.00	\$89.33
LABORERS	12/1/2025	\$60.93	\$10.15	\$9.50	\$10.25	\$0.00	\$90.83
LABORERS (COMPRESSED AIR)	6/1/2026	\$62.48	\$10.15	\$9.50	\$10.25	\$0.00	\$92.38
	12/1/2026	\$63.98	\$10.15	\$9.50	\$10.25	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE)	6/1/2025	\$61.43	\$10.15	\$9.50	\$10.25	\$0.00	\$91.33
LABORERS	12/1/2025	\$62.93	\$10.15	\$9.50	\$10.25	\$0.00	\$92.83
LABORERS (COMPRESSED AIR)	6/1/2026	\$64.48	\$10.15	\$9.50	\$10.25	\$0.00	\$94.38
	12/1/2026	\$65.98	\$10.15	\$9.50	\$10.25	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - FREE AIR	6/1/2025	\$51.50	\$10.15	\$9.50	\$10.25	\$0.00	\$81.40
LABORERS	12/1/2025	\$53.00	\$10.15	\$9.50	\$10.25	\$0.00	\$82.90
LABORERS (FREE AIR TUNNEL)	6/1/2026	\$54.55	\$10.15	\$9.50	\$10.25	\$0.00	\$84.45
	12/1/2026	\$56.05	\$10.15	\$9.50	\$10.25	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"							
TUNNEL WORK - FREE AIR (HAZ. WASTE)	6/1/2025	\$53.50	\$10.15	\$9.50	\$10.25	\$0.00	\$83.40
LABORERS	12/1/2025	\$55.00	\$10.15	\$9.50	\$10.25	\$0.00	\$84.90
LABORERS (FREE AIR TUNNEL)	6/1/2026	\$56.55	\$10.15	\$9.50	\$10.25	\$0.00	\$86.45
	12/1/2026	\$58.05	\$10.15	\$9.50	\$10.25	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"							
VAC-HAUL	6/1/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$0.00	\$76.98
TEAMSTERS JOINT COUNCIL NO. 10	12/1/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$0.00	\$78.59
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	1/1/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$0.00	\$79.19
	6/1/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$0.00	\$80.19
	12/1/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$0.00	\$81.93
	1/1/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$0.00	\$82.53
VOICE-DATA-VIDEO TECHNICIAN	9/7/2025	\$36.12	\$14.98	\$13.94	\$3.97	\$0.00	\$69.01
ELECTRICIANS LOCAL 96	9/6/2026	\$37.04	\$15.96	\$14.20	\$4.07	\$0.00	\$71.27
ELECTRICIANS LOCAL 96							

Apprentice: VOICE-DATA-VIDEO TECHNICIAN

Effective Date: 9/7/2025

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

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
Apprentice: VOICE-DATA-VIDEO TECHNICIAN							
Effective Date: 9/7/2025							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$18.06	\$14.98	\$0.54	\$3.97	\$0.00	\$37.55
2	55.00	\$19.87	\$14.98	\$0.60	\$3.97	\$0.00	\$39.42
3	60.00	\$21.67	\$14.98	\$13.51	\$3.97	\$0.00	\$54.13
4	65.00	\$23.48	\$14.98	\$13.56	\$3.97	\$0.00	\$55.99
5	70.00	\$25.28	\$14.98	\$13.62	\$3.97	\$0.00	\$57.85
6	75.00	\$27.09	\$14.98	\$13.67	\$3.97	\$0.00	\$59.71
7	80.00	\$28.90	\$14.98	\$13.73	\$3.97	\$0.00	\$61.58
8	85.00	\$30.70	\$14.98	\$13.78	\$3.97	\$0.00	\$63.43

Apprentice: VOICE-DATA-VIDEO TECHNICIAN							
Effective Date: 9/6/2026							
Step	Percent	Apprentice Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
1	50.00	\$18.52	\$15.96	\$0.56	\$4.07	\$0.00	\$39.11
2	55.00	\$20.37	\$15.96	\$0.61	\$4.07	\$0.00	\$41.01
3	60.00	\$22.22	\$15.96	\$13.76	\$4.07	\$0.00	\$56.01
4	65.00	\$24.08	\$15.96	\$13.81	\$4.07	\$0.00	\$57.92
5	70.00	\$25.93	\$15.96	\$13.87	\$4.07	\$0.00	\$59.83
6	75.00	\$27.78	\$15.96	\$13.92	\$4.07	\$0.00	\$61.73
7	80.00	\$29.63	\$15.96	\$13.98	\$4.07	\$0.00	\$63.64
8	85.00	\$31.48	\$15.96	\$14.03	\$4.07	\$0.00	\$65.54

Apprentice to Journeyworker Ratio: 1:1

WAGON DRILL OPERATOR	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.11	\$0.00	\$68.85
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.11	\$0.00	\$70.23
LABORERS - ZONE 2	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.11	\$0.00	\$71.67
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.11	\$0.00	\$73.11
	6/1/2027	\$45.80	\$10.15	\$9.50	\$9.11	\$0.00	\$74.56
	12/1/2027	\$47.25	\$10.15	\$9.50	\$9.11	\$0.00	\$76.01
	6/1/2028	\$48.75	\$10.15	\$9.50	\$9.11	\$0.00	\$77.51
	12/1/2028	\$50.25	\$10.15	\$9.50	\$9.11	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

WAGON DRILL OPERATOR (HEAVY & HIGHWAY)	6/1/2025	\$40.09	\$10.15	\$9.50	\$9.21	\$0.00	\$68.95
LABORERS	12/1/2025	\$41.47	\$10.15	\$9.50	\$9.21	\$0.00	\$70.33
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	6/1/2026	\$42.91	\$10.15	\$9.50	\$9.21	\$0.00	\$71.77
	12/1/2026	\$44.35	\$10.15	\$9.50	\$9.21	\$0.00	\$73.21

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

WASTE WATER PUMP OPERATOR	6/1/2025	\$57.83	\$16.05	\$13.25	\$3.25	\$0.00	\$90.38
OPERATING ENGINEERS LOCAL 4	12/1/2025	\$59.28	\$16.05	\$13.25	\$3.25	\$0.00	\$91.83
OPERATING ENGINEERS LOCAL 4	6/1/2026	\$60.58	\$16.05	\$13.25	\$3.25	\$0.00	\$93.13
	12/1/2026	\$62.03	\$16.05	\$13.25	\$3.25	\$0.00	\$94.58

Construction

Classification	Effective Date	Base Wage	Health	Pension	Annuity	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- OPERATING ENGINEERS"							
WATER METER INSTALLER	9/1/2025	\$55.00	\$12.70	\$9.71	\$8.06	\$0.00	\$85.47
PLUMBERS LOCAL 4	3/1/2026	\$57.80	\$11.30	\$9.71	\$8.06	\$0.00	\$86.87
PLUMBERS LOCAL 4							
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"							

Marine Drilling

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

Op Eng Marine (Dredging Work)

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

Additional Apprentice Information

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

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

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

DOCUMENT A00801

SPECIAL PROVISIONS**DISTRICT 3****Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work At Various Locations Along I-90**

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 *2025 Standard Specifications for Highways and Bridges*, the *Supplemental Specifications* contained in this book, the *Construction Standard Details* in effect as of June, 2025, the *1990 Standard Drawings for Signs and Supports*, the *2015 Overhead Signal Structure and Foundation Standard Drawings*, the *2009 Manual on Uniform Traffic Control Devices (MUTCD) with Revisions 1, 2, and 3* and the *November 2022 Massachusetts Amendments to the MUTCD*, the *1968 Standard Drawings for Traffic Signals and Highway Lighting*, the latest edition of *The American Standard for Nursery Stock*, the Plans and these Special Provisions.

The work to be done under this Contract consists of scheduled and emergency structural and substructure repairs and related work performed on bridges under the control of District Three along I-90 and it will include, but is not limited to:

1. Repairing or replacing the deteriorated elements of any structure designated.
2. Removing the deteriorated concrete from any element of the substructure, including but not limited to pier caps, pier columns, wing walls, backwalls and abutments.
3. Jacking and shoring to support pier caps and/or various beams over piers and abutments to allow concrete repairs to the substructure and structural repairs.
4. Replacing excavated, spalled, delaminated, or deteriorated concrete and any missing or deteriorated reinforcing steel in substructure with new materials.
5. Removing and resetting or replacing bearing devices as required.
6. Any additional repairs in either the superstructure or deck that are related to the substructure repair work.
7. Preparing structural repair designs.
8. Replacing missing or damaged granite or cement concrete slope paving, either in kind or with cement concrete slope paving where and as directed by the Engineer.

SCOPE OF WORK (Continued)

9. Furnishing materials, supplies and equipment to perform emergency, routine and non-routine structural repairs to structures throughout District 3 along I-90.

The work to be done under this Contract also includes preparing the designs for structural repairs, furnishing various artisans (cement masons, iron workers, welders, carpenters, laborers, electricians, painters/de-leaders and equipment operators) as specified in Item 100.1 "Base Labor Rate", materials, equipment, and engineering services to perform scheduled repairs for non-itemized related work. This work could also include repairs to parts of the superstructure and/or deck joints in close proximity to the substructure element under repair.

Where work is directed by the Engineer and is not in the list of bid items, the Contractor will be reimbursed under Non-Bid Items and Item 100.1 Base Labor Rate (Time and Materials).

All work shall be performed within, and accessed by, existing State, City or Town roadway layouts. No rights to enter on, or occupy, private property have been acquired for this project.

SUBSECTION 7.05 INSURANCE REQUIREMENTS

The insurance requirements set forth in this subsection are in addition to the requirements of the Standard Specifications.

7.05.B: Public Liability Insurance 1. and
7.05.B: Public Liability Insurance 2.

The Massachusetts Department of Transportation and applicable railroads shall be named as additional insureds.

RAILROAD INSURANCE REQUIREMENTS

Railroad insurance will be in accordance with Subsection 7.05 of the Standard Specifications and the following:

The insurance requirements set forth in this section are in addition to the requirements of the Standard Specifications and supersede all other requirements.

Since the locations of bridges involving railroads are unknown, the Contractor will not be required to submit railroad insurance prior to execution of the Contract.

RAILROAD INSURANCE REQUIREMENTS (Continued)

Upon assignment of a work order which requires railroad insurance, the Contractor shall submit to the Engineer all statements/estimates from a licensed insurer, which will meet the insurance requirements of the affected railroad. The Contractor should be aware that each railroad has its own specified minimum insurance requirements.

After determination of the necessity and amount of the proposed insurance required by the affected railroad, the Contractor will be given a written notice to proceed with the acquisition of the insurance.

After acquisition of insurance, the Contractor shall submit the railroad insurance information to the MassDOT in accordance with Subsection 7.05 of the Standard Specifications. The Contractor shall submit the railroad insurance amount as well as railroad license and review fees to the Department for reimbursement.

The Contractor will be reimbursed for the insurance premium upon submittal of paid receipts.

If the Contractor is unable to secure said railroad insurance or is uninsurable, the Engineer may decide to cancel all future obligations and terminate the contract.

Following is the list (but not limited) of the railroad companies that operate railroad in the District at various locations:

RAILROAD CONTACT INFORMATION

CSX
1 Bell Crossing Road
Selkirk, NY 12158
Attn: John Heigel
(518) 767 – 6373

CSX –Flagger
4 Neshaminy Interplex
Suite 205
Trevose, PA 19053
Derek S. Mihaly
Office: 215-218-3391
derek_mihaly@csx.com

MBTA
100 Summer Street – Suite 1200
Boston, MA 02110
Christine Bresnahan
(617) 222-3361
CBresnahan@mbta.com

****Note:** Contractors shall have their field staff properly ROW trained with valid ROW training cards to be allowed access to enter upon RR Property when necessary.

RAILROAD CONTACT INFORMATION (Continued)

If directed by the Engineer, the Contractor shall begin the application process for Right of Entry/License Agreements for railroad entities designated by the Engineer. Such agreements are for providing a timely response to emergency work orders. The Contractor shall obtain additional site specific access agreements for the follow up scheduled repair.

LOCATION OF WORK

Work under this contract may include any bridges, culverts, viaducts, tunnels, and approach ramps within the limits of the I-90 right-of-way in District 3 as assigned by the Engineer. The following web link provides the cities and towns under the jurisdiction of District 3:

<https://www.mass.gov/service-details/find-your-highway-district-office>

Select the district and click “Submit” button.

Priority Substructure Repair Location

Framingham – I-90 Exit 117 (Interchange 13) over I-90 EB & WB, Br. No F-07-060

MassDOT - Highway Division reserves the right to add additional bridges or locations throughout the duration of this contract. Further information as to the bridges may be obtained at the District 3 Office at 499 Plantation Parkway, Worcester MA 01605.

District will provide written or verbal work orders for each bridge to be repaired while the contract is active. However, any bridges, culverts, viaducts, or other similar structures on I-90 or within the limits of the I-90 right-of-way in District 3 may be considered for repairs under this Contract, as required by the Engineer.

No work shall be performed under this contract until specifically authorized and directed by the Engineer. Furthermore, this contract does not assign to the Contractor complete maintenance of the bridges owned by the Department. The Department reserves the right to perform such work as it deems best with its own forces, and/or to enter into special contracts for the maintenance of specific items.

CONTRACTOR QUESTIONS AND ADDENDUM ACKNOWLEDGEMENTS

Prospective bidders are required to submit all questions to the Construction Contracts Engineer by 3:00 P.M. on the Tuesday of the previous week before the scheduled bid opening date. Any questions received after this time will not be considered for review by the Department.

Contractors should email questions and addendum acknowledgements to the following email address massdotSpecifications@dot.state.ma.us. The MassDOT proposal number and municipality is to be placed in the subject line.

SCHEDULE OF WORK

All proposed work hours shall conform to Subsection 7.09 and be subject to the written approval of the Engineer.

For specific locations, allowable work hours will be determined by the District Highway Director or designated representative. On high volume and/or high-speed roadways, work may be restricted to non-peak hours or night work as directed by the Engineer to avoid peak traffic volumes to maintain safety and productivity.

No entrance or exit ramp shall be closed to traffic except between the hours of 10:00 PM and 5:00 AM the following day or as directed. The Contractor shall be required to schedule the work activities such that not more than one ramp shall be closed during any given work period.

Nighttime Work

All work locations requiring night hours, as approved by the Engineer, are restricted as follows:

Sunday	9:00 PM to 5:00 AM Monday
Monday	9:00 PM to 5:00 AM Tuesday
Tuesday	9:00 PM to 5:00 AM Wednesday
Wednesday	9:00 PM to 5:00 AM Thursday
Thursday	9:00 PM to 5:00 AM Friday

Day-Time Work

Daytime operations shall be done Monday through Friday, between the hours of 7:00 AM to 3:30 PM. Work may not proceed beyond the normal 8-hour day unless prior approval is obtained from the Engineer for that day. Approval to work beyond the scheduled work will only be given when special conditions exist that warrant working beyond the scheduled work as determined by the Engineer.

The Contractor may schedule night shifts longer than 8-hours with approval by the Engineer. These time periods include the "set-up" and "breakdown" of the traffic pattern employed. No operations, personnel, or equipment will be allowed on the roadways except during working hours.

The Engineer may direct the Contractor to cease any operation that is deemed to be unsafe, or which unduly impedes traffic, with no additional expense to the Commonwealth. The work hour restrictions do not apply to emergency conditions, as determined by the Engineer.

No additional compensation will be made for work scheduled during nighttime hours.

CONTRACTOR ACCESS

Contractors shall be aware that there are multi-span bridges with piers located away from the road and or near rivers and streams. No separate payment will be made for access roads to get equipment or personnel to the work site or for staging access to repair areas, etc., but all costs in connection therewith shall be included in the Contract.

PEDESTRIAN ACCESS

ADA compliant access must be maintained at all times, including pedestrian guidance systems at work zones. Any pedestrian detours or bypasses shall include ADA compliant route with proper barricades, railing, ramps, and signage, etc.

CONTRACTOR DESIGN REQUIREMENTS

All design drawings and calculation submittals that are prepared and stamped by a Professional Engineer shall be checked by a second Professional Engineer. Both Professional Engineers shall be registered in the Commonwealth of Massachusetts, and be of the appropriate engineering discipline. All drawings calculation sheets shall contain the “calculated by” or “drawn by”, and “checked by” sections with the initials of both Professional Engineers.

HOLIDAY WORK RESTRICTIONS

(Supplementing Subsection 7.09)

The District Highway Director (DHD) may authorize work to continue during these specified time periods if it is determined by the District that the work will not negatively impact the traveling public. DHD may allow work in those areas on a case by case basis and where work is behind barrier and will not impact traffic

Below are the holiday work restrictions:

New Years Day (Federal Holiday)

No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day. No work on local roadways on the holiday without permission by the DHD and the local police chief.

Martin Luther King's Birthday (Federal Holiday)

No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

President's Day (Federal Holiday)

No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

Evacuation Day (Suffolk County State Holiday)

No work restrictions due to traffic concerns.

Patriot's Day (State Holiday)

Work restrictions will be in place for Districts 3 and 6 along the entire Boston Marathon route and any other locations that the DHD in those districts determine are warranted so as to not to impact the marathon. All other districts work restrictions will be as per DHD.

Mother's Day

No work on Western Turnpike and Metropolitan Highway System from 5:00 AM on the Friday before, until the normal start of business on the following day.

Memorial Day (Federal Holiday)

No work on major arterial roadways from 5:00 AM on the Friday before, until the normal start of business on the following day.

HOLIDAY WORK RESTRICTIONS (Continued)**Bunker Hill Day (Suffolk County State Holiday)**

No work restrictions due to traffic concerns.

Juneteenth

No work restrictions due to traffic concerns, however work on local roadways requires permission by the DHD and local police chief.

Independence Day (Federal Holiday)

No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day. No work on local roadways on the holiday without permission by the DHD and the local police chief.

Labor Day (Federal Holiday)

No work on major arterial roadways from 5:00 AM on the Friday before, until the normal start of business on the following day.

Columbus Day (Federal Holiday)

No work on major arterials from 5:00 AM on the Friday before, until the normal start of business on the following day

Veterans' Day (Federal Holiday)

No work restrictions due to traffic concerns.

Thanksgiving Day (Federal Holiday)

No work on major arterials from 5:00 AM two days before until the normal start of business on the following Monday.

Christmas Day (Federal Holiday)

No work on major arterial roadways from 5:00 AM on the day before until the normal start of business on the next subsequent business day.

TRAFFIC OFFICERS AND RAILROAD FLAGGING SERVICE

(Supplementing Subsection 7.11)

Under the provisions of Chapter 634 of the Acts of 1971, the railroad (excluding MBTA) shall furnish, without cost, the necessary flag protection on the railroad right-of-way which may be required for the performance of the work. For MBTA railroad, MassDOT will pay the Contractor for flagging costs in accordance with the procedure described in Subsection 7.11.

For non-Chapter 634 bridges MassDOT will pay the Contractor for flagging costs in accordance with the procedure described in Subsection 7.11.

The Contractor, however, is responsible for all costs incurred in restoring tracks that have been disturbed by the Contractor's operations. Contractor shall comply with the requirements of the Railroad Special Provisions.

MBTA FLAGGING

The Contractor shall provide a minimum two week notice for flagging support for MBTA bridges and railroads. This applies only to bridges and railroads operated by Keolis Commuter Services (KCS). This two-week notice does not apply to emergency work, only to routine or scheduled work activities. The contact person for advance request for flagging services is Rich Arnold, MBTA Railroad Operations Department, Phone number (617)-222-3635, email address: rarnold@mbta.com.

MBTA COMMUTER RAIL

Keolis Commuter Service (KCS) operates the commuter rail for the MBTA. All references to MBTA in the provisions will mean Keolis Commuter Service (KCS).

MBTA RAILROAD COORDINATION / ACCESS TO MBTA PROPERTY

The Contractor shall be required to coordinate the work of this Contract with the MBTA and Keolis Commuter Services Co. ("KCS") through the MassDOT Resident Engineer and MassDOT designated Field Staff. A majority of the prerequisites for the Contractor to perform work on or adjacent to MBTA transit lines may be found in the "MBTA Special Instructions" provided herein. The Contractor shall be required to comply with the all applicable requirements of the latest edition of the MBTA Special Instructions available at the time of Contract Award.

The Contractor will have to perform construction related activities on, over, under, within or adjacent to railroad property owned or controlled by the MBTA. Any work that will affect Commuter Rail operations, involve work on, over, under, within or adjacent to the commuter rail right of way must be coordinated with MBTA Railroad Operations and KCS and shall comply with the latest version of the MBTA Railroad Operations Directorate.

An owner or Contractor who wishes permission to enter upon or perform work over, on, under or adjacent to MBTA property shall submit to the offices of the MBTA's designated representative, a request in writing, a minimum of forty-two (42) days prior to the owner or the Contractor's planned commencement of any of the above stated activities.

MBTA COORDINATION – SUBSTITUTE BUSING

Substitute bus transportation will be required for weekend MBTA Commuter Rail shutdowns. The Contractor must coordinate with MBTA Operations Department for provision of bus service. The Contractor shall contact MBTA Operations Dept. a minimum of 6 weeks prior to any planned rail shutdown. The MBTA will be responsible for planning, procuring, and administering the necessary substitute bus transportation services and operations based on the Contractor's approved work schedule.

Prime Contact:

Eric Ciborowski

32 Cobble Hill Road

Somerville, MA 02143

617-634-2567

ECIBOROWSKI@MBTA.COMDGOMES@MBTA.COM**Secondary Contact:**

Delrico Gomes

32 Cobble Hill Road

Somerville, MA 02143

857-366-0404

The Contractor shall be required to attend the MBTA Weekly Track Outage Schedule Coordination Meetings held Wednesdays at 10:00 am at 32 Cobble Hill Road in the small classroom located in the training area at the rear of the building.

FORMWORK AND SITEWORK

The temporary formwork used for concrete placement, shall be removed, and disposed of by the contractor. Any formwork that is not removed within forty-five (45) days after the concrete placement and is reported by Bridge Inspection or other MassDOT personnel will impose a damage of \$500.00 for each form location (On one bridge there may be multiple locations). Payment for removal of concrete forms shall be included in the unit price under the applicable item.

The Contractor is required to broom and clean all work site areas after the removal of excavated debris, regardless of the pre-existing conditions. These include areas excavated under joints such as pier caps, revetment areas. This removal of debris is incidental to the contract with no additional compensation.

PREPARATION OF CONCRETE SURFACES:

All concrete surfaces to be patched shall be roughened, cleaned of all laitance, dirt, grease, oil, other contaminants, and all standing water. All reinforcing steel encountered in the excavation shall be thoroughly cleaned by abrasive blasting before being covered with new concrete.

With approval of the Engineer the Contractor may choose one of the following surface preparation methods. In bonding new concrete to already set concrete the surface of the concrete shall be thoroughly cleaned and roughened then:

- A) Wetted with clean water and then flushed with a mortar composed of equal parts of the cement and sand specified for the new concrete, before new concrete is placed adjacent thereto. New concrete shall be placed before mortar has taken initial set.
- B) Ponded with clean water to achieve Saturated Surface Dry (SSD) condition then it shall be blown off with oil free compressed air.

CONTRACTOR NOTIFICATION

Contractor notification and response will be classified into three categories as follows:

1. EMERGENCY REPAIR:

An Emergency Repair is defined as the work required to repair failed bridge elements, which is of an EMERGENCY NATURE and requires IMMEDIATE ATTENTION as determined by the Engineer. The Contractor will be required to commence an Emergency Repair within four (4) hours after notification by the Department, unless otherwise directed. The nature of the Emergency work will require the Contractor to be available 24 hours per day. In addition to required construction Items, payment for any Emergency Repair Work performed will be paid under Item 748.1 Emergency Response. Emergency Repairs may be initiated verbally due to the need for immediate action but will be followed up by a Work Order assignment in the work order management system soon after.

2. PRIORITY REPAIR:

A Priority Repair is defined as work required to repair failed bridge elements, which is not of an Emergency nature; however, needs to be completed in a timely manner to prevent further deterioration or to meet the need of other constraints. The Contractor will be required to commence a Priority Repair within fourteen (14) calendar days after notification by the Department, unless otherwise directed. Priority Repairs will be initiated, and Work Orders assigned using the work order management system.

CONTRACTOR NOTIFICATION (Continued)**3. SCHEDULED REPAIR:**

A Scheduled Repair is not considered to be of an Emergency nature and has no priority over other repairs. The Contractor will be required to commence scheduled work within thirty (30) calendar days after notification by the Department, unless otherwise directed. The Contractor shall immediately notify the Engineer if unable to begin physical work within thirty (30) calendar days and provide an explanation for the delay. Scheduled repairs will be initiated and Work Orders assigned using the work order management system.

The Contractor will be notified of all Work Orders through the work order management system except for Emergency repairs which may first be assigned verbally with a follow up assignment through the work order management system. The Work Order will identify the location of the work, the category of work (Emergency, Scheduled or Priority), and identify the major items required for the work. The date from which potential non-response damages will be assessed for each work order will be based on the date the work order is assigned in the work order management system to the date the Contractor begins Physical Work.

For a Priority or Scheduled Repair, the Contractor must submit a work schedule and estimate for the Engineer's review and approval within seven (7) calendar days of issuance of the work order. The Contractor's schedule and estimate shall provide information relating to equipment, materials, anticipated work hours, labor availability, itemized estimated value of the repairs, a breakdown of major components of the work (i.e. staging installation, concrete work, etc.) and estimated start and completion dates.

"Physical Work" shall be defined as "physical implementation of the required repair at the bridge site". In no case will Physical Work include any of the following: ordering materials, fabrication of materials, organizing labor forces, coordinating with subcontractors, installing means of access and/or traffic control to implement the required repairs, installing temporary works, or other operations needed to be performed in advance of the required repairs.

This Contract contains both Emergency response mobilization payment items for Emergency Repair work, and Non-Response damages to ensure prompt action by the Contractor.

The ability to assign Emergency Repair work, if required, shall take effect as soon as this Contract is executed.

The Contractor shall have the appropriate communication capabilities that will allow the Department to notify the Contractor of an Emergency Repair on a twenty-four hour (24) per day basis.

The Contractor shall supply the District 3 Highway Director with a list of telephone numbers for personnel who can be contacted twenty-four (24) hours a day in case of an emergency.

WORK ORDER SCHEDULE MILESTONES

Work Orders may include complexities which will have separate milestones as indicated below. All timeframes shown below are in calendar days.

<i>Complexity</i>	<i>Milestone</i>
Engineering Design	Approved Design within 60 days of Work Order
Fabricated Materials	Approved Shop Drawings within 30 Days of Work Order or approved engineering design if engineering design required. Fabrication shall begin within 14 Days of Approved Shop Drawings.
Utility Coordination	Engagement with utilities shall occur within two weeks of issuing the work order. Final approval from the utility of the proposed work or utility protection shall be within 60 days of work order issuance or 60 days of approved engineering design if engineering design required.
Railroad Coordination	Engagement with Railroads shall occur within 14 days of issuing the work order. Access agreement to railroad property shall be in place within 60 days of work order assignment. If engineering is required for a repair, the engineering design shall be provided to the railroad for approval within 30 days. Railroad flaggers shall be requested within two weeks of railroad access agreement.

WORK ORDER SCHEDULE MILESTONES (Continued)

<i>Complexity</i>	<i>Milestone</i>
Physical Work	<p>“Physical Work” shall refer to physical implementation of the required repair at the bridge site. For repairs with no additional complexities as identified in this chart time to start of Physical Work will be measured from the issuance of the work order. In no case will Physical Work include any of the following: ordering materials, fabrication of materials, organizing labor forces, coordinating with subcontractors, installing means of access and/or traffic control to implement the required repairs, installing temporary works, or other operations needed to be performed in advance of the required repairs.</p> <p>For work orders with complexities as outlined in this chart, “Physical Work” will be measured from the receipt of approval for all the necessary complexities.</p> <p>Examples:</p> <p>Work order requiring engineering design and fabrication shall measure time to beginning of Physical Work from the time of approval of the shop drawings.</p> <p>Work order requiring engineering design, fabrication, and utility coordination shall measure time to beginning of Physical Work from the approval of the shop drawings or approval of utility agreement whichever is later.</p> <p>Work order requiring engineering design, fabrication, and railroad coordination shall begin immediately upon flagger availability.</p>

All complexities and components of work orders shall be identified with milestones in the work order bar chart schedule.

NON-RESPONSE DAMAGES

It is the intent of this provision to ensure prompt response to Work Orders based on priority. These Non-Response Damages may be waived by MassDOT when, in the opinion of the Engineer, it is in the best interest of MassDOT to do so.

If the Contractor has not met the complexity milestones as outlined in the Work Order and above, a notification will be sent to the Contractor regarding Non-Responses Damages that will be assessed. The Engineer shall assess damages in the amount of \$1,000 per day (or portion thereof) for each day beyond the milestone due date that the milestone is not met.

Emergency Repairs: If the Contractor has not started Physical Work on an assigned Emergency Repair within four (4) hours from the receipt of the notification, payment under Item 748.1 will only be made at the discretion of the Engineer. Furthermore, the Contractor will be assessed damages in the amount of \$1,000 per hour for each hour Physical Work is delayed.

Priority Repairs

The Contractor shall commence priority work within 14 days after an assignment is issued by the Department, unless otherwise directed. If the Contractor has not started Physical Work on an assignment within 14 days, the Department will notify the Contractor in writing of the intent to issue damages. Damages will begin five (5) days after written notification to the Contractor. The Engineer will assess damages in the amount of \$1,000 per day for each day (or portion thereof) that the Work is delayed.

Scheduled Repairs

The Contractor shall commence scheduled work within 30 days after an assignment is issued by the Department, unless otherwise directed. If the Contractor has not started Physical Work on an assignment within 30 days, the Department will notify the Contractor in writing of the intent to issue damages. Damages will begin five (5) days after written notification to the Contractor. The Engineer will assess damages in the amount of \$1,000 per day for each day (or portion thereof) that the Work is delayed.

“Physical Work” shall refer to physical implementation of the required repair at the bridge site. For repairs with no additional complexities as identified in this chart time to start of Physical Work will be measured from the issuance of the work order. In no case will Physical Work include any of the following: ordering materials, fabrication of materials, organizing labor forces, coordinating with subcontractors, installing means of access and/or traffic control to implement the required repairs, installing temporary works, or other operations needed to be performed in advance of the required repairs.

If the Contractor has not submitted a work schedule or estimate for the Engineer’s review and approval on a Priority or Scheduled Repair within seven (7) calendar days after issuance of the Work Order, the Contractor will be subject to non-response damages in the amount \$500 per day.

In addition, the Engineer shall consider such delays in evaluating the Contractor’s performance.

ENVIRONMENTAL REQUIREMENTS

This heading identifies procedures that shall be followed for bridges over or adjacent to waterways, wetlands, or other bodies of water. Some repairs may be needed in emergency situations where work needs to be performed prior to final permitting.

Work on bridges below the Ordinary High Water line over non-tidal waterways will usually require Section 404 approval from the Army Corps of Engineers and Section 401 Water Quality Certification from the Department of Environmental Protection.

Repairs to bridges in tidal areas and/or navigable waters may require a Coast Guard Bridge Permit, and consistency review by Coastal Zone Management. Time frames for these bridges typically require 4 months for non-tidal bridge repairs and possibly longer for tidal bridge repairs. For permitting purposes, all proposed construction methods that may be required in, on or above water resources shall be identified by the Contractor. The proposed methods shall be reviewed with the District Environmental Engineer who will coordinate with the Environmental Division the appropriate review of permit applicability.

For emergency repairs, the District Environmental Engineer and/or Environmental Division shall be notified immediately for further guidance on obtaining appropriate approvals.

If any locations are located within rare species habitat as designated by the Massachusetts Natural Heritage and Endangered Species Program (NHESP), coordination will be undertaken by the MassDOT District Environmental Engineer. HQ MassDOT Environmental Services Unit is available to provide support. The contractor must notify the District Highway Director and Resident Engineer in writing at least 60 days prior to desired commencement of the proposed activity, however coordination with the MassDOT District Environmental Engineer should occur as early as possible. The contractor is responsible for complying with any permit/restrictions/stipulations regarding work in rare species habitat.

Where repairs or reconstruction will not involve work in any waterways, wetlands or other bodies of water, erosion and siltation controls shall be implemented to ensure that construction activity does not result in siltation of the adjacent water resources. This work, when needed, will be paid under Non-Bid Items and Item 100.1 (Base Labor Rate) as required by the Engineer. Regardless of exemptions from regulations, Enforcement Actions and/or Cease and Desist Orders due to resource damages resulting from construction activity may be invoked at any time.

CONTAMINATED SOIL

Soil to be removed from the project area shall not be assumed to be uncontaminated and must be evaluated prior to off-site management for potential contamination with hazardous materials. No soil may be disposed of off-site without proper assessment by the contractor and approval from the Resident Engineer (RE), District Environmental Engineer (DEE), or the project designee.

SOIL STOCKPILING DIRECTIVE P-22-001

Any stockpiling of soil must be performed in compliance with Policy Directive P-22-001, Off-Site Stockpiling of Soil from MassDOT Construction Projects. This directive limits the allowable locations for off-site stockpiling of soil generated during MassDOT projects and includes various requirements that must be satisfied by the contractor prior to off-site stockpiling. The Contractor is responsible for identifying a suitable stockpile location.

ENVIRONMENTAL PERMITTING

No environmental permits have been obtained at this time. If Contractor erection, demolition, storage, or other procedures require work to occur in or otherwise impact water or wetland resource areas or their buffer zones, 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 Highway Director and the Engineer in writing at least 60 days prior to desired commencement of the proposed activity. All environmental submittals, including any contact with Local, State, or Federal environmental agencies, must be coordinated through the District Environmental Engineer. The Contractor shall 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. The Contractor is responsible for preventing debris of any type to enter waterways or wetland resource areas either temporarily or permanently.

After Notice to Proceed, the Contractor is responsible for complying with any and all environmental permits issued for the work covered under this Contract. The Contractor will not receive additional compensation for work required to achieve compliance with any issued environmental permits as payment for the work will be included in the various bid items.

TREATED WOOD PRODUCTS

The presence of potential treated wood products is unknown at this time, but in the event that an assignment calls for the disposal of portions of treated timber, the Contractor must dispose of the materials in accordance with all applicable state and federal regulations at a licensed facility. The Contractor will be required to submit manifests and/or certificates of disposal to the Engineer prior to the completion of the contract. All work in conjunction with the proper testing, loading, transportation, and all incidental costs required for legal disposal of treated wood products shall be covered and paid under Non-Bid Items and Item 100.1 Base Labor Rate when needed and as required by the Engineer.

All new treated wood shall meet the requirements of M9.05.1 for Wood Products, including the most recent versions of AWWA UI and M4 which are incorporated by reference. No new wood shall be treated with inorganic arsenic [including chromated copper arsenate (CCA), ammoniacal copper arsenate (ACA), and ammoniacal copper zinc arsenate (ACZA)], creosote, or pentachlorophenol in all project construction, including all guardrail and timber check dam components.

CONTRACTOR ACTIVITY ADJACENT TO WETLANDS

The Contractor shall not stockpile material or equipment, perform maintenance or refuel equipment in a wetland area, within 100 feet of a wetland, or within 200 feet of a river, stream, pond, or other similar open body of water.

TRUCK SAFETY DEVICES

(Supplementing Subsection 7.04: Motor Vehicles)

All motor vehicles subject to Section 7 of Chapter 90 to be operated under this Contract shall be equipped with safety devices as provided therein and in 540 CMR 4.00.

By December 31, 2025, the Contractor shall certify to the Registry of Motor Vehicles, in a manner prescribed by the Registrar, that all applicable vehicles are equipped with Lateral Protective Devices, Convex Mirrors, Cross Over Mirror(s) and Back Up Cameras in accordance with the requirements of 540 CMR 4.00.

The Contractor shall provide evidence satisfactory to the Department to demonstrate compliance with the above certification requirement for all applicable vehicles operated under this Contract by the Contractor and its subcontractors and vendors in a manner set forth by the Department. Thereafter, the Contractor shall have an affirmative obligation to continue to provide such evidence of compliance on an ongoing basis and no later than 7 days after certification with the Registry of Motor Vehicles of any additional vehicles operated under this Contract by the Contractor and its subcontractors and vendors.

Non-compliance with respect to a vehicle that is subject to 540 CMR 4.00 may subject the Contractor to statutory fines as established in M.G.L. c. 90, § 7 and/or contractual remedies up to and including termination of the Contract.

EROSION AND SEDIMENT CONTROL

The Engineer has the authority to limit the surface areas of erodible earth material exposed by excavation, borrow and fill or similar operations, and to direct the Contractor to provide immediate, permanent, or temporary control measures to prevent contamination of any adjacent bodies of water or drainage systems by installing compost filter tubes, staked hay bales, sedimentation basins, silt fences or other control devices. Work or methods as necessary to control erosion and sedimentation will be paid under 100.1 – Base Labor and Non-Bid items.

The erosion and sediment control features installed by the Contractor shall be satisfactorily maintained by the Contractor until acceptance of work under this Contract.

In the event of conflict between these Specifications and Laws, Rules, or Regulations of local agencies, the more restrictive requirements shall apply.

If temporary erosion and sediment control measures become necessary due to the Contractor's negligence or carelessness, the control measures shall be performed at the Contractor's own expense.

EROSION AND SEDIMENT CONTROL (Continued)

Failure by the Contractor to control erosion, pollution, and/or siltation shall be cause for the Engineer to employ departmental action and/or outside assistance to provide the necessary corrective measures, the cost of which shall be deducted from the Contractor's monthly progress estimate.

ASBESTOS CONCERNS – ASBESTOS LIABILITY INSURANCE

Asbestos may be present on bridges in forms including but not limited to asbestos cement utility conduit, pipe insulation, pipe wrap, and/or gunite/shotcrete. The contractor shall identify potential asbestos-containing material (ACM) that may be impacted as part of the contract work. If ACM or potential ACM will be physically impacted, the contractor shall communicate this information to the Engineer, District Environmental Engineer (DEE), receive approval prior to beginning work, and conduct all work in accordance with applicable federal, state, and local regulations. The work will be paid under Non-Bid items and Item 100.1 as required by the Engineer. No Assignment of work will be allowed without the approval of the Engineer.

Upon assignment of a work order, if asbestos-containing material is anticipated to be encountered, prior to any testing or removal of asbestos, Asbestos Liability Insurance shall be obtained for this project in accordance with Subsection 7.05 of the Standard Specifications. The Contractor and the Massachusetts Department of Transportation shall be named as additional insureds. Costs will be reimbursed to the Contractor.

DRAINAGE

It shall be the Contractor's responsibility to maintain the function of drainage systems in areas within or adjacent to the limits of construction.

DRAINAGE SEDIMENTS

Drainage sediments should be handled as directed in Subsection 227, Drainage System Sediment of the Standard Specifications. This work will be paid under Non-Bid Items and Item 100.1 Base Labor Rate (time and materials) as required by the Engineer unless there is a Contract bid Item to cover the work.

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.

NORTHERN LONG-EARED BAT AND TRICOLORED BAT PROTECTION

The northern long-eared bat (*Myotis septentrionalis*; NLEB) and tricolored bat (*Perimyotis subflavus*; TCB) are listed as federally endangered or proposed endangered, respectfully, under the Endangered Species Act (ESA). The U.S. Fish and Wildlife Service (USFWS) developed this guidance to address ESA compliance and promote conservation of NLEB and TCB. As there is no Federal nexus (Federal funding or permits) for this project, Section 7 consultation was not required or conducted. However, Section 9 of the ESA prohibits anyone from “taking” or harming an endangered species, and the below language shall be adhered to in order to maintain compliance with the ESA.

If any of the project locations require work within U.S. Army Corps of Engineers (ACOE) jurisdictional wetlands, the ACOE will be the lead federal agency for ESA consultation with the U.S. Fish & Wildlife Service (USFWS). Most consultations for the NLEB take 30 days.

The following Avoidance and Minimization Measures (AMMs) must be strictly adhered to in order to protect NLEB and TCB and to be in compliance with the ESA. Contact MassDOT Environmental Services - Wildlife & Endangered Species Unit Supervisor (David Paulson, david.j.paulson@dot.state.ma.us, 857-262-3378) for questions about project limits, restrictions, or conservation measures.

The Resident Engineer can check on the status of AMM applicability by sending a locus map of the proposed work to MassDOT Highway Division’s Environmental Services Section - Wildlife & Endangered Species Unit Supervisor for review and a determination if some of the AMMs and TOY restriction can be waived.

Required AMM for all projects:

- The Contractor shall ensure all personnel working in on the project site are aware of all environmental commitments related to NLEB and TCB, including all applicable AMMs. NLEB Bat information (<https://www.fws.gov/midwest/endangered/mammals/nleb/> and <https://www.fws.gov/species/tricolored-bat-perimyotis-subflavus>) shall be made available to all personnel.

If temporary lighting is proposed within the project scope, the following AMM is applicable:

Lighting AMM:

- Direct temporary lighting away from suitable habitat during the active season: **April 15 to October 31.**

If the Removal of Trees and/or Woody Vegetation >3-inch in diameter is proposed within the project scope, the following AMMs are applicable:

Tree AMMs:

- If additional cutting is proposed by the Contractor that is outside the scope of this contract, additional review is required by the MassDOT Highway Division’s Environmental Services Section, and additional review and restrictions may be required by the USFWS.

NORTHERN LONG-EARED BAT AND TRICOLORED BAT PROTECTION (Continued)

- Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits).
- In order to protect northern long-eared bats and their young during their active season, **no tree cutting shall be conducted during the Time of Year (TOY) restriction of April 15 to October 31.**
- Do not remove **documented** or NLEB roosts that are still suitable for roosting, or trees within 0.25 miles of roosts, or **documented** foraging habitat any time of year (<http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-mammals/northern-long-eared-bat.html>).
- The Contractor shall ensure all personnel working in on the project site are aware of all environmental commitments related to NLEB and TCB, including the **TOY** restriction.

If the Bridge Work is proposed within the project scope, the following AMMs are applicable: Bridge AMMs:

- **Bridge AMM 1** - To completely avoid direct effects to roosting bats, perform any bridge removal, replacement, and/or maintenance work during the winter hibernation period unless a hibernating colony of bats is present (contact your local USFWS Field Office for exact dates). Also, follow Bridge AMM 4.
 - **Note:** Bridge AMM 1 is an avoidance measure for direct effects; the full implementation of which may not always be practicable. **If bridge removal, replacement, and/or maintenance work must be performed outside of the winter hibernation period, then follow Bridge AMMs 2-4.**
- **Bridge AMM 2 - Colony or Assuming Presence of Bats**
 - If assuming presence of bats or if bridge assessment or P/A surveys suggest presence of a colony of bats, and work is conducted during the active season, ensure activity will not disturb bats. The following types of bridge work can generally be conducted with the presence of bats:
 - above deck work where construction equipment or materials do not extend to the underside of deck where bats may be located (e.g., materials that may drip down to underside of deck), or does not include percussives (vibration) or noise levels above general traffic (e.g., road line painting, wing-wall work).

NORTHERN LONG-EARED BAT AND TRICOLORED BAT PROTECTION (Continued)

- below deck work that is conducted away from roosting bats and does not involve percussives or noise level above general traffic (e.g., wing-wall work, some abutment, beam end, scour, or pier repair).
- **Bridge AMM 3 - Small Number of Bats**
 - If bridge assessment or P/A surveys suggest presence of a small number of bats (<5 – not a colony), and work is conducted during the active season, the following types of bridge work can generally be conducted with the presence of bats:
 - above deck work where construction equipment or materials do not extend to the underside of deck where bats may be located (e.g., materials that may drip down to underside of deck), or does not include percussives (vibration) or noise levels above general traffic (e.g., road line painting, wing-wall work).
 - below deck work that is conducted away from roosting bats and does not involve percussives or noise level above general traffic (e.g., wing-wall work, some abutment, beam end, scour, or pier repair).
 - any other bridge removal, replacement, and/or maintenance work (which may include activities with percussives) conducted in the evening while the bats are feeding, starting one hour after sunset, and ending one hour before daylight excluding the hours between 10 p.m. and midnight and keep the light localized.
- **Bridge AMM 4** - If assuming presence of bats, or if bridge assessment or P/A surveys suggest presence of bats, ensure suitable roosting habitat is maintained. Suitable roosting sites may be incorporated into the design of a new bridge.

**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 and/or 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”.

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.

**GENERAL REQUIREMENTS FOR DEMOLITION AND
WORK INVOLVING PAINTED STEEL** (Continued)

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 μ g/m³.

For purposes of limiting the lead (Pb) dust, the Contractor will be required to dampen the lead paint work areas. The contractor shall install a proper shielding and/or tarpaulins under all lead-paint-coated surfaces to be shear cut or bolts or rivets ordered removed in order to catch any loose lead paint chips, dust or particles.

NOTICE TO OWNERS OF UTILITIES*(Supplementing Subsection 7.13)*

District 3 Utility/Constructability Engineer Ross Goodale (857) 368-3204

Email: Ross.A.Goodale@dot.state.ma.us

If available, the bridge plans indicate the location of the existing known utilities in the vicinity of the work. As the accuracy and completeness of the plans are not guaranteed in any manner, it is the Contractor's responsibility to make his own investigation in order to assure that no damage to existing structures, drainage lines, traffic signal conduits, etc., will occur.

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 Contractor's 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.

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

Select the City/Town, and then locate the utility

The utility contact list is for guidance only and is not guaranteed to be complete or up to date.

NATIONAL GRID EMERGENCY TELEPHONE NUMBERS**GAS:**

Emergency: 1-800-233-5325

New Service: 1- 877-696-4743

Customer Support: 1-800-732-3400

ELECTRIC:

Outage/ Emergency: 1-800-465-1212

New Service: 1-800-375-7405

Customer Support: 1-800-322-3223

EVERSOURCE EMERGENCY TELEPHONE NUMBERS**GAS:**

Outage/ Emergency: 800-592-2000

New Service: 866-678-2744

Customer Support: 800-592-2000

ELECTRIC:

Outage/ Emergency: 800-592-2000 or 844-726-7562

New Service: 1-888-633-3797 (1-888-need pwr)

Customer Support: 1-800-340-9822

NOTIFICATION OF PUBLIC OFFICIALS

Town officials are shown at website <https://www.mass.gov/lists/massachusetts-cities-and-towns> and select the required City/Town website.

State Police are shown at website <https://www.mass.gov/info-details/massachusetts-state-police-troop-boundaries>. Select the area of jurisdiction to find the local station.

The Contractor shall be responsible for informing the following officials in each area that he is assigned to work in:

Superintendent, Department of Public Works, or Town Engineer. Superintendent, Water Department, Superintendent, Sewer Departments. Police Department, Fire Department, Electric Company, Railroads.

SUPPLEMENTAL REQUIREMENTS FOR NON-BID ITEMS

(Supplementing Subsection 3.04)

The Contractor will be paid for additional artisans, equipment rental, materials, engineering services and specialty services required to perform the work plus (10%) percent, plus actual increased bond premium.

The Contractor shall be required to furnish certified paid receipts for additional artisans, equipment rental, materials, engineering services and specialty services that are required to perform the work prior to payment by the Department. Increased bond premium for additional artisans, equipment rental, materials, engineering services and specialty services will be paid after a certified paid receipt is submitted showing payment of the increased bond.

NON-BID ITEMS

For work not covered by the various bid items in this Contract, it is the intent to pay for such related work on a time and materials basis, as directed by the Engineer. The payment for such work is outlined in the following sections: Payment for Materials, Payment for Rental Equipment, Payment for Engineering Services, Payment for Specialty Services/Additional Artisans.

A. PAYMENT FOR MATERIALS

The Contractor will be paid the actual cost for materials that are required to maintain or repair a bridge but are not covered under the Contract bid Items plus ten (10) percent. Any arrangements for the purchase of materials will be considered incidental. Delivery charges will be incidental to the material charges. State and Federal taxes if billed will not be reimbursed by MassDOT. No materials shall be ordered until approved by the Engineer and competitive prices may be required if the Engineer directs.

Payments for the installation of materials and/or parts will be made under Item 100.1. All materials which are necessary to perform the work under the various contract bid items shall be incidental to those Items at no additional compensation.

B. PAYMENT FOR RENTAL EQUIPMENT

The Contractor will be paid the actual rental cost for the equipment, which may be required to perform certain repair work that has not been included in the contract bid items, plus ten (10) percent. However, no equipment shall be rented until approved by the Engineer. The rental equipment shall not be part of the tradesman basic toolbox as specified under Item 100.1 Base Labor Rate.

Contractor-owned equipment required under this contract, (with the exception of equipment listed under the various artisans' descriptions in Item 100.1 Base Labor Rate will be reimbursed in the format outlined under Subsection 9.03 "Payment for extra Work" Section C of the Standard Specifications. Rental Equipment will not carry any overtime premium rate after being in full operation for more than 8 hours in a day.

Unless the rented equipment cost includes the operator, the Contractor will receive compensation for the operator of the "Rental Equipment" used for "Related Work" as specified in Item 100.1 Base Labor Rate.

The Contractor must get the authorization of the Resident Engineer before any equipment is rented and competitive prices may be required if the Engineer directs.

All rental equipment and tools shall be in excellent working condition. The Contractor shall not be paid for equipment down time at the discretion of the Engineer.

NON-BID ITEMS (Continued)

The actual cost for rental equipment including equipment that is required when working from water below (i.e., barge equipped with 60' or higher boom lift, boat, operator and other safety equipment) shall be judged in accordance with the rate specified in the Rental Blue Book and it is the Contractor's responsibility to provide a copy of this Blue Book to the Department. The rental compensation shall also include the cost of a boat captain/tender crew. The rental for equipment will be paid on an hourly basis and will not carry any overtime rate after eight hours of operation.

All rental equipment and tools which are necessary to prosecute the work under the various contract bid items shall be incidental to those Items at no additional compensation.

C. PAYMENT FOR ENGINEERING SERVICES

Each non-routine structural repair for which there is no Contract bid Items to cover the work, the Contractor shall submit a design by a Professional Engineer of the appropriate discipline registered in Massachusetts (who shall be from the Department's approved consultant list) within one week of notification (seven (7) calendar days after receipt of formal Work Order).

This design shall address all structural defects itemized in the Work Order. It shall be submitted to the Engineer and the proper railroad authority (i.e., Amtrak, MBTA. etc.) when applicable. The Contractor must get the proposed design approved by both the Engineer and proper railroad authority (when applicable) prior to commencing any work.

The Contractor will be paid the actual cost for the Engineering Services for the structural design by a Professional Engineer of the appropriate discipline registered in Massachusetts, plus ten (10) percent when any Engineering Services are required for work done on a time and materials basis for which there is no bid Item. The Engineer shall approve all engineering costs prior to any design work being undertaken.

All engineering services which are necessary to prosecute the work under the various Contract bid items shall be incidental to those Items at no additional compensation.

When engineering designs or other consulting services are deemed necessary by the Engineer, the design firm will submit a cost estimate of the proposed work. This estimate will include the classification, estimated hours needed, and actual hourly rate for each individual anticipated to be used in developing the finished product. The billable rates shall include overhead and profit. Overhead shall be as approved by MassDOT Audit Section or in absence of approved audited rates a maximum 155% shall apply for overhead. The profit fee is 10%. The billable rate shall be calculated using $1.10 \times (\text{Base Hourly Rate} + \text{Base Hourly Rate} \times \text{Overhead Rate } \%)$.

NON-BID ITEMS (Continued)**D. PAYMENT FOR SPECIALTY SERVICES/ ADDITIONAL ARTISANS**

The Contractor will be paid for any artisans that are not categorized under Item 100.1 “Base Labor Rate” (Regardless of whether the additional artisans are hired by the Contractor as a specialty sub-contractor crew, or as an individual artisan) required to repair or maintain the bridges or any work that has not been included as incidental to any Contract Bid Item plus ten (10) percent. However, no artisans shall be hired until approved by the Engineer and competitive prices may be required if the Engineer so directs. The Contractor will not bid this item. If the Engineer has knowledge of the source of additional artisans, which are competitive with the Contractor's choice, then the Contractor may be required to investigate and use an alternative choice.

COST ESTIMATES

Where the scope of a repair task can be adequately determined and described, the Contractor, when directed by the Engineer, shall be required to submit a Cost Estimate for the repair task.

Each Cost Estimate, submitted in writing, shall include an itemized scope of work, a working schedule (including the number of working days and hours worked each day by each category of artisan), work procedures and a NOT-TO-EXCEED cost breakdown itemized by the following: the number and type of workers, the number and type of equipment, barges, materials, specialty contractors, engineering services, traffic controls and police, etc. The Cost Estimate submittal must also state if roadway closures and waterway and/or bridge closures will be required.

The Engineer will approve each Cost Estimate submittal in writing. A submittal does not guarantee the Contractor will be assigned the work. Payment will be based on actual hours worked at the contractual rates for various items as previously described up to the maximum task amount. Completion of the task is the sole responsibility of the Contractor once the not-to- exceed amount has been reached. Should unforeseen problems develop during the course of the task completion; the Contractor will submit to the Engineer a revised scope of work with a comparison to the original scope of work along with a breakdown of the additional costs for approval by the Engineer. Approval for any increases to the agreed upon not-to-exceed cost will be dependent upon the justification of the additional work.

If the Contractor performs work which is not provided for in this Contract, or which was not authorized in writing by the Engineer, said Contractor shall receive no compensation for such work.

The management of the project and generating Cost Estimates, including such items as the planning of repair details, hiring of subcontractors, meetings with affected parties, scheduling of required artisans, purchasing of the necessary materials and the arrangement of equipment rentals, etc. will be considered incidental to the work and as such, no additional compensation will be provided.

RATES OF PAYMENT

Payment for Non-Bid Items and Item 100.1 Base Labor Rate will be made for time spent on the project doing actual work on the Department's bridges and shall NOT include travel time to and from the Contractor's place of business and it shall also not include time for investigative field trips to find out how much material, equipment, tools, etc., may be needed for the work.

All equipment, materials, engineering costs and artisans' compensation which are necessary to prosecute the work under the various contract bid items shall be incidental to those bid Items at no additional compensation.

Note: For work covered by bid items in this contract and also those not covered, there may be situations where the Department has pertinent materials or equipment stockpiled. The Department reserves the right to utilize these materials or equipment as seen fit in the prosecution of the work.

The Contractor will be reimbursed for the total actual cost (plus a percentage markup as indicated) for materials, equipment rental, additional artisans and engineering services required for related work directed by the Engineer. Artisans will be compensated as specified in Item 100.1 "Base Labor Rate". The Contractor will not bid the materials, equipment rental, additional artisan, and engineering services Items.

Payment for Non-Bid Items will be based on bills submitted, covering all charges for labor, materials, and equipment according to the respective terms of the contract. Bills covering the total charges incurred in any given month are to be submitted by the fifteenth of the following month for processing.

The Contractor is encouraged to submit bills/invoices of all charges submitted to the Engineer by the 15th of the following month. It shall be required that the Contractor furnish certified copies of any or all payrolls for the Contract, showing the name, address, and occupational classification of each employee on said works, and the hours worked by, and the wages paid to such employee.

2026 FIFA WORLD CUP – BOSTON, MASSACHUSETTS

The 2026 FIFA World Cup will be held at Gillette Stadium in Foxborough, related events, and significant tourist events such as Sail Boston and the 250th Anniversary of the United States will be held throughout the region. Matches and Fan Fest and other possible 250th Celebration activities are scheduled through June, July and August 2026. The District will be imposing work and/or traffic restrictions as necessary to minimize impacts during these periods when, as determined by MassDOT, the Contractor's operations could impact vehicular traffic, particularly on interstate highways and major arterials throughout the region and local roads near event sites. No additional compensation will be allowed for work restrictions except as determined under Subsection 8.10. nor will the Contractor have any claim for related costs, direct or indirect. The Contract time determinations have accounted for potential work restriction during this period and Contractor's should plan accordingly. Any necessary or emergency work required during this time will require District approval.

SUBSECTION 8.14 UTILITY COORDINATION, DOCUMENTATION, AND MONITORING RESPONSIBILITIES

A. GENERAL

In accordance with the provisions of Section 8.00 Prosecution and Progress, utility coordination is a critical aspect to this Contract. This section defines the responsibility of the Contractor and MassDOT, with regard to the initial /utility relocation plan and changes that occur as the prosecution of the Work progresses. The Engineer, with assistance from the Contractor shall coordinate with Utility companies that are impacted by the Contractor's operations. To support this effort, the Contractor shall provide routine and accurate schedule updates, provide notification of delays, and provide documentation of the steps taken to resolve any conflicts for the temporary and/or permanent relocations of the impacted utilities. The Contractor shall provide copies to the Engineer of the Contractor communication with the Utility companies, including but not limited to:

- Providing advanced notice, for all utility-related meetings initiated by the Contractor.
- Providing meeting minutes for all utility-related meetings that the Contractor attends.
- Providing all test pit records.
- Request for Early Utility work requirements of this section (see below).
- Notification letters for any proposed changes to Utility start dates and/or sequencing.
- Written notification to the Engineer of all apparent utility delays within seven (7) Calendar Days after a recognized delay to actual work in the field – either caused by a Utility or the Contractor.
- Any communication, initiated by the Contractor, associated with additional Right-of-Way needs in support of utility work.
- Submission of completed Utility Completion Forms.

B. PROJECT UTILITY COORDINATION (PUC) FORM

The utility schedule and sequence information provided in the Project Utility Coordination Form (if applicable) is the best available information at the time of the bid and has been considered in setting the contract duration. The Contractor shall use all of this information in developing the bid price and the Baseline Schedule Submission, inclusive of the individual utility durations sequencing requirements, and any work that has been noted as potentially concurrent utility installations.

C. INITIATION OF UTILITY WORK

The Engineer will issue all initial notice-to-proceed dates to each Utility company based on either the:

- 1) Contractor's accepted Baseline Schedule
- 2) An approved Early Utility Request in the form of an Early Utility sub-net schedule (in accordance with the requirements of this Subsection)
- 3) An approved Proposal Schedule

C.1 - BASELINE SCHEDULE – UTILITY BASIS

The Contractor shall provide a Baseline Schedule submission in accordance with the requirements of Subsection 8.02 and inclusive of all of the information provided in the PUC Form that has been issued in the Contract documents. This is to include the utility durations, sequencing of work, allowable concurrent work, and all applicable considerations that have been depicted on the PUC Form.

SUBSECTION 8.14 (Continued)

C.2 – EARLY UTILITY REQUEST – (aka SUBNET SCHEDULE) PRIOR TO THE BASELINE
All early utility work is defined as any anticipated/required utility relocations that need to occur prior to the Baseline Schedule acceptance. In all cases of proposed early utility relocation, the Contractor shall present all known information at the pre-construction conference in the form of a ‘sub-net’ schedule showing when each early utility activity needs to be issued a notice-to-proceed. The Contractor shall provide advance notification of this intent to request early utility work in writing at or prior to the Pre-Construction meeting. Prior to officially requesting approval for early utility work, the Contractor shall also coordinate with MassDOT and all utility companies (private, state or municipal) which may be impacted by the Contract. If this request is acceptable to the Utilities and to MassDOT, the Engineer will issue a notice-to-proceed to the affected Utilities, based on these accepted dates.

C.3 – PROPOSAL SCHEDULE - CHANGES TO THE PUC FORM

If the Contractor intends to submit a schedule (in accordance with MassDOT Standard Specifications, Division I, Subsection 8.02) that contains durations or sequencing that vary from those provided in the Project Utility Coordination (PUC) Form, the 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.

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.

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.

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.

SECTION 722 CONSTRUCTION SCHEDULING DESCRIPTION

722.20 General

The Contractor's approach to prosecution of the Work shall be disclosed to the Department by submission of a Critical Path Method (CPM) schedule and a cost/resource loaded Construction Schedule as defined by the schedule type set forth below. These requirements are in addition to any requirements imposed in other sections.

This section establishes the requirement for scheduling submissions. There are four schedule types identified as types A, B, C and D.

All schedules shall be prepared and submitted in accordance with this specification and the instructions contained in the Construction Schedule Toolkit located on the MassDOT-Highway Division website at <https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit>.

Type A –

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Cost-loaded & Resource Loaded CPM
- Resources Graphic Reporting
- Cash Flow Projections from the CPM
- Cash Flow Charts
- Monthly Projected Spending Report (PSR)
- Contractor-furnished CPM software and computer

Type B –

- Schedule Planning Session
 - Baseline CPM Schedule
 - Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
- Cost-loaded & Resource Loaded CPM
- Monthly Projected Spending Report (PSR)
- Contractor-furnished CPM software and computer

Type C –

- Schedule Planning Session
- Baseline CPM Schedule
- Monthly Update CPM Schedule
- Short-term Construction Schedule
- Contract Schedule Update Meeting
 - Monthly Projected Spending Report (PSR)
- Contractor-furnished CPM software and computer

SECTION 722 (Continued)**Type D -**

- Bar chart schedule updated monthly or at the request of the Engineer
- Short-term Construction Schedule
- Monthly Projected Spending Report (PSR)

EQUIPMENT, PERSONNEL**722.40 General****A. Software Requirements**

The Contractor shall use Primavera P6 computer scheduling software.

In addition to the requirements of Section 740 – Engineer’s Field Office and Equipment, the Contractor shall provide to the Department one (1) copy of the scheduling software, one (1) software license and one (1) computer capable of running the scheduling software for the duration of the Contract. This computer and software shall be installed in the Engineer’s Field Office. The computer and software shall be maintained and serviced at no additional cost to the Department.

B. Scheduler Requirements

The Scheduler shall be approved by the Engineer.

For Type A, B and C Schedules the name of the Contractor’s Project Scheduler together with his/her qualifications shall be submitted to the Department for approval by the Engineer within seven (7) Calendar Days after NTP. The Project Scheduler shall have a minimum of five (5) years of project CPM scheduling experience, three (3) years of which shall be on projects of similar scope and value as the project for which the Project Scheduler is being proposed. References shall be provided from past projects that can attest to the capabilities of the Project Scheduler.

SCHEDULING METHODS**722.60 General****A. Schedule Planning Session**

The Contractor shall conduct a schedule planning session prior to submission of the Baseline Schedule. This session will be attended by the Department and its consultants. During this session, the Contractor shall present its planned approach to the project including, but not limited to:

1. the Work to be performed by the Contractor and its subcontractors;
2. the planned construction sequence and phasing; planned crew sizes;
3. summary of equipment types, sizes, and numbers to be used for each work activity;
4. all early work related to third party utilities;
5. identification of the most critical submittals and projected submission timelines;
6. estimated durations of major work activities;
7. the anticipated Critical Path of the project and a summary of the activities on that Critical Path;
8. a summary of the most difficult schedule challenges the Contractor is anticipating and how it plans to manage and control those challenges;

SECTION 722 (Continued)

9. a summary of the anticipated quarterly cash flow over the life of the project.

This will be an interactive session and the Contractor shall answer all questions that the Department and its consultants may have. The Contractor shall provide a written summary of the information presented and discussed during the session to the Engineer. The Contractor's Baseline Schedule and accompanying Schedule Narrative shall incorporate the information discussed at this Schedule Planning Session.

B. Schedule Reviews by the Department**1. Baseline Schedule Reviews**

The Engineer will respond to the Baseline Schedule Submission within thirty (30) Calendar Days of receipt providing comments, questions and/or disposition that either accepts the schedule or requires revision and resubmittal. Rejected Baseline Schedules shall be resubmitted within fifteen (15) Calendar Days after receipt of the Engineer's comments.

2. Contract Progress Schedule / Monthly Update Reviews / Recovery Schedules

The Engineer will respond to each submittal within twenty-one (21) Calendar Days. Rejected schedules shall be resubmitted by the Contractor within five (5) Calendar Days after receipt of the Engineer's comments.

The Engineer's review comments shall not be construed as direction to change the Contractor's means and methods. The review and acceptance of the CPM schedule does not relieve the Contractor of the responsibility for accomplishing the work within the contract required completion dates. Omissions and errors in the accepted CPM schedule shall not excuse performance less than that required by the Contract.

722.61 Schedule Content and Preparation Requirements

All schedules shall be prepared and submitted in accordance with the instructions contained in the Construction Schedule Toolkit located on the MassDOT-Highway Division website at:

<https://www.mass.gov/info-details/massdot-highway-contractors-schedule-toolkit>

and the following:

A. LOGIC

The schedules shall divide the Work into activities with appropriate logic ties to show:

1. conformance with the requirements of this Section and Division I, Subsection 8.02 - Schedule of Operations
2. the Contractor's overall approach to the planning, scheduling, and execution of the Work
3. conformance with any additional sequences of Work required by the Contract Documents, including, but not limited to, Subsection 8.03 - Prosecution of Work and Subsection 8.06 – Limitations of Operations.

SECTION 722 (Continued)**B. ACTIVITIES**

The schedule shall clearly define the progression of the Work from the Notice to Proceed (NTP) to Contractor Field Completion (CFC) by using separate activities, or including attributes within appropriate activities, to address each of the following:

1. Notice to Proceed
2. Work Breakdown Structure
3. The Critical Path is clearly defined and organized.
4. Float shall be clearly identified.
5. Detailed activities to satisfy permit requirements.
6. Subcontractor approvals at fifteen (15) Calendar Days from submittal to response
7. The preparation and submission of shop drawings, procedures, and other required submittals, with a planned duration that is to be demonstrated to the Engineer as reasonable.
8. The review and return of shop drawings, procedures, and other required submittals, approved or with comments, the duration of which shall be thirty (30) Calendar Days, unless otherwise specified or as approved by the Engineer.
9. Procurement of fabricated materials and equipment with long lead times, including time for review and approval of submittals required before procuring and fabricating.
10. Each component of the Work defined by specific activities.
11. Right-of-Way (ROW) takings that have been identified in the Contract.
12. Early Utility Relocation (by others) that has been identified in the Contract.
13. Interfaces with adjacent work, utility companies, other public agencies, sensitive abutters, and/or any other third-party work affecting the Contract.
14. Utility work to be performed in accordance with the Project Utility Coordination (PUC) Form as provided in Section 8.14 - Utilities Coordination, Documentation and Monitoring Responsibilities
15. Access Restraints – restrictions on access to areas of the Work that are defined by the Department in the bid package, in Subsection 8.06 – Limitations of Operations or elsewhere in the Contract
16. Limitations of Work – time of year restrictions and any other limitations identified in the contract
17. Traffic work zone set-up and removal, night work and phasing
18. Material Certifications
19. Milestones listed in Subsection 8.03 - Prosecution of Work or elsewhere in the Contract Documents
20. For Type A and B Contracts only: All items to be paid for, including all Unit Price and Lump Sum pay items, shall be identified by activity. This shall include all non-construction activities such as engineering work; purchase of permanent materials and equipment, purchase of structural steel stock, equipment procurement, equipment delivery to the site or storage location and the representative amount of overhead/indirect costs that was included in the Contractor's Bid Prices.

SECTION 722 (Continued)

21. Contractor's request for validation of FBU (ready to open to traffic)
22. Full Beneficial Use (FBU) Contract Milestone per the following requirements: The majority of contract Work has been completed and the asset(s) has been opened for full multi-modal transportation use, except for limited contract work items that do not materially impair or hinder the intended public use of the transportation facility. All anticipated lane takings have been completed, except for minor, short term work items and as defined in Subsection 8.03 - Prosecution of Work
23. The Department's confirmation of completed work to allow for FBU.
24. Contractor's request for validation of Substantial Completion
25. Department generated punch list of twenty-one (21) Calendar Days
26. Substantial Completion Contract Milestone as defined in the standard specifications.
27. Punch list Completion Period of at least thirty (30) Calendar Days per the requirements of Subsections 5.11 - Final Acceptance, 7.15 - Claims Against Contractors for Payment of Labor, Materials and Other Purposes
28. Contractor confirmation that all punchlist work and documentation has been completed.
29. Physical Completion of the Work Contract Milestone per the requirements of Subsections 5.11 - Final Acceptance and 8.03 - Prosecution of Work
30. Documentation Completion per the requirements of Subsections 5.11 - Final Acceptance and 8.03 - Prosecution of Work
31. Contractor Field Completion Contract Milestone (which can also be considered the completion date) per the following requirements: All physical contract Work is complete including punchlist. The Contractor has fully de-mobilized from field operations and as defined in Subsection 5.11

C. EARLY AND LATE DATES

Early Dates shall be based on proceeding with the Work or a designated part of the Work exactly on the date when the corresponding Contract Time commences. Late Dates shall be based on completing the Work or a designated part of the Work exactly on the corresponding Contract Time, even if the Contractor anticipates early completion.

D. DURATIONS

Activity durations shall be in Work Days. Planned Original Durations shall be established with consideration of resources and production rates that correspond to the Contractor's Bid Price. Within all of the Department-required schedules, the Contractor shall plan the Work using durations for all physical construction activities of no less than one (1) Work Day and no greater than fourteen (14) Work Days, unless approved by the Engineer as part of the Baseline Schedule Review.

SECTION 722 (Continued)

Should there be an activity with a duration that is determined by the Engineer to be unreasonable, the Contractor will be asked to provide a basis of the duration using bid documents, historic production rates for similar work, or other form of validation that is acceptable to the Engineer. Should the Contractor and the Engineer be unable to agree on reasonable activity durations, the Engineer will, at a minimum, note the disagreement in the Baseline Schedule Review along with a duration the Engineer considers reasonable and the basis for that duration. A schedule that contains a substantial number of activities with durations that are deemed unreasonable by the Engineer will not be accepted.

E. MATERIALS ON HAND

The Contractor shall identify in the Baseline Schedule all items of permanent materials (Materials On Hand) for which the Contractor intends to request payment prior to the incorporation of such items into the Work.

F. ACTIVITY DESCRIPTIONS

The Contractor shall use activity descriptions in all schedules that clearly describe the work to be performed using a combination of words, structure numbers, station numbers, bid item numbers, work breakdown structure (WBS) and/or elevations in a concise and compact label.

G. ACTIVITY IDENTIFICATION NUMBERS

The Contractor shall use the activity identification numbering system specified in the MassDOT Highway Division Contractor Construction Schedule Toolkit.

H. ACTIVITY CODES

The Contractor shall use the activity codes specified in the MassDOT Highway Division Contractor Construction Schedule Toolkit.

I. CALENDARS

Different calendars may be created and assigned to all activities or to individual activities. Calendars define the available hours of work in each Calendar Day, holidays and general or project-specific non-Work Days such as Fish Migration Periods, time-of-year (TOY) restrictions and/or area roadway restrictions. All calendars shall extend two years beyond the current project completion date.

Project Special Provisions identify specific calendar restrictions some examples of special calendars include, but are not limited to:

- Winter Shutdown Period, specific work is required by separate special provision to be performed during the winter. See Special Provision 8.03 (if applicable)
- Peak traffic hours on heavily traveled roadways. This shall be from 6:30 am to 9:30 am and from 3:30 pm to 7:00 pm, unless specified differently elsewhere in the Contract.
- Special requirements by sensitive abutters, railroads, utilities and/or other state agencies as defined in the Contract.
- Planting seasons for trees, shrubs and grasses and wetlands mitigation work.

SECTION 722 (Continued)

- Cape Cod and the Islands Summer Roadway Work Restrictions: A general restriction against highway and bridge construction is enforced between Memorial Day and Labor Day, unless otherwise directed by the Engineer. Cape Ann Summer Roadway Work Restrictions: While there are no general restrictions for Cape Ann as there are for Cape Cod and the Islands, project-specific restrictions may be enforced.
- Turtle and/or Fish Migration Periods and/or other in-water work restrictions: Refer to the Project Special Provisions for specific restrictions.
- Working over Waterways Restricted Periods.
- Night-time paving and striping operations, traffic, and temperature restrictions.
- Utility Restrictions shall be as specified within the Contract.

J. FLOAT

For the calculation of float in the CPM schedule, the setting for *Retained Logic* is required for all schedule submissions, starting with the Baseline Schedule Submission. Should the Contractor have a reason to propose that an alternative calculation setting such as *Progress Override* be used, the Contractor shall obtain the Engineer's approval prior to modifying to this setting.

K. COST AND RESOURCE LOADING (Types A and B only)

For all Type A and B Schedules, the Contractor shall provide a cost and resource-loaded schedule with an accurate allocation of the costs and resources necessary to complete the Work. The costs and resources shall be assigned to all schedule activities in order to enable the Contractor to efficiently execute the Contract requirements and the Engineer to validate the original plan, monitor progress, provide cash flow projections, and analyze delays.

1. Each schedule activity shall have an assigned cost that accurately represents the value of the Work. Each schedule activity shall have its resources assigned to it by craft and the anticipated hours to accomplish the work. Each schedule activity's equipment resources shall be assigned to it by equipment type and hours operated. Front-loading or other unbalancing of the cost distribution will not be permitted.
2. The sum of the cost of all schedule activities shall be equal to the Contractor's Bid Price.
3. Indicating the labor hours per individual, per day, by craft and equipment hours/day will be acceptable.
4. The Engineer reserves the right to use the cost-loading as a means to resolve changes, disputes, time entitlement evaluations, increases or decreases in the scope of Work, unit price renegotiations and/or claims.
5. For all Type A and B Schedules, all subnets, fragnets, Proposal Schedules, and Recovery Schedules shall be cost and resource- loaded to help to quickly validate and monitor the duration of the Work to be performed.
6. For Type A Schedules, cost-loading of the schedule will also be used for cash flow projection purposes.
7. The cost-loading of each activity shall indicate the portion of the cost for that activity that is applicable to a specific bid item (cost account.) The total cost for each cost account must equal the bid item price.

SECTION 722 (Continued)**L. NOT TO BE USED IN THE CONTRACTOR'S CPM SCHEDULE**

1. Milestones or constraint dates not specified in the Contract.
2. Scheduled work not required for the accomplishment of a Contract Milestone
3. Use of activity durations, logic ties and/or sequences deemed unreasonable by the Engineer.
4. Delayed starts of follow-on trades.
5. Float suppression techniques.
6. Leads such as leads, lags, SS, SF, & FF relationships without the expressed permission of the Department.

722.62 Submittal Requirements

All schedules shall be prepared and submitted in accordance with the requirements listed below.

Each monthly Contract Progress Schedule submittal shall be uniquely identified.

Each Submission shall, at a minimum, include the following:

- a. Narrative
- b. Schedule submittals shall be signed by the Scheduler
- c. Schedule Printout - All Activities
- d. Schedule Printout - Critical Path Layout
- e. Schedule Printout - Remaining Work
- f. Schedule Printout - Top 3 Float Path
- g. Work Breakdown Structure (WBS) Summary
- h. Project Spending Report (PSR) in Portable Document Format (.PDF)
- i. Project Spending Report (PSR) in Microsoft Excel spreadsheet (.XLS)
- j. Oracle Primavera P6 Schedule File (.XER)

All digital file submittals will be labeled with the following information.

- Contract Number
- Project Number
- Project locations (i.e., town(s))
- Brief description
- Submittal description (i.e., UP07)
- Data Date (MM-DD-YY)
- File Description (i.e., Critical Path)

Example: C110464 (P606309) - Orange Route 2 over 202 – UP23 (07-15-22) - Critical Path

A. Narratives

A written narrative shall be submitted with every schedule submittal. The narrative shall:

1. itemize and describe the flow of work for all activities on the Critical Path in a format that includes any changes made to the schedule since the previous Contract Progress Schedule / Monthly Update or the Baseline Schedule, whichever is most recent.
2. provide a description of any specification requirements that are not being followed. Identify those that are improvements and those that are not considered to be meeting the requirements.

SECTION 722 (Continued)

3. provide all references to any Notice of Delay that has been issued, within the time period of the Contract Progress Schedule Update, by letter to the Engineer. Note that any Notice of Delay that is not issued by letter will not be recognized by the Engineer. See Subsection 722.64.A – Notice of Delay.
4. provide a description of each third-party utility's planned vs. actual progress and note any that are trending late or are late per the durations and commitments as provided in the PUC Form; provide a description of the five (5) most important responses needed from the Department and the need date for the responses in order to maintain the current Schedule of Record.
5. provide a description of all critical issues that are not within the control of the Contractor or the Department (third party) and any impact they had or may have on the Critical Path.
6. provide a description of any possible considerations to improve the probability of completing the project early or on time.
7. compare Early and Late Dates for activities on the Critical Path and describe reasons for changes in the top three (3) most critical paths.
8. describe the Contractor's plan, approach, methodologies, and resources to be employed for completing the various operations and elements of the Work for the top three (3) most critical paths. For update schedules, describe and propose changes to those plans and verify that a Proposal Schedule is not required.
9. describe, in general, the need for shifts that are not 5 days/week, 8 hours/day, the holidays that are inserted into each calendar and a tabulation of each calendar that has been used in the schedule.
10. describe any out-of-sequence logic and provide an explanation of why each out-of-sequence activity does not require a correction, if one has not been provided, and an adequate demonstration that these changes represent the basis of how these activities will be built, including considerations for resources, dependencies, and previously approved production rates.
11. identify any possible duration increases resulting from actual or anticipated unit price item quantity overruns as compared to the baseline duration, with a corresponding suggestion to mitigate any possible delays to the Critical Path. If the delay is anticipated to impact the Critical Path, refer to Subsections 4.06 – Increased or Decreased Contract Quantities and 8.10 – Determination and Extension of Contract Time for Completion and submit a letter to the Engineer notifying of a potential delay.
12. include a schedule log consisting of the name of the schedule, the data date and the date submitted.
13. include and describe any notifications, communications and coordination meetings with third-parties such as utility companies that occurred from the last update including personnel names, job titles and contact information, date of meeting(s)/correspondence(s), topics discussed, and reasons the third party provided for deviations from the PUC form.

SECTION 722 (Continued)**B. CPM Bar Charts**

One (1) timescaled bar chart containing all activities shall be prepared and submitted using a scale that yields readable plots and that meets the requirements of Subsection 722.61 – Schedule Content and Preparation Requirements. Activities shall be linked by logic ties and shown on their Early Dates. Critical Paths shall be highlighted, and Total Float shall be shown for all activities.

A second timescaled bar chart shall also be prepared containing only the Critical Path or, if the Critical Path is not the longest path, the Longest Path using a scale that yields readable plots and that meets the requirements of Subsection 722.61 – Schedule Content and Preparation Requirements. Activities shall be linked by logic ties and shown on their Early Dates. Total Float shall be shown for all activities.

C. Detailed Activity Schedule Comparisons

A Detailed Activity Schedule Comparison (DASC) is a simple reporting tool in the format of a graphical report that will provide Resident Engineers with immediate, timely and up-to-date information. The DASC consists of an updated bar chart that overlays the current time period's bar chart onto the previous time period's bar chart for an easily read comparison of progress during the present and previous reporting periods.

D. Activity Cost Report and Monthly Cash Flow Projections (Type A only)

With each Contractor Quantity Estimate (CQE), the Contractor shall submit an Activity Cost Report and Cash Flow Projection that includes all activities grouped by Contract Bid Item.

The Activity Cost Report shall be generated from the Schedule of Record and shall be the basis of the Monthly Cash Flow Projection. Within each contract Bid Item, activities shall be sequenced by ascending activity identification number and shall show:

1. activity ID and description,
2. forecast start and finish dates for each activity and,
3. when submitted as a revised schedule, actual start, and finish dates for each completed activity.
4. any variance to the estimated contract quantity shall be shown.

E. Resource Graphs (Type A only)

Monthly and cumulative resource graphs for the remaining Contract period using the Early Dates and Late Dates in the Contract Progress Schedule shall be included as part of each schedule submittal.

SECTION 722 (Continued)**F. Projected Spending Reports**

A Projected Spending Report (PSR) shall be prepared and submitted monthly. The PSR shall indicate the monthly spending (cash flow) projection for each month from NTP to Contractor Field Completion (CFC). Each month's actual spending shall be calculated using all CQEs paid during that month. The Projected Spending Report (PSR) shall be depicted in a tabular format and provided in both an .XLS and .PDF.

722.63. Progress Schedule Requirements**A. Baseline Schedule**

The Baseline Schedule shall be due thirty (30) Calendar Days after Notice to Proceed (NTP). The Baseline Schedule shall only reflect the Work awarded to the Contractor and shall not include any additional work involving Extra Work Orders or any other type of alleged delay. The Baseline Schedule shall be prepared and submitted in accordance with Subsections 722.61 - Schedule Content and Preparation Requirements and 722.62 - Submittal Requirements. Once the Baseline Schedule has been accepted by the Engineer, with or without comments, it shall represent the as-planned schedule for the Work and become the Contract Progress Schedule of Record until such time as the schedule is updated or revised under Subsections 722.63.C - Contract Progress Schedules / Monthly Updates, 722.64.C - Recovery Schedules and 722.64.D - Proposal Schedules.

The Cost and Resource-Loading information (Types A and B only) shall be provided by the Contractor within forty-five (45) Calendar Days after NTP.

The Engineer's review comments on the Baseline Schedule and the Contractor's responses to them will be maintained for the duration of the Contract and will be used by the Engineer to monitor the Contractor's work progress by comparing it to the Contract Progress Schedule / Monthly Update.

B. Interim Progress-Only Schedule Submissions

The first monthly update of the Contract Progress Schedule/Monthly Update is due within seventy (70) Calendar Days after Notice to Proceed (NTP.) The Baseline Schedule review period ends at sixty (60) Calendar Days after NTP, see Subsection 722.60.B - Schedule Reviews by the Department. If the Baseline Schedule has not been accepted within sixty (60) Calendar Days after NTP, an Interim Progress-Only Schedule shall be due within seventy (70) Calendar Days after NTP. The purpose of the Interim Progress-Only Schedule is to document the actual progress of all activities, including non-construction activities, from NTP until the Baseline Schedule is accepted.

SECTION 722 (Continued)**C. Contract Progress Schedules / Monthly Updates**

The first Contract Progress Schedule shall be submitted by the Contractor no later than seventy (70) Calendar Days after NTP. The data date for this first Progress Schedule shall be two months (approximately sixty (60) Calendar Days) after NTP. Subsequent Progress Schedules shall be submitted monthly.

Each Contract Progress Schedule shall reflect progress up to the data date. Updated progress shall be limited to asbuilt sequencing and asbuilt dates for completed and in progress activities. Asbuilt data shall include actual start dates, remaining Work Days and actual finish dates for each activity, but shall not change any activity descriptions, the Original Durations, or the Original Resources (as planned at the time of bid), without the acceptance of the Engineer. If any activities have been completed out-of-sequence, the Contractor shall propose new logic ties for affected in-progress and future activities that accurately reflect the previously approved sequencing. Alternatively, the Contractor may submit to the Engineer for approval an explanation of why an out-of-sequence activity does not require a correction and an adequate demonstration that the changes accurately represent how the activities will be built, including considerations for resources, dependencies, and previously approved production rates. Once approved by the Engineer, the Contractor may incorporate the changes in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

No revisions to logic ties, sequence, description, or duration of future activities; or planned resource costs shall be made without prior approval by the Engineer.

Any proposed logic changes for in-progress or future activities shall be submitted to the Engineer for approval before being incorporated into a Contract Progress Schedule. The logic changes must be submitted using a Proposal Schedule or a schedule fragnet submission. Once approved by the Engineer, the Contractor may incorporate the logic in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

For any proposed changes to the original sequence, description or duration of future activities, the Contractor shall submit to the Engineer for approval an explanation of how the proposed description or duration change reflects how the activity will be progressed, including considerations for resources and previously approved production rates. Any description or duration change that does not accurately reflect how the activity will be progressed will not be approved by the Engineer. Once approved by the Engineer, the Contractor may incorporate the changes in the next Contract Progress Schedule/Monthly Update with the affected activities clearly identified and explained in the Schedule Narrative.

Contract Progress Schedules that extend performance beyond the Contract Time or beyond any Contract Milestone shall not be approved by the Engineer. The Contractor shall submit a Recovery Schedule, or a Time Entitlement Analysis, if any Contract Progress Schedule/Monthly Update indicates a failure to meet the Contract Dates.

SECTION 722 (Continued)**D. Short-Term Construction Schedule**

The Contractor shall provide a Short-Term Construction Schedule that details daily work activities, including any multiple shift work that the Contractor intends to conduct, in a spreadsheet format. The daily activities shall directly correspond to the Contract Progress Schedule activities, with a matching reference to the activity identification number in the Contract Progress Schedule and may be at a greater level of detail. The Short-Term Construction Schedule shall be submitted every two weeks. It shall display all work for a thirty-five (35) Calendar Day period consisting of completed work for the two (2) week period prior and all planned work for the following three (3) week period. The initial submission shall be provided no later than thirty (30) Calendar Days after NTP or as required by the Engineer.

The Contractor shall be prepared to discuss the Short-Term Construction Schedule, in detail, with the Engineer in order to coordinate field inspection staff requirements, the schedule of work affecting abutters and any corresponding work with affected utilities. Short-Term Construction Schedules shall be prepared and submitted in accordance with Subsections 722.61 - Schedule Content and Preparation Requirements and 722.62 - Submittal Requirements.

722.64 Impacted Schedule Requirements**A. Notice of Delay**

The Contractor shall notify the Engineer in writing, with copies to the District and State Construction Engineers, within fifteen (15) of the start of any delays to the Critical Path that are caused by actions or inactions that were not within the control of the Contractor. Delay notifications that are not provided in a letter to the Engineer, such as a delay notification in the schedule narrative, will not be recognized as contractual notice in the determination of any Time Extension related to the impacts to the work associated with this specific alleged delay. Should such a delay continue for more than one (1) week, the Contractor shall note it in the Schedule Narrative until the delay is no longer impacting the Critical Path for the completion of the Contract Milestones. The Engineer will evaluate the alleged delay and its impact and will respond to the Contractor within ten (10) Calendar Days after receipt of a notice of delay.

B. Time Entitlement Analysis

A Time Entitlement Analysis (TEA) shall consist of a descriptive narrative, prepared in accordance with Subsection 722.62.A - Narratives, and an as-built CPM schedule, which may be in the form of a schedule fragnet that has been developed from the project's Contract Progress Schedule of Record, and illustrates the impact of a delay to the Critical Path, Contract Milestones and/or Contract Completion Date as required in Subsection 8.10 - Determination and Extension of Contract Time for Completion. TEAs shall also be used to determine the schedule impact of proposed Extra Work Orders (EWO) as also required in Subsection 8.10.

TEAs shall be prepared and submitted in accordance with the requirements of Subsections 722.61 - Schedule Content and Preparation Requirements and 722.62 - Submittal Requirements and shall be based on the Contract Progress Schedule of Record applicable at the start of the delay or impact from an EWO. A TEA fragnet must start with a specific new activity describing the work contained in either a Notice of Delay previously submitted to the Department per Subsection 722.64.A - Notice of Delay or an EWO.

SECTION 722 (Continued)

TEAs shall be submitted:

1. as part of any Extra Work Order that may impact Contract Time,
2. with a request for a Time Extension,
3. within fifteen (15) Calendar Days after a request for a TEA by the Engineer for any other reason.

A TEA shall be submitted to the Engineer before any Time Extension is granted to the Contractor. Time Extensions will not be granted unless the TEA accurately reflects an evaluation of all past delays and the actual events that occurred that impacted the Critical Path. The TEA must also demonstrate a plan for the efficient completion of all of the remaining work through an optimized CPM Schedule. The analysis shall include all delays, including Contractor-caused delays, and shall be subdivided into timeframes and causes of delays.

TEAs shall incorporate any proposed activities, logic ties, resource considerations, and activity costs required to demonstrate the schedule impacts most efficiently in addition to detailing all impacts to existing activities, logic ties, the Critical Path, Contract Milestones, and the Contract Completion Date. In addition, TEAs shall accurately reflect any changes made to activities, logic ties, restraints, and activity costs, necessitated by an Extra Work Order or other schedule impact, for the completion of the remaining work. The Contractor shall provide TEAs that demonstrate that all delays have been mitigated to the fullest extent possible without requiring an Equitable Adjustment to the original bid basis.

All TEAs shall clearly indicate any overtime hours, additional shifts and the resources that are proposed to be incorporated in the schedule. The Engineer shall have final discretion over the use of overtime hours and additional shifts. The Engineer shall have the right to require that overtime hours and/or additional shifts be used to minimize the duration of Time Extensions if it is determined to be in the best interest of the Department to do so.

When accepted, the changes included in a TEA shall be incorporated into the next Contract Progress Schedule per the requirements of Subsection 722.63.C - Contract Progress Schedules / Monthly Updates. During the review of any TEA, all Contract Progress Schedules shall continue to be submitted as required.

The Engineer may request that the Contractor prepare a Proposal Schedule or a Recovery Schedule to further mitigate any delays that are shown in the accepted TEA or Contract Progress Schedule.

C. Recovery Schedules

The Contractor shall promptly report to the Engineer all schedule delays during the prosecution of the Work. Contract Progress Schedules that predict performance extended beyond the Contract Time or beyond any Contract Milestone shall not be approved as the schedule of record. This requirement is critical to the Department's ability to make informed decisions regarding Contract Time and costs.

The Contractor shall submit a Recovery Schedule within fifteen (15) Calendar Days of a Contract Progress Schedule submission that shows failure to meet the Contract Dates unless a recovery schedule is waived by the Department. Waiving the recovery schedule does not relieve the contractor of the responsibility for the delay. The Department may revoke the waiver of a Recovery Schedule, at which time a Recovery Schedule shall be submitted within fifteen (15) Calendar Days of the Contractor being notified.

Changes represented in accepted Recovery Schedules shall be incorporated into the next Contract Progress Schedule.

SECTION 722 (Continued)**D. Proposal Schedules**

A Proposal Schedule is an alternative schedule used to evaluate proposed changes to the Contract scope or significant alternatives to previously approved approaches to complete the Work, which may include changes to activity durations, logic, and sequence. For Types A and B Schedules, the Proposal Schedule shall be cost and resource loaded.

A Proposal Schedule may be requested by the Department at any time or may be offered by the Contractor. The Engineer may request that the Contractor prepare a Proposal Schedule to further mitigate any delays that are shown in an accepted TEA or Contract Progress Schedule.

The Contractor shall submit the Proposal Schedule within thirty (30) Calendar Days of a request from the Department.

The Proposal Schedule shall not be considered a Schedule of Record until the logic, durations, narrative, and basis of the Proposal Schedule have been accepted by the Engineer. If the Proposal Schedule took the form of a fragnet, it must be incorporated into the Contract Progress Schedule of Record showing the current progress of all other activities and the impacts/results of the changes made by the Proposal Schedule before the Proposal Schedule is accepted by the Department.

Proposal Schedules shall clearly indicate any proposed acceleration including overtime hours, additional shifts, and the resources that are proposed to be incorporated in the schedule. The Engineer shall have final discretion over the use of overtime hours and additional shifts. Proposal Schedules that contain a cost element shall be submitted with a separate Cost Proposal.

Changes represented in the accepted Proposal Schedules shall be incorporated into the next Contract Progress Schedule. During the review of any Proposal Schedule, all Contract Progress Schedules shall continue to be required every month.

E. Disputes

All schedules shall be submitted, reviewed, dispositioned, and accepted in the timely manner specified herein so as to provide the greatest possible benefit to the execution of this Contract.

The Contractor may dispute a decision by the Engineer by filing a claim notice within seven (7) days after the Contractor's request for additional time has been denied or if the Contractor does not accept the number of days granted in a time extension. The Contractor's claim notice shall include a revised time entitlement analysis that sufficiently explains the basis of the time-related claim. Failure to submit the required time entitlement analysis with the claim notice shall result in denial of the Contractor's claim. A determination on the Contractor's claim shall be in accordance with Subsection 7.16 Claims of Contractor for Compensation. Pending resolution of any dispute, the last schedule accepted by the Engineer will remain the Contract Schedule of Record.

SECTION 722 (Continued)**722.65 Schedule Type D Requirements**

This section is to detail the requirements for Type D Schedules and is separate from the requirements listed above. These schedules are intended for a project in which a more formal schedule would not be practical.

Schedules for Type D projects shall be submitted for each work assignment. The Schedule Type D shall be submitted electronically in .XLS and .PDF format and meet the following requirements.

The schedule requirements for work assignments that are anticipated to last three weeks or less shall conform to the requirements for Short-term Construction Schedules below.

Work assignments that are anticipated to last longer than three weeks shall submit a bar chart baseline and provided update schedules upon request of the engineer as required under Bar Chart Schedule below in addition to meeting the Short-term Construction schedule requirements.

A. Bar Chart Schedule

A Bar Chart that shall include the following:

- Work Assignment start date.
- Activities to identify.
 - Major work operations broken down to be no longer than 14 days.
 - Procurement of fabricated materials and equipment with long lead times, including time for review and approval of submittals required before procuring and fabricating.
 - The preparation and submission of shop drawings, procedures, and other required submittals, with a planned duration that is to be demonstrated to the Engineer as reasonable.
 - The review and return of shop drawings, procedures, and other required submittals, approved or with comments, the duration of which shall be shown as thirty (30) Calendar Days,
 - Detailed activities to satisfy permit requirements.
 - Subcontractor approvals at fifteen (15) Calendar Days from submittal to response
 - Project Close out activities including a 21-calendar day creation of a punchlist activity and 30 calendar day minimum completion of punchlist activity.
- Interfaces with adjacent work, utility companies, other public agencies, sensitive abutters, and/or any other third-party work affecting the Contract.
- Access Restraints – restrictions on access to areas of the Work
- Traffic work zone set-up and removal, night work and phasing
- Contract Milestones including Full beneficial Use, Substantial Completion and Contractor Field Completion

The Bar Char Schedule shall be provided at the beginning of the project and updated with each work order created for the project.

SECTION 722 (Continued)**B. Short-Term Construction Schedule**

The Contractor shall provide a Short-Term Construction Schedule that details daily work activities, including any multiple shift work that the Contractor intends to conduct, in a spreadsheet format. The daily activities shall directly correspond to the Contract Progress Schedule activities, with a matching reference to the activity identification number in the Contract Progress Schedule and may be at a greater level of detail. See schedule toolkit for suggested format.

The Short-Term Construction Schedule shall be submitted every two weeks. It shall display all work for a thirty-five (35) Calendar Day period consisting of completed work on the assignment for the two week period prior and all planned work for the following three week period. The initial submission shall be provided no later than thirty (30) Calendar Days after NTP or as required by the Engineer.

The Contractor shall be prepared to discuss the Short-Term Construction Schedule, in detail, with the Engineer in order to coordinate field inspection staff requirements, the schedule of work affecting abutters and any corresponding work with affected utilities.

C. Project Spending Report (PSR)

A Projected Spending Report (PSR) shall be prepared and submitted monthly. The PSR shall be for all active work assignments, broken down by work assignment. The PSR shall indicate the monthly spending (cash flow) projection for each month from NTP to Contractor Field Completion (CFC). Each month's actual spending shall be calculated using all CQEs paid during that month. The Projected Spending Report (PSR) shall be depicted in a tabular format and provided in both an .XLS and .PDF

SECTION 722 (Continued)**COMPENSATION****722.80 Method of Measurement****Schedule of Operations (Type A, B and C)**

The project bid documents specify the fixed-price amounts to be paid to the Contractor for the Project Schedule requirements contained herein. Each bidder shall include this fixed price bid item amounts in their bid. Failure to do so may be grounds for the rejection of the bid.

This fixed price amount is for payment purposes only and is separate from what the Department considers to be the Contractor's General Condition costs. If the Contractor deems it necessary to include additional costs to provide all of the requirements of this section, these additional costs shall be included in the Contractor's overall bid price.

All required schedule-related work, including, but not limited to computers, computer software, the planning and coordination with utilities, training, schedule preparation and schedule submittals will be paid for under the fixed price amount.

Twenty percent (20%) of this pay item will be paid upon the Engineer's acceptance of the Contractor's Baseline Schedule, prepared and submitted in accordance with Subsection 722.63.A.

The remaining eighty percent (80%) of this pay item will be paid in equal monthly installments distributed across the Contract Duration from Notice to Proceed (NTP) to Contractor Field Completion (CFC), less the 2 months required for the submittal and review of the Baseline Schedule in accordance with the following formula:

$$\text{Monthly Payment} = \frac{\text{Remaining Fixed Price amount (80\% of the Item Cost.)}}{\text{Contract Duration in whole months} - 2 \text{ months}}$$

The Schedule of Operations pay item will be adjusted to pay for only the actual quantity of schedules that have been submitted in accordance with this section.

Should there be a Time Extension granted to the Contractor, the Engineer may provide an Equitable Adjustment for additional Contract Progress Schedule Updates at intervals directed by the Engineer. The monthly payment will be the basis for this Equitable Adjustment.

Schedule of Operations (Type D)

For projects assigned with Type D schedule requirements, all scheduling work shall be considered incidental to the project with no separate payment under this section.

SECTION 722 (Continued)**722.81 Basis of Payment**

The timely and accurate submission of the Baseline Schedule is critical to the Contract and the Department's ability to make informed decisions. Only payments under Item 740 - Engineer's Field Office and Item 748 - Mobilization will be made until the Baseline Schedule is accepted by the Engineer.

All required schedule-related work, including, but not limited to computers, computer software, the planning and coordination with utilities, training, schedule preparation and schedule submittals (including monthly progress schedules, short-term schedules, project spending reports, TEAs, recovery schedules or impacted schedules) shall be included in this work.

No payment for any other pay item will be processed beyond seventy-five (75) Calendar Days from Notice to Proceed (NTP) until the Baseline Schedule is accepted by the Engineer. Until the Engineer's acceptance of the Baseline Schedule, the combined total of all payments made to the Contractor will be limited to an amount no greater than the total price for Item 748 - Mobilization or 3% of the contract price, whichever is less.

All Contract Progress Schedule Updates submitted later than ten (10) Calendar Days after the CQE (Contract Quantity Estimate) completion date, or greater than forty (40) Calendar Days from the Data Date of the previous submission, will be deemed to be no longer useful and will not qualify for payment. The late submission of Impacted schedules, including TEAs, recovery schedules and proposal schedules will result in the forfeiture of the monthly payment for the month in which they were due and subsequent months until the submission is made. Late submission of missed submittals will not result in recovery of the previously forfeited portion of the Schedule of Operations Fixed Price Payment Item.

Failure to submit schedules as and when required may result in the forfeiture of that portion of the Schedule of Operations Fixed Price Payment and/or the withholding of the full or partial CQE payments by the Engineer.

Failure to submit schedules that are acceptable to the Engineer may result in the forfeiture of that portion of the Schedule of Operations Fixed Price Payment and/or the withholding of the full or partial CQE payments by the Engineer.

The Schedule of Operations pay item will be adjusted to pay for only the actual quantity of schedules that have been submitted in accordance with this section.

The Contractor's failure or refusal to comply with the requirements of this Section shall be reasonable evidence that the Contractor is not prosecuting the Work with due diligence and may result in the Engineer withholding of full or partial payments of all work performed.

722.82 Payment Items

722.1	SCHEDULE OF OPERATIONS (TYPE A) - FIXED PRICE \$ _____	LUMP SUM
722.2	SCHEDULE OF OPERATIONS (TYPE B) - FIXED PRICE \$ _____	LUMP SUM
722.3	SCHEDULE OF OPERATIONS (TYPE C) - FIXED PRICE \$ _____	LUMP SUM

SCHEDULE OF OPERATIONS - SCHEDULE TYPE

The applicable schedule type for this project is Type D.

ITEM 100.1**BASE LABOR RATE****HOURLY**

The Contractor shall provide competent artisans, possessing all pertinent licenses and/or certifications, as required by the Engineer, to maintain and repair various components of the bridges. As described more fully below, included in this Item will be a tool kit for each trade with incidental tools, special apparel and any required personal safety equipment, and a vehicle for each trade with no additional charge to the Department. The Contractor shall submit to the Engineer all pertinent licenses and/or certifications for each artisan prior to the commencement of any work. Failure to provide the pertinent licenses and/or certifications could result in the artisan being compensated at the laborer rate regardless of how the Contractor so compensated him/her.

The payment under this Item will be for the time spent by the artisan and the artisan's toolkit only.

Payment will be based upon time spent on the project doing actual work assigned by the Engineer and shall NOT include travel time to and from the Contractor's place of business and it shall also not include time for investigative field trips.

Payment for equipment (other than the usual artisan toolbox) will be made under payment for equipment rental as stated elsewhere in these special provisions.

This Item shall only be used to compensate the Contractor for the time that their in-house workforce spends on work orders assigned by the Engineer.

Incidental to this item, vehicles are to be supplied for each artisan. If more than one artisan of a certain type (for example, carpenter) are working at a work site, the Contractor need only supply the minimum vehicles required to transport the artisans, their equipment, laborers, materials, and supplies. The artisan vehicle(s) shall be capable of transporting materials consistent with the trade. It is the intent under this item for material deliveries to be reimbursable only for bulk items or materials of sufficient quantity as determined by the Engineer. The Contractor shall make his bid with the understanding that ownership and operating costs do not apply and are not reimbursable for the vehicles utilized under the artisan items.

Described below, and included in this item, will be a tool kit for each trade with all incidental tools, special apparel, and any required personal safety equipment and a vehicle for each trade with no additional charge to the Department.

All tools and equipment in artisan tool kit shall be in excellent working condition.

If a separate tool truck is utilized, such vehicle shall also be considered incidental to this item.

Any Additional vehicles the Engineer deems necessary will be paid for under the rental equipment item. If it is the Contractor's policy for the artisan to use their personal vehicles for the above purposes, no additional vehicles are required.

ITEM 100.1 (Continued)

Artisans and toolboxes are described below:

Laborer

Small hand tools, hand held power tools, chipping hammer, eye shields, gloves, protective clothing, generators as necessary to run the equipment and equipment that is normally used in the trade.

Carpenter

Hammer, framing square, tape measure, pouch, levels, hand saws, power saws, all electric power tools, air tools and generators and compressors as necessary to run the equipment. Saw blades and drill bits are also included.

Cement Mason

All trowels, floats, Chipping Hammers, Wire Brushes, Trowels, Floats, Reinforcing Tie Wires, Mortar Boards, Jointing Tools and Buckets, mortar board and mixing tub/buckets, and other hand tools as necessary to complete masonry patching work.

Electrician

Wire cutters, wire strippers, pliers, screwdrivers, utility knives, hex keys, crimping tools, fish lines, multimeters, clamp on ammeters, AC ammeter, DC megger, flashlights, gloves, protective clothing, allen wrenches, files, scrapers, electric power tools and generators necessary to run the equipment and other equipment that is normally used in the trade.

Ironworker / Welder

Spud wrench, dowels, alignment pins, tape measure, pouch, levels, eye shields, gloves, protective clothing, rivet buster, air hammer, jackhammer, reamers, chipping hammer, wire brushes AC/DC-300 amp- 100% duty cycle (minimum size) welding machine, torches for cutting, burning, or preheating steel, including fuel tanks & fuel / oxygen, grinders, heating oven for all welding consumables and other equipment that is normally used in the trade.

Painter/Deleader

Hand scrapers, wire brushes, paint spray apparatus, needle guns, wire wheels, gloves, protective clothing and all electrical power tools, air tools and generators with compressors as necessary to run the equipment.

Lead disposal costs will be paid for under the Non-Bid Items.

Materials required for the containment will be paid for under non-bid materials allotment.

ITEM 100.1 (Continued)**Equipment Operator**

Operator shall have all licenses and certifications required by the Commonwealth of Massachusetts for the equipment they will be operating. Operators shall be in possession of their licenses at all times and show it to the Engineer when requested. Typical equipment includes a backhoe, skid-steer loader, and front-end loader.

Equipment which does not require a special license or certification for its operation shall be considered incidental to the artisan using it.

METHOD OF MEASUREMENT

Item 100.1 will be measured for payment by the Hour.

The Engineer will calculate total Base Labor Rate hours spent on the project by artisans.

Overtime hours will be paid for work exceeding eight (8) consecutive hours per day or forty (40) hours per week and shall be compensated as specified in this Item.

To calculate the total Base Labor Rate hours, the Engineer will modify hours spent by various artisans on the project using adjustment factor(s) described below:

<u>COMPENSATION FACTORS</u>		
<u>ARTISAN</u>	<u>REGULAR</u>	<u>OVERTIME</u>
LABORER	1.00	1.30
CARPENTER	1.15	1.50
CEMENT MASON	1.26	1.64
ELECTRICIAN	1.18	1.53
IRON WORKER / WELDER	1.34	1.74
PAINTER/DELEADER	1.35	1.75
EQUIPMENT OPERATOR	1.31	1.70

If an artisan has an apprentice, then that apprentice's compensation factor shall be determined from the State Wages Apprentice level.

The Compensation Factors above will be used to adjust the number of hours a specific artisan will be paid for, per one (1) hour of work.

ITEM 100.1 (Continued)**Example:**

If the time spent on this project by various artisans is:

Laborer	8 hrs
Carpenter	4 hrs
Cement Mason	6 hrs

then the total hours for “Base Labor Rate” will be calculated as follows:

“Artisan A(hrs)” x “Compensation Factor A” +
“Artisan B(hrs)” x “Compensation Factor B” +
“Artisan C(hrs)” x “Compensation Factor C”

$8(\text{hr}) \times 1.00 + 4(\text{hr}) \times 1.15 + 6(\text{hr}) \times 1.26 =$
 $8.00(\text{hr}) + 4.60(\text{hr}) + 7.56(\text{hr}) =$
20.16 (billable hours)

BASIS OF PAYMENT

Item 100.1, Base Labor Rate, will be paid for at the Contract unit price per Hour, which price shall include all equipment (usual artisan tool kit), tools required to perform the normal artisans work. all clothing or safety equipment normally associated with the artisans work.

Any transportation required for an artisan and their toolbox to travel to and from a job site will be incidental to this Item. Ownership and operating costs, fuel and maintenance are not reimbursable for the vehicles and tools utilized under the artisan items.

SPECIAL NOTES REGARDING PREVAILING WAGE REQUIREMENTS

Item 100.1, Base Labor Rate establishes a unit price for the Department’s compensation to the Contractor for furnishing competent artisans to maintain and repair various components of the bridges. Nothing herein should be construed as establishing, altering or otherwise affecting the prevailing wages rates applicable to the work performed or relieving the Contractor of its obligations to ensure that workers are paid in accordance with applicable labor and wage laws.

Note that the erection and dismantling of scaffolding, rigging and containment for bridge painting work is subject to the “Painter(Bridges/Tanks)” prevailing wage rate. This includes surface preparation, including removal of all types of paint on bridges, the application of paint and the clean-up of debris resulting from paint removal operation on bridges, pursuant to the determination by the Massachusetts Department of Labor Standards’ 12/23/2009 “Notice Concerning the Removal and Application of Paint on Bridges and Tanks.”

ITEM 106.88**JACKING AND SHORING****EACH**

The work under this item consists of jacking and supporting existing beams/girders, pier caps and columns as required by work order or the Engineer.

Shoring materials may be new or second hand. The Contractor shall submit a plan of the proposed work showing the details and indicating the materials to be used. The submittal shall include the jacking load calculations and shoring design computations based on the bridge configurations and the working stresses of the materials used, sequence of operations, and all details incidental thereto. Unless otherwise directed by the Engineer, the proposed jacking and shoring system shall be designed to apply force in increments to the existing beam/girder to relieve load from the existing substructure. The jack(s) shall have a locking mechanism preventing the beam/girder from lowering in the event of loss of hydraulic pressure. All components of the system shall have load capacity greater than the total calculated load carried by the existing beam/girder during normal traffic operation, which includes but is not limited to dead load, live load, and impact load.

Bridge Loads: The Contractor shall be responsible for calculating loads (live and impact loads, dead loads...etc.) necessary to design shoring paid under this Item. Soil bearing values shall be determined per section 2.5.2 of the AASHTO Guide Design Specifications for Bridge Temporary Works. All materials (except jacks) shall be designed by working stress design (ASD). Type of jacks used and factor of safety shall be per industry standards.

Approval of this submission shall be obtained prior to the commencement of any work under this item. The above plan and computations shall bear the seal and signature of a Professional Engineer of the appropriate discipline registered in Massachusetts.

Materials shall meet the following:

Anchor Bolts, Nuts and Washers:	M8.01.5
Structural Steel:	M8.05.0
Wood Products:	M9.05.1

All treated wood supplied by the Contractor shall meet the requirements of M9.05.1 for Wood Products, including the most recent versions of AWPA U1 and M4, which are incorporated by reference. No new wood shall be treated with inorganic arsenic (including chromated copper arsenate (CCA), ammoniacal copper arsenate (ACA), and ammoniacal copper zinc arsenate (ACZA)), creosote or pentachlorophenol in all project construction.

The Contractor is alerted that some of the beams/girders may have been temporarily shored by MassDOT personnel or by others. At such locations, the Contractor shall install a jacking support system before removing any temporary supports. The cost of removing and stacking, or the disposal of the temporary supports at an on-site location, as directed by the Engineer, shall be considered incidental work hereunder with no additional compensation.

Maintenance of previously installed shoring is incidental to this item until repairs are completed.

ITEM 106.88 (Continued)

When required by the Engineer extensive repairs require temporarily supporting some of the beams/girders on one or both sides of a pier cap(s), or abutment(s) those beams/girders shall be jacked/shored all at once as one unit for the length of time required.

The work shall be performed as follows:

Erect supports under each beam/girder as required by the Engineer. When possible, all supports shall be located 4'-0" from the centerline of each corresponding pier or centerline of bearing at each corresponding abutment. The cribbing for the support footings shall be of a sufficient size to prevent any settlement or damage to the footings while the superstructure is being adequately supported as required by the Engineer.

In the event of any damage to the structure due to the Contractor's operations, the Contractor shall repair or replace any such damaged components, at no cost to the department.

The support of beams/girders shall remain in place until all the requirements of Item 127.12 - Reinforced Concrete Substructure Excavation and Item 905 - 4000 PSI, 3/8 INCH, 660 HP Cement Concrete repair is completed and accepted by the Engineer.

When the repairs are completed and the supports are no longer needed as determined by the Engineer, all supporting materials shall be removed and become the property of the Contractor unless other prior arrangements were previously made with MassDOT.

Each bridge will be kept open to traffic while the beams/girders or pier caps/columns are supported. The expressways and some other roads are heavily traveled high-speed roads with high volumes of truck traffic.

Some of the bridges in District 3 are over water and may require a shoring plan that is beyond typical. In those cases, any equipment required and approved by the engineer prior to use that is needed to place the shoring or any additional time needed during set-up or attachment of shoring will be compensated under the non-bid items.

Additional costs associated with designing and placing shoring in water will be allowed under the appropriate non-bid Items, as required by the Engineer.

METHOD OF MEASUREMENT

Item 106.88, Jacking and Shoring will be measured for payment by the Each steel or concrete beam/girder end jacked and shored as required by the Engineer. Multiple jacking of the same end for the same repair will not be measured separately.

ITEM 106.88 (Continued)**BASIS OF PAYMENT**

Items 106.88, Jacking and Shoring will be paid for at the Contract unit price per Each, which price shall include all labor, materials, tools, equipment, engineering services and all incidental costs required to complete the work.

Placement of shoring that is required to support a pier cap during the repair of a pier column will also be compensated under this Item.

ITEM 106.881 JACKING AND SHORING REMOVED AND RESET EACH

When an assigned work location requires more than one shoring tower and one or more of those towers can be reset at a subsequent repair within the same work location after the initial repair has been completed, those tower(s) shall be removed and reset to the new location as directed by the Engineer. It is not intended for this item to be used when shoring towers are to be transported to a different work location. Bridges adjacent to each other will not be considered as different work locations.

METHOD OF MEASUREMENT

Item 106.881 will be measured for payment by the Each, jacking and shoring removed and reset.

BASIS OF PAYMENT

Item 106.881 will be paid for at the Contract unit price per Each, which price shall include all labor, materials, tools, equipment, and incidentals necessary to disassemble the shoring unit, prepare the bedding on which the tower will be reset, re-assemble the shoring unit and place jack or shims as necessary, and all incidental costs required to complete the work.

<u>ITEM 127.12</u>	<u>REINFORCED CONCRETE SUBSTRUCTURE</u>	<u>CUBIC YARD</u>
	<u>EXCAVATION</u>	

The work under this Item shall conform to the relevant Provisions of Subsections 120 and 482 of the Standard Specifications and the following:

The work under this Item consists of the removal and disposal of all deteriorated, spalled, and scaled concrete as required to repair the existing concrete substructure elements to the general lines identified on the drawings and as required by the Engineer. Any concrete excavation necessary to access concrete substructure elements for repair shall be paid for under this Item.

The Contractor shall take all measures necessary to protect pedestrian and vehicular traffic from the construction operations. No debris, tools or incidental equipment of any kind will be permitted to fall into river bed or river bank areas or where vehicular or pedestrian traffic exists. Any material that accidentally falls into such areas shall be removed. All costs associated with protection measures shall be considered incidental to the item.

During the prosecution of the Work, the Engineer may reject the use of any method or equipment which causes undue vibration or possible damage to the structure or any part thereof. Pneumatic hammers heavier than the nominal 25 pounds mass shall not be used unless approved by the Engineer.

Minimum depth of excavation to sound concrete shall be one inch (1") beyond the inner most layer of reinforcing steel, but not less than four inches (4") from the original surface. The Contractor shall stop excavating deteriorated concrete when the depth of excavation reaches six inches (6") and shall notify the Engineer immediately. The edges of the patch shall be cut to neat lines by saw cutting or by methods approved by the Engineer, and the patch areas shall be made rectangular in shape, if possible, with horizontal and vertical edges and avoid over cutting square corners.

The Contractor shall limit extent of excavation of the pier caps and columns as shown on the repair sequence contract drawings. If the Contractor exceeds the limits of excavation as shown on the repair sequence contract drawings, then temporary shoring shall be installed to alleviate loading on the substructure, at no additional cost to the Department. The Contractor may submit an alternate method of reinforced concrete excavation to be approved by the Engineer. The alternate method, if approved by the Engineer, shall not incur any additional costs to the Department, and Item 127.12 Reinforced Concrete Substructure Excavation will be paid at the contract unit price regardless of the method used to complete the work.

The Contractor shall take all precautions necessary so as not to damage those portions of the bridge including reinforcing steel that are to remain. This includes determining the concrete cover to the steel bars at the edge of each patch prior to excavating concrete. Any steel that is unsuitable for further use through no fault of the Contractor shall be replaced under Item 910.1 Steel Reinforcement for Structures – Epoxy Coated. All reinforcing steel that is loose shall be tied tightly together using epoxy coated wire ties.

Also, included under this Item are all costs in connection with the cleaning, cutting, and bending of the existing reinforcing steel designated to be retained in the proposed repair.

ITEM 127.12 (Continued)

METHOD OF MEASUREMENT

Item 127.12 will be measured for payment by the Cubic Yard of substructure concrete excavated, removed, and properly disposed of.

BASIS OF PAYMENT

Item 127.12 will be paid for at the Contract price per Cubic Yard , which price shall include all labor, tools, equipment, materials, sawcutting, cleaning, disposal of all debris and incidental costs required to complete the work.

New reinforcing steel will be paid under Item 910.1

ITEM 748.1**EMERGENCY RESPONSE****EACH**

The work under this Item shall conform to the relevant provisions of Subsection 748 of the Standard Specifications and the following:

Item 748.1 is intended to be used as a means of providing payment to the Contractor for purposes of mobilizing those forces and equipment necessary for the timely response to an emergency and to begin work as directed.

This Item shall consist of preparatory work and operations for emergency response after notification from the Engineer. It shall include preparations necessary for the movement of personnel, equipment, and incidentals to the project site for the establishment of an effective response under the work assignment.

Note: The Contractor is required to commence emergency work within (4) four hours of notification.

METHOD OF MEASUREMENT

Item 748.1 will be measured for payment by the Each notified emergency Work Order when the Contractor commences work within (4) four hours of notification.

In the event that another emergency occurs during the period that the Contractor's forces have been notified and are mobilizing or working, all additional responses performed by a different emergency response crew at a different work site during that period will be considered an additional emergency response in accordance to the requirements specified herein.

The engineer will determine if conditions required another crew to be mobilized as a separate emergency response.

The Emergency Response item is not applicable if the emergency occurs during scheduled working hours.

BASIS OF PAYMENT

Item 748.1 will be paid for at the Contract unit price per Each, which price shall be full compensation for all costs associated with ensuring prompt response to emergency situations and to get equipment to an emergency location in time.

In the event that the Contractor does not satisfy the (4) four hours response time, payment for Emergency Response will be made only at the discretion of the Engineer.

Non-response damages will be assessed in the amount specified under NON-RESPONSE DAMAGES for each assignment the Contractor fails to report as required.

All labor, material and equipment to perform the emergency work will be paid for under the appropriate pay items.

ITEM 853.8**TEMPORARY ILLUMINATION FOR WORK ZONE****DAY**

The work under this Item shall conform to the relevant provisions of Subsection 850 of the Standard Specifications and the following:

The work under this Item shall include furnishing, deploying and maintaining in proper operating condition a LED balloon diffuser lighting system. These portable light towers shall be used throughout the project area for temporary work zone lighting. The use of unshielded high wattage flood lights shall not be permitted.

The Contractor shall illuminate the following work zone areas:

- Change in direction (i.e., work zone entrances and exits, crossovers, etc.)
- Tapered areas
- Actual area where the construction is being performed

Light measurement shall be based on the illuminance method and the lighting levels shall be based on the classification of construction activity that is taking place. At no time shall the light level be below 5 fc and the uniformity shall not exceed 6:1. Task Classifications and recommended illumination levels are shown in Table 1.

Task Classifications	Illumination Level	Average Minimum Maintained Illuminance
All work operations areas, setup of lane or road closures, lane closure tapers, and flagging stations such as Excavation (all types), Embankment Fill and Compaction, Reworking Shoulders, Asphalt Pavement Rolling, Subgrade, Stabilization and Construction, Base Course Rolling, Sweeping, Cleaning and Landscaping.	Level I	5 foot-candles
Areas on or around construction equipment; asphalt paving, milling, and concrete placement and/or removal such as Milling, Removal of Pavement, Asphalt Paving and Resurfacing, Concrete Pavement, Waterproofing and Sealing, Sidewalk Construction, Base Course Grading and Shaping, Surface Treatment, Bridge Decks, Drainage Structures and Drainage Piping, Other Concrete Structures, Barrier Wall and Traffic Separators, Guardrails and Fencing, Striping and Pavement Markings, Repair of Concrete Pavement, Highway Signs, Hole Filling and Repair of Guardrails and Fencing.	Level II	10 foot-candles
Pavement or structural crack/ pothole filling; joint repair, pavement patching and/or repairs, installation of signal/electrical/mechanical equipment such as Traffic Signals, Highway Lighting Systems and Crack Filling	Level III	20 foot-candles

TABLE 1
TASK CLASSIFICATIONS AND ILLUMINATION LEVELS

ITEM 853.8 (Continued)

Prior to commencement of work the Contractor shall submit to MassDOT for approval a description of illumination equipment that is proposed to be used on this project, and shall include photometrics that detail the light levels that are to be provided for the particular operation for the type of equipment, level of luminance, and height to be installed.

Any potential glare from the lighting system should be considered from each direction and on all approaching roadways and opposing lanes of traffic. Glare from the illumination system should be minimized as much as possible for both workers and motorists in adjacent active travel lanes. If required, the Contractor shall provide supplemental hardware such as visors, louvers, shields, glare screen and barrier, to reduce glare in adjacent active travel lanes.

Equipment mounted lighting may be used to supplement light towers to achieve the required lighting levels for the activity involved per Table 1.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 853.8 will be measured and paid per Subsections 850.80 and 850.81, respectively.

ITEM 854.6**TEMPORARY PORTABLE RUMBLE STRIP****DAY**

Work under this item consists of furnishing, deploying, maintaining in proper operating conditions, and removing temporary portable rumble strips (TPRS) for temporary lane closures of 24 hours or less.

MATERIALS

The TPRS shall be 10' to 11' wide, measured perpendicular to the path of travel, 12" to 16" long, measured parallel to the path of travel, and 0.5" to 0.75" tall. All edges shall be beveled. The surfaces shall be grooved to limit potential hydroplaning.

The TPRS shall lay flat on the road surface without the use of nails, anchors, or adhesives, and shall be flexible so as to conform to the surface profile.

The TPRS shall be able to withstand vehicle weights of up to 80,000 lbs. and operate in temperatures between 0° to 120° F.

The manufacturer shall certify the TPRS to be safe for use on roads with speed limits of at least 70 mph.

TPRS that appear damaged or functioning in an unsafe manner may be order removed by the Engineer and replaced at no additional cost.

CONSTRUCTION METHODS

The TPRS shall be installed per the plans or at the discretion of the Engineer.

The Contractor shall conform to the manufacturer's specifications for installation and the following:

- A. The road surface shall be cleared of all gravel, sand, and debris.
- B. If RoadQuake 2™ model is used, the modular pieces shall be assembled into 11-foot strips per the manufacturer's instructions in advance of deployment. The interconnected segments shall form a smooth and flat, continuous section.
- C. A Truck-Mounted Attenuator, conforming to Section 850, shall be used as shadow vehicle protection during the deployment and removal of TPRS on any roadway with speeds of 45 mph or greater.
- D. TPRS shall be deployed in conjunction with all other temporary traffic control devices. MA-W28-1 (Rumble Strips Ahead) sign(s) shall be installed per the Temporary Traffic Control Plan.

ITEM 854.6 (Continued)

E. TPRS deployment:

1. TPRS shall be placed perpendicular to the direction of travel, centered in the lane.
2. Three (3) individual strips are required for a single array.
3. Refer to the Temporary Traffic Control Plan for the location of the array respective to the lane closure.
4. The spacing of the individual strips within the array shall conform to the following table:

Speed Limit	Distance Between Rumble Strips (measured center-to-center)
>55 mph	20 feet
40 mph to 55 mph	15 feet
<40 mph	10 feet

5. The TPRS shall be placed without the use of nails, adhesives, or other methods of affixing them to the road surface.
- F. All TPRS shall be maintained in proper condition, alignment, spacing, and location throughout the duration of the lane closure, at no additional cost.
- G. The TPRS shall be removed prior to the removal of the traffic control devices used to close the travel lane.
- H. TPRS shall not be used during snow events.

METHOD OF MEASUREMENT

An array of three (3) temporary portable rumble strips 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 the array is deployed, repositioned, or removed.

BASIS OF PAYMENT

Temporary Portable Rumble Strips will be paid for at the contract unit price per day, which shall include full compensation for furnishing, deploying, repositioning, and removing the array of three (3) individual strips as directed by the Engineer.

ITEM 859.1 **REFLECTORIZED DRUMS WITH SEQUENTIAL** **DAY**
FLASHING WARNING LIGHTS

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 LWCSO.
2. pi-Lit® Sequential Barricade-Style Lamp; or
3. Unipart Dorman SynchronGUIDE.

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.

ITEM 905. **4000 PSI, 3/8 INCH, 660 CEMENT CONCRETE** **CUBIC YARD**

The work under this Item shall conform to the relevant provisions of Subsection 901 of the Standard Specifications and the following:

The work under this item shall consist of installing required forms and placing 4000 PSI, 3/8 inch, 660 Cement Concrete. This item shall be used for patching after all deteriorated and/or unsound concrete is removed under 127.12.

The Contractor's attention is directed towards the Repair Notes as noted in Document A00803. All formwork shall be approved by the Engineer prior to concrete placement.

All concrete surfaces shall be prepared in accordance with PREPARATION OF CONCRETE SURFACES.

Protective sealing compounds shall be applied to repair areas where required by the Engineer. Protective sealing compounds shall be in accordance with Subsection 901.41.

METHOD OF MEASUREMENT

Item 905. will be measured for payment by Cubic Yard of cement concrete furnished and placed, complete in place.

BASIS OF PAYMENT

Item 905. will be paid for at the Contract unit price per Cubic Yard, which price shall include all labor, materials, equipment, surface preparation, protective sealing, and all incidental costs required to complete the work.

No separate payment will be made for the installation of subsequent removal of any formwork, coating/patching of the steel reinforcing, but all costs in connection therewith shall be included in the Contract unit price bid.

Where formwork is installed for concrete placement, payment of seventy percent (70%) of the Cubic Yard price of this item will be made upon complete concrete placement. The remaining thirty percent (30%) of the Cubic Yard Price of this Item will be paid only after the complete formwork removal by the Contractor.

ITEM 909.2 **CEMENTITIOUS MORTAR FOR PATCHING** **SQUARE FOOT**

The work under this Item shall conform to the relevant provisions of Subsection 901 of the Standard Specifications and the following:

The work under this Item consists of patching vertical surfaces on the existing structures at areas of spalled, delaminated, or cracked concrete as directed by the Engineer.

This Item does not include the repair of any vertical patch that exceeds two (2) inches in depth. The repairs to those patches shall be made using Item 905.

MATERIALS

Concrete and High Strength Mortar Products shall be in accordance with M4.04.1.

CONSTRUCTION METHODS

The contractor shall remove all deteriorated and spalled areas as designated by the Engineer. All costs to remove the deteriorated and spalled concrete shall be compensated for under Item 127.12. The Contractor shall have the approval of the Engineer certifying that all spalled and deteriorated concrete has been removed prior to patching deteriorated areas.

All concrete surfaces shall be prepared in accordance with PREPARATION OF CONCRETE SURFACES.

Mortar must be worked into the substrate filling all pores and voids. Force the material against the edge of the repair, working towards the center. After filling, consolidate, then screed.

The maximum thickness of application in one pass shall be one (1) inch. If the depth of patch exceeds one (1) inch, the mortar shall be placed in two passes of approximate equal thickness, with a total thickness not to exceed two (2) inches. Before the first pass has achieved an initial set, the surface shall be prepared for the second pass by scratching with a trowel to form a grid of deformation on the surface. The preceding lift shall be allowed to reach final set before applying fresh material. The fresh mortar must be scrubbed into the preceding lift.

Prime and work the mix into the substrate, filling all pores and voids. Avoid puddling of the primer on horizontal substrates.

Use a fine mist spray of water, wet burlap, or a non-solvent approved curing compound if ambient conditions might cause premature surface drying (high temperature, low humidity, strong winds, etc.). If necessary, protect the newly applied mortar from rain. To prevent freezing, cover with insulating material.

Protective sealing compounds shall be applied to repair areas where required by the Engineer. Protective sealing compounds shall be in accordance with Subsection 901.41.

ITEM 909.2 (Continued)

METHOD OF MEASUREMENT

Item 909.2 will be measured for payment by the Square Foot of patch area, complete in place.

BASIS OF PAYMENT

Item 909.2 will be paid for at the Contract unit price per Square Foot, which price shall include all labor, materials, equipment, certification, samples, curing, protective sealing, and all incidental costs required to complete the work.

ITEM 910.1 **STEEL REINFORCEMENT FOR STRUCTURES -** **POUND**
EPOXY COATED

The work under this Item shall conform to the relevant Provisions of Subsection 901 of the Standard Specifications and the following:

All requirements of Subsection 901.35 Reinforcement shall be adhered to, including but not limited to lapping at splices and ties at every other intersection.

The Contractor may be required to submit for approval, detail plans and schedule of bar reinforcement. The Contractor will replace reinforcing bars as directed by the Engineer. Any reinforcing steel damaged by the Contractor's operations will be replaced by the Contractor at their own expense.

The Contractor may be required to use standard non-epoxy coated (black bar) instead of epoxy coated bar as directed by the Engineer.

METHOD OF MEASUREMENT

Item 910.1 will be measured for payment per Subsection 901.80.

BASIS OF PAYMENT

Item 910.1 will be paid per Subsection 901.81.

The use of non-epoxy coated black bar will be substituted with no additional compensation, as required by the Engineer.

ITEM 912.**DRILLING AND GROUTING DOWELS****EACH**

The work under this Item shall conform to the relevant provisions of Subsection 901 of the Standard Specifications and the following:

The work shall consist of drilling holes, furnishing, installing, and grouting of steel dowel reinforcement at the locations shown on the drawings or as required by the Engineer.

The dowel embedment must be adequate to fully develop 125% of the yield strength of the bar. The embedment length, the method and equipment used to drill the dowel holes, and the diameter of the drilled hole shall at a minimum conform to the recommendations of the manufacturer and be submitted to the Engineer for approval.

MATERIALS

The grout to be used for these dowels shall be selected from the MassDOT Qualified Construction Materials List for its specific application. Reinforcing steel dowels shall meet the requirements of AASHTO M31 Grade 60. All reinforcing steel dowels shall be epoxy coated in accordance with ASTM A775. Reinforcing steel dowels shall be incidental to the work under this Item.

CONSTRUCTION METHODS

All dowel holes shall be air drilled provided that the minimum edge distance of 6 inches is observed. Should, in the Engineer's opinion, air drilling be inappropriate due to questionable strength of the existing concrete or insufficient edge distance, the dowel holes shall be diamond core drilled. The inner surfaces of the diamond core drilled dowel hole's inner surfaces shall be subject to the approval of the Engineer. The diameter of the drilled dowel holes shall be in accordance with the recommendations of the grout manufacturer. The holes shall be blown clear of any debris and shall have the approval of the Engineer prior to the placement of any grout material. The drilling operation shall be performed without damage to any portion of the existing structure that is to remain in place. Any damage to any portion of the existing structure that is to remain in place shall be repaired to a condition equal to or better than that existing prior to the beginning of the Contractor's operations and shall be repaired at the Contractor's expense.

The Contractor shall strictly follow the recommendations of the manufacturer for mixing and placing the grout material prior to the placement of the dowel. The Contractor shall adhere to the recommendations of the manufacturer regarding minimum and maximum temperatures while placing the grout. Any excessive grout around the hole after placement of the dowel shall be struck off smooth while the grout is still fresh.

The Contractor shall perform on site a minimum of two (2) tests of the dowels (one test for each side of stage construction) for capacity in tension in each location or component. The test shall be performed in the presence of and to the acceptance of the Engineer. The testing, including the necessary material and equipment to perform the test, is incidental to the work under this Item. The pullout force shall correspond to 90% of the yield strength of the bar. If the test bar pulls out or if the concrete utilized in the test shows signs of fracture, the Contractor shall adjust the hole diameter, embedment length, and/or grout material to meet this requirement.

ITEM 912. (Continued)

The method of applying the tension load to the dowels shall conform to ASTM E488. Details of the test procedure, materials, and equipment shall be submitted to the Engineer for review and approval prior to commencement of the test. Dowels shall not be ordered until the embedment lengths have been approved by the Engineer.

The Contractor shall arrange with the material's manufacturer or distributor to have the services of a competent field representative at the work site prior to any drilling of the proposed dowel holes to instruct the work crews in proper dowel installation procedures. The field representative shall remain at the job site after work commences and continue to instruct until the representative, the Contractor, and Engineer are satisfied that the crew has mastered the technique of installing the dowels successfully. The representative shall make periodic visits to the project as the work progresses and shall confer on each visit with the Contractor, Inspector and/or Engineer. The manufacturer's field representative must be fully qualified to perform the work and shall be subject to the approval of the Engineer.

METHOD OF MEASUREMENT

Item 912. will be measured for payment by the Each dowel installed, complete in place.

BASIS OF PAYMENT

Item 912. will be paid for at the Contract unit price per Each, which price shall include all labor, materials, equipment, furnishing dowels, drilling holes, grouting the dowels regardless of the diameter or depth of the hole, and all incidental costs required to complete the work.

The Contractor shall be completely responsible for the expense of the service of the required field representative and the contract unit price shall be considered full compensation for all costs in connection therewith.

<u>ITEM 987.01</u>	<u>SPECIAL SLOPE PAVING UNDER BRIDGE</u>	<u>SQUARE YARD</u>
	<u>- REPAIRS</u>	

<u>ITEM 987.02</u>	<u>SPECIAL SLOPE PAVING UNDER BRIDGE</u>	<u>SQUARE YARD</u>
	<u>REMOVED AND RESET</u>	

The Work under these items shall conform to the relevant provisions of Subsections 150, 170 and 983 of the Standard Specifications and the following:

The work under Item 987.01 consists of furnishing and placing special slope paving under bridge as required by the Engineer. The work may include areas of missing or damaged existing special slope paving, or new areas where no paving was originally installed.

The work under Item 987.02 consists of removing and resetting existing slope paving under bridge where Required by the Engineer.

MATERIALS

Materials shall meet the requirements specified in the following Subsection of Division III, in addition to those listed in Subsection 983.40:

M1.03.0 Gravel Borrow

The Engineer shall determine what type of special slope paving to be used in each area under repair. The various types to be considered are quarry stone, precast concrete blocks, or cement concrete, all of which will be firmly embedded on a six (6) inch gravel foundation. Generally, if more than 50% of the original special sloped paving is still in place it shall be replenished in kind. If less than 50% of the original special sloped paving is still in place, full replacement with concrete slope paving should be considered.

The thickness of the special slope paving shall be equal to the existing quarry stones, cement concrete blocks or cement concrete slabs, where present. The thickness of the special slope paving shall be six (6) inches where grouted hot mix asphalt paving or no paving is present throughout the embankment.

CONSTRUCTION METHODS

The new slope paving shall maintain the original undisturbed section of paved or unpaved slope.

REMOVAL OF EXISTING SLOPE PAVING

For existing slope paving that has settled, has been displaced from its original position or otherwise directed to be removed by the Engineer, that is not designated to be reset under Item 987.02:

- Special slope paving quarry stones shall be removed from the site, transported to and stacked at the nearest MassDOT Maintenance Depot.
- Special slope paving concrete blocks and cement concrete slabs shall become the property of the Contractor and shall be removed and disposed of away from the site.
- Special slope paving consisting of cement grout over hot mix asphalt shall become the property of the Contractor and shall be removed and disposed of away from the site.

ITEMS 987.01 & 987.02 (Continued)**METHOD OF MEASUREMENT**

Item 987.01 will be measured for payment by the Square Yard on the surface of the paved slope as constructed.

Item 987.02 will be measured for payment by the Square Yard on the surface of the removed and reset paved slope.

BASIS OF PAYMENT

Item 987.01 will be paid for at the Contract unit price per Square Yard, which price shall include all labor, materials, equipment, grading and compacting, removal and disposal/transportation of existing paving, and all incidental costs required to complete the work.

Item 987.02 will be paid for at the Contract unit price per Square Yard, which price shall include all labor, materials, equipment, grading and compacting, and all incidental costs required to complete the work.

The price for Item 987.01 will be based on cement concrete special slope paving. If quarry stone or precast concrete blocks are required, the difference of the cost of material between cement concrete and the material used will be compensated under Payment for Materials (Non-Bid Items).

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DOCUMENT A00803

DRAWINGS AND SKETCHES

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CONTENTS:

1	TABLE OF CONTENTS
2	NOTES FOR CONTRACTOR
3-5	SUBSTRUCTURE CONCRETE REPAIR NOTES
	PIER CAP REPAIRS
6	PIER CAP REPAIR SEQUENCE
7	PIER CAP REPAIR SECTION
	PIER COLUMN REPAIRS
8	PIER COLUMN REPAIR SEQUENCE
9	PIER COLUMN PLAN
10	PIER COLUMN REPAIR SEQUENCE NOTES
11	PIER COLUMN REPAIR SECTION
12	ABUTMENT OR PIER STEM REPAIR SECTION
	PIER SHORING
13	TYPICAL TIMBER CRIBBING SHORING TOWER

 BRIDGE PRESERVATION UNIT	<p>PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS</p>	<p>SHEET: 1 OF 13</p>
	<p>SUBJECT: TABLE OF CONTENTS</p>	<p>DRAWN BY: ME</p> <p>DATE: 10/16/25</p> <p>CHKD BY: MN</p> <p>DATE: 10/16/25</p>

NOTES FOR CONTRACTOR:

IF ANY OF THE FOLLOWING CONDITIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL STOP REMOVING DETERIORATED CONCRETE AND IMMEDIATELY NOTIFY THE DISTRICT BRIDGE ENGINEER TO DETERMINE IF THE EXCAVATION CAN BE CONTINUED:

- 1. WHEN A MAXIMUM EXCAVATION DEPTH OF 6 INCHES IS REACHED IN ANY SUBSTRUCTURE REPAIR.
- 2. WHEN THE EXCAVATION ENCROACHES ON THE BEARING DEVICES.
- 3. WHEN THE COLUMN SPACING IS MORE THAN 16 FT, OR MORE THAN TWO ADJACENT BEAMS ARE SUPPORTED BY THE COLUMN BAY IN PIER CAP REPAIR.
- 4. WHEN THE PIER CAP OVERHANG, (MEASURING FROM THE FACE OF THE COLUMN), IS MORE THAN 4 FT, AND/OR THE BEARING DEVICES ARE WITHIN THE OUTER HALF OF THE OVERHANG IN PIER END CAP REPAIR.



BRIDGE PRESERVATION UNIT

PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS

SUBJECT: NOTES FOR CONTRACTOR

SHEET: 2 OF 13
DRAWN BY: ME
DATE: 10/16/25
CHKD BY: MN
DATE: 10/16/25

SUBSTRUCTURE CONCRETE REPAIR NOTES:

1. SUBSTRUCTURE REPAIRS SHALL CONSIST OF REMOVING DETERIORATED CONCRETE, PREPARING THE REPAIR SURFACE, FORMING WHERE REQUIRED, PLACING AND FINISHING NEW CONCRETE OR CEMENTITIOUS MORTAR.
2. THE REPAIR IS DESIGNATED AS A DEEP PATCH WHEN THE EXCAVATED DEPTH TO SOUND CONCRETE EXCEEDS 2” FROM THE FACE OF THE CONCRETE OR REINFORCING STEEL IS ENCOUNTERED.
3. THE REPAIR IS DESIGNATED AS A SHALLOW DEPTH WHEN THE DEPTH OF SOUND CONCRETE IS REACHED AT OR LESS THAN 2” FROM THE FACE OF THE CONCRETE AND REINFORCING STEEL IS NOT ENCOUNTERED.
4. 4000 PSI, $\frac{3}{8}$ INCH, 660 CEMENT CONCRETE (ITEM 905.) SHALL BE USED FOR ALL DEEP PATCH REPAIRS. ALL SHALLOW DEPTH REPAIRS SHALL BE PATCHED WITH CEMENTITIOUS MORTAR FOR PATCHING (ITEM 909.2). CEMENTITIOUS MORTAR SHALL BE SELECTED FROM MASSDOT QUALIFIED PRODUCT LIST AND APPROVED BY THE ENGINEER.
5. THE CONTRACTOR SHALL ESTABLISH LIMITS OF REPAIRS AT THE DIRECTION OF THE ENGINEER. THE EXTENT, LOCATION AND REPAIR TYPE (DEEP PATCH OR SHALLOW DEPTH REPAIR) ARE TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER AFTER THE CONTRACTOR HAS SOUNDED AND MARKED OUT THE REPAIR AREA. THE AREAS OF REPAIR SHALL BE MADE APPROXIMATELY RECTANGULAR WITH THE SIDES GENERALLY PERPENDICULAR TO THE SURFACE BEING REPAIRED.
6. THE DETERIORATED CONCRETE SHALL BE REMOVED AS REQUIRED TO PROVIDE GOOD SOUND CONCRETE ON WHICH NEW CONCRETE CAN BE PLACED AND SATISFACTORILY BONDED TO UNDAMAGED OR UNDISTURBED REINFORCEMENT.
7. SAW CUT ALONG NEAT LINES AROUND REPAIR AREA PRIOR TO CONCRETE EXCAVATION. USE SAW CUT DEPTH OF $\frac{3}{4}$ ”, OR AS REQUIRED TO AVOID CUTTING REINFORCING STEEL.
8. SUBSTRUCTURE REPAIR SHOULD INCLUDE THE REMOVAL OF ALL DETERIORATED, LOOSE, SPALLED, AND HOLLOW SOUNDING CONCRETE. THE DETERIORATED CONCRETE SHALL BE REMOVED FROM WITHIN THE REPAIR AREAS TO THE DEPTH OF SOUND CONCRETE. WHEN REINFORCING STEEL IS UNCOVERED, CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THE STEEL OR ITS BOND TO THE SURROUNDING CONCRETE. MAXIMUM 25 LB. HAMMERS WITH CHISEL POINTS SHALL BE USED FOR CONCRETE REMOVAL. MAXIMUM 15 LB. HAMMERS SHALL BE USED ONCE REINFORCING STEEL IS EXPOSED.
9. THE CONTRACTOR SHALL STOP REMOVING DETERIORATED CONCRETE WHEN A MAXIMUM DEPTH OF 6 INCHES IS REACHED. THE DISTRICT BRIDGE ENGINEER SHALL BE IMMEDIATELY NOTIFIED TO DETERMINE IF THE EXCAVATION CAN BE CONTINUED.
10. IF REINFORCING STEEL IS EXPOSED THEN CLEAN BY MECHANICAL CLEANING OR HIGH PRESSURE WASHING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. WHERE ACTIVE CORROSION HAS OCCURRED THAT WOULD INHIBIT BONDING, CLEAN STEEL USING ABRASIVE BLASTING METHODS ACCEPTABLE TO THE ENGINEER.



BRIDGE PRESERVATION UNIT

PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS

SUBJECT: SUBSTRUCTURE CONCRETE REPAIR NOTES


SHEET: 3 OF 13

DRAWN BY: ME

DATE: 10/16/25

CHKD BY: MN

DATE: 10/16/25

<div><div>BRIDGE PRESERVATION UNIT</div></div>	PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS		SHEET: 4 OF 13
	SUBJECT: SUBSTRUCTURE CONCRETE REPAIR NOTES (CONT.)		DRAWN BY: ME
			DATE: 10/16/25

11. AFTER REMOVAL AND EDGE PREPARATIONS ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, GREASE, LOOSELY BONDED AGGREGATE) BY ABRASIVE BLASTING OR HIGH PRESSURE WATER BLASTING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. CHECK THE CONCRETE SURFACES AFTER CLEANING TO ENSURE THAT SURFACE IS FREE FROM ADDITIONAL LOOSE AGGREGATE OR THAT ADDITIONAL DELAMINATIONS ARE NOT PRESENT.

12. NEW REINFORCEMENT SHALL BE PLACED TO SUPPLEMENT EXISTING REINFORCEMENT THAT HAS A SECTION LOSS OF 25% OR MORE OF THE ORIGINAL CROSS SECTION AREA OR HAS BROKEN, AS DETERMINED BY THE ENGINEER. ADEQUATE LAP LENGTH SHALL BE PROVIDED IN EACH DIRECTION FROM WHERE THE SECTION LOSS OR BREAK ENDS. THE LIMITS OF THE REPAIR SHALL BE MODIFIED TO MEET THE REINFORCEMENT STEEL LAP SPICE REQUIREMENTS. NEW REINFORCING STEEL SHALL BE PLACED AT THE SAME LEVEL ALONGSIDE THE EXISTING DETERIORATED OR BROKEN REINFORCING STEEL.

13. ALL EXISTING CONCRETE SURFACES WHERE NEW CONCRETE WILL BE BONDED TO EXISTING CONCRETE SHALL BE PREPARED IN ACCORDANCE WITH THE PREPARATION OF CONCRETE SURFACES SECTION OF THE SPECIAL PROVISIONS.


14. IN GENERAL, EPOXY BONDING COMPOUND SHALL BE USED FOR ALL SHALLOW DEPTH REPAIR AND HORIZONTAL SURFACES OF DEEP PATCH REPAIR, SUCH AS TOP EXCAVATED SURFACES OF PIER CAP AND BEAM SEAT. EPOXY BONDING COMPOUND SHALL BE CONSIDERED INCIDENTAL TO ITEM 905.

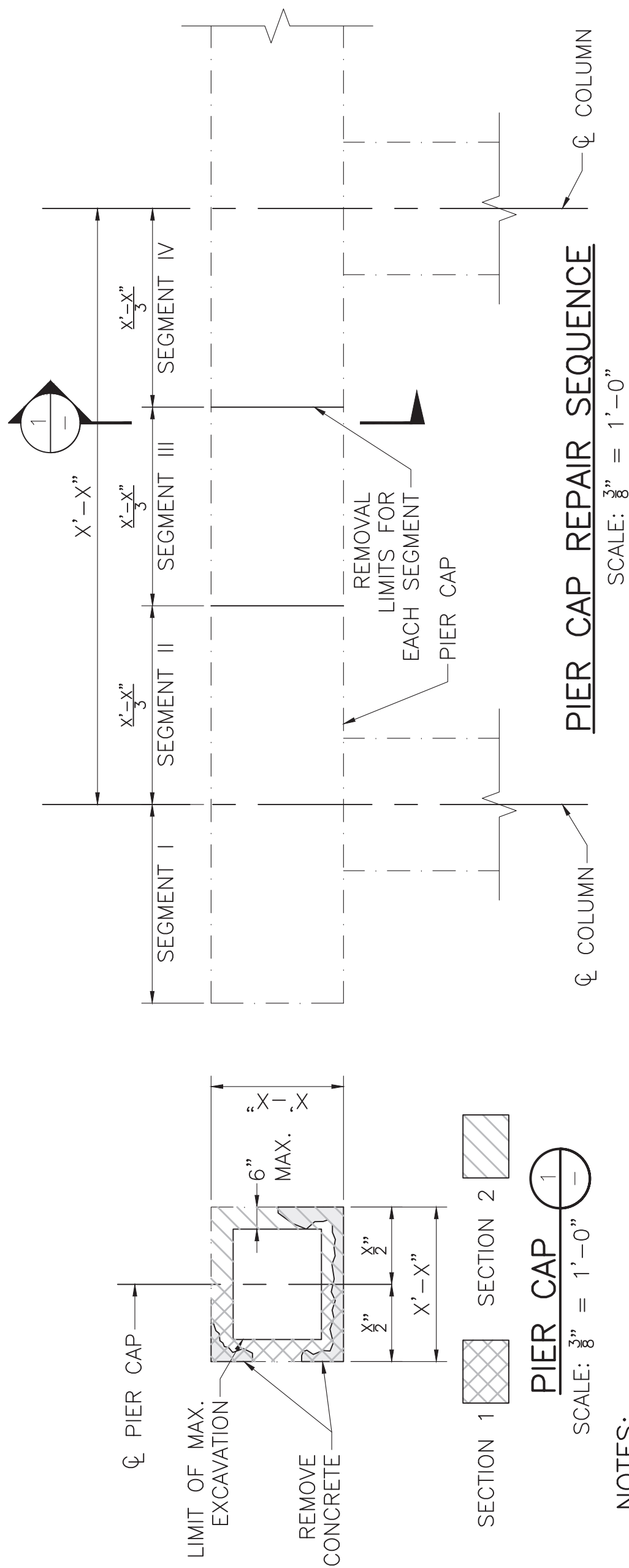
15. IF EPOXY BONDING COMPOUND IS USED, THE FORMS SHALL BE INSTALLED AT LEAST ONCE PRIOR TO APPLICATION OF THE EPOXY BONDING COMPOUND IN ORDER TO ENSURE FORMS CAN BE REINSTALLED AND FILLED BEFORE THE EPOXY BONDING COMPOUND HARDENS.

16. IF DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL INSTALL CATHODIC PROTECTION ANODES TO THE LIMITS AND AT THE SPACINGS DETERMINED BY THE ENGINEER. THE CATHODIC PROTECTION ANODES WILL BE PROVIDED BY THE ENGINEER. THE COST OF ANODE INSTALLATION AND TESTING SHALL BE CONSIDERED INCIDENTAL TO ITEM 910.1.

17. ALL CONCRETE SURFACES ONCE CURED, SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH TO MATCH EXISTING SURFACES. CURING SHALL BE IN ACCORDANCE WITH SUBSECTION 901.38.

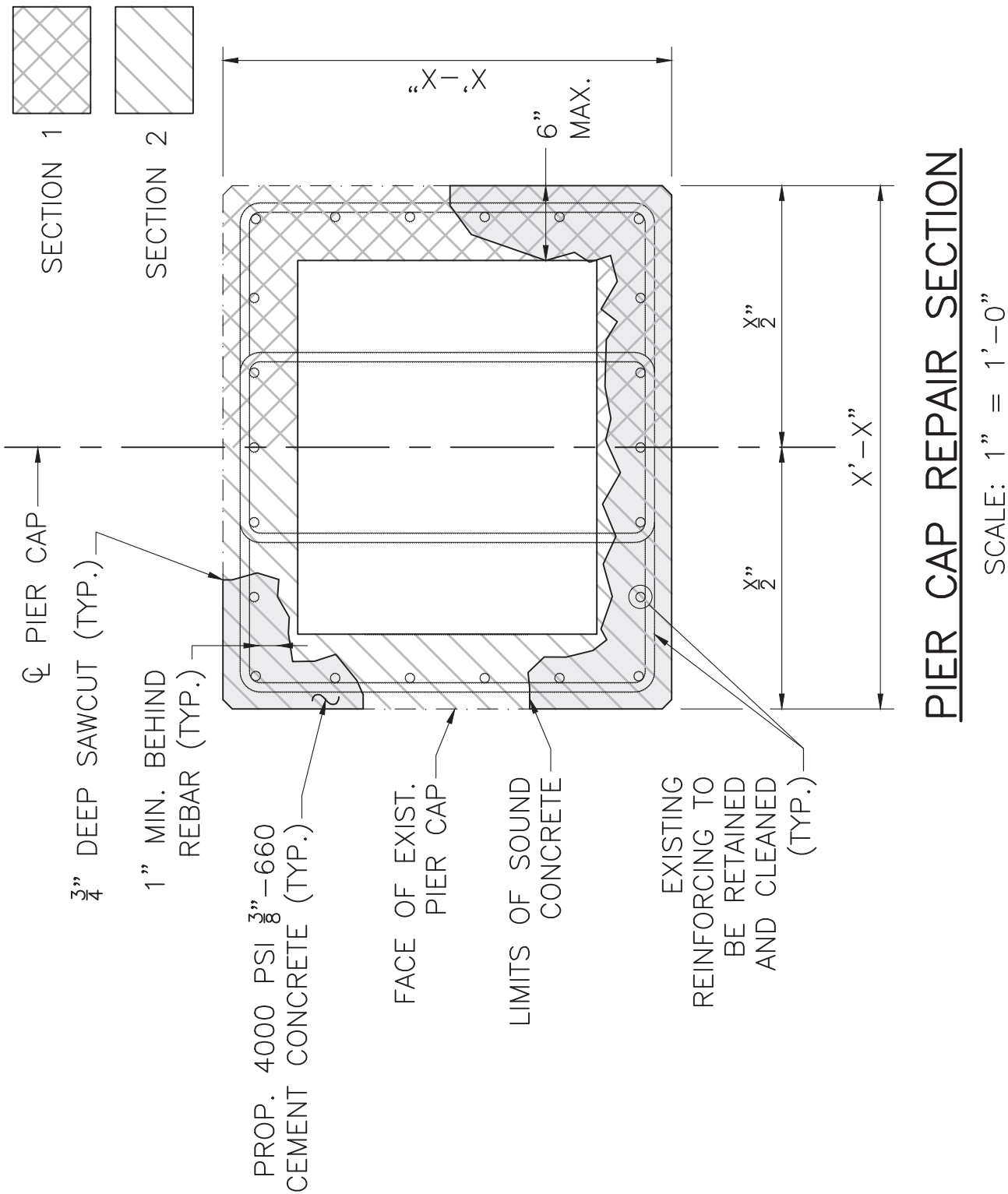
18. CONCRETE PIER CAPS, COLUMNS, ABUTMENT SEATS, AND EXPOSED SECTIONS OF ABUTMENT STEMS SHALL (AS DETERMINED BY THE ENGINEER) RECEIVE A CONCRETE PENETRANT/SEALER, 30 DAYS AFTER ALL REPAIRS HAVE BEEN MADE. CONCRETE PENETRANT/SEALER IS INCIDENTAL TO ITEM 905.

<div><div><div>BRIDGE PRESERVATION UNIT</div></div></div>	<div>19. THE REPAIR OF PIER CAP SHALL BE COMPLETED PRIOR TO THE START OF ANY COLUMN REPAIR, UNLESS OTHERWISE APPROVED BY THE ENGINEER.</div> <div>20. THE CONTRACTOR SHALL FOLLOW THE CONCRETE PIER CAPS AND COLUMNS REPAIR SEQUENCE OUTLINED ON THE PLANS. THE CONTRACTOR WILL HAVE THE OPTION TO SUBMIT AN ALTERNATE REPAIR PROCEDURE FOR REVIEW AND APPROVAL. THE CONTRACTOR MAY ALSO USE TEMPORARY SHORING TO COMPLETE THE REPAIRS IN ONE STAGE. IF SHORING IS PROPOSED TO ACCOMMODATE THE CONTRACTOR'S MEANS AND METHODS OR REPAIR SCHEDULE, NO ADDITIONAL COMPENSATION WILL BE ALLOWED. THIS SHALL REQUIRE APPROVAL OF THE ENGINEER AND THE SHORING WILL BE CONSIDERED INCIDENTAL TO THE REPAIR WORK.</div> <div>21. THE REPAIR PHASING AND SEQUENCE MAY BE MODIFIED BY THE ENGINEER SO THAT THE SECTIONS WITH WORSE DETERIORATION ARE REPAIRED FIRST.</div>	PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS	SHEET: 5 OF 13
		SUBJECT: SUBSTRUCTURE CONCRETE REPAIR NOTES (CONT.)	DRAWN BY: ME DATE: 10/16/25 CHKD BY: MN DATE: 10/16/25



NOTES:

1. CONCRETE ELEMENTS ARE DIVIDED INTO SEGMENTS. WORK TO BE PERFORMED ON SECTIONS AS SHOWN.
2. THE CONTRACTOR SHALL PROVIDE A TEMPORARY SHORING SYSTEM TO SUPPORT THE PIER CAP DEAD AND LIVE LOADS IF THE EXCAVATION LIMITS ARE TO BE EXTENDED PER EVALUATION OF THE DISTRICT BRIDGE ENGINEER.
3. THE CONTRACTOR SHALL PROVIDE A TEMPORARY SHORING SYSTEM TO SUPPORT THE PIER CAP DEAD AND LIVE LOADS IF THE EXCAVATION IS WITHIN 6" OF THE BEARING.
4. CONTRACTOR SHALL STAGE THE WORK SO THAT THE SECTIONS IN POOREST CONDITION ARE REPAIRED FIRST, AS APPROVED BY THE ENGINEER.
5. CONTRACTOR SHALL NOT WORK ON ADJACENT SECTIONS SIMULTANEOUSLY UNLESS APPROVED BY THE DISTRICT BRIDGE ENGINEER.
6. CONTRACTOR SHALL WAIT 72 HOURS AFTER COMPLETING REPAIRS TO A SECTION BEFORE REPAIRS TO ADJACENT SECTIONS, HOWEVER HE/SHE MAY PERFORM WORK ON OTHER BRIDGE ELEMENTS.
7. CONTRACTOR SHALL STOP REMOVING DETERIORATING CONCRETE WHEN A MAXIMUM DEPTH OF 6 IN. IS REACHED. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED IF MORE REMOVAL SEEMS NECESSARY ON THE BRIDGE SECTION.
8. EXISTING REINFORCING NOT SHOWN.
9. THE CONTRACTOR SHALL SUBMIT AN ALTERNATE REPAIR SEQUENCE FOR APPROVAL OF THE ENGINEER WHEN TEMPORARY SHORING IS UTILIZED DURING REPAIRS.
10. MAXIMUM SEGMENT LENGTH SHALL BE LIMITED TO 8 FEET.

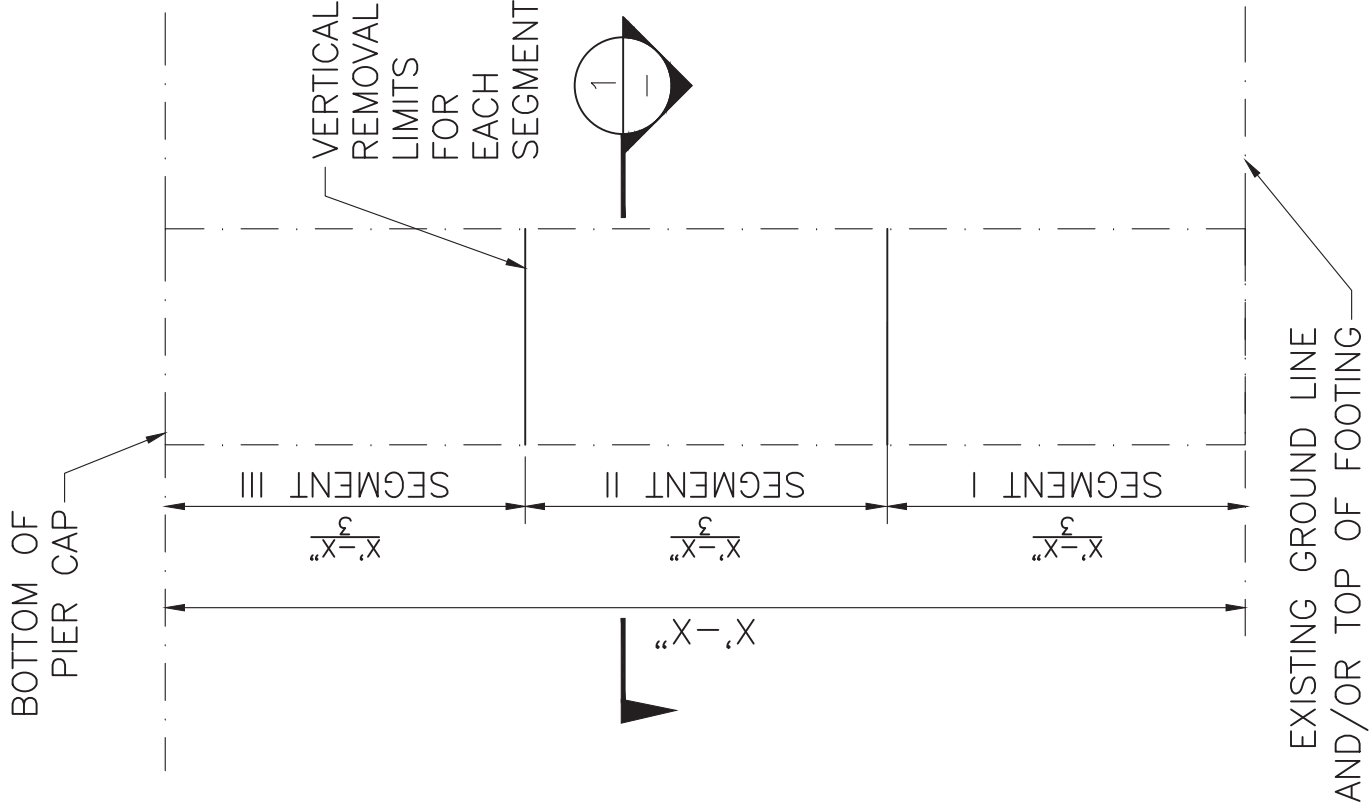


BRIDGE PRESERVATION UNIT

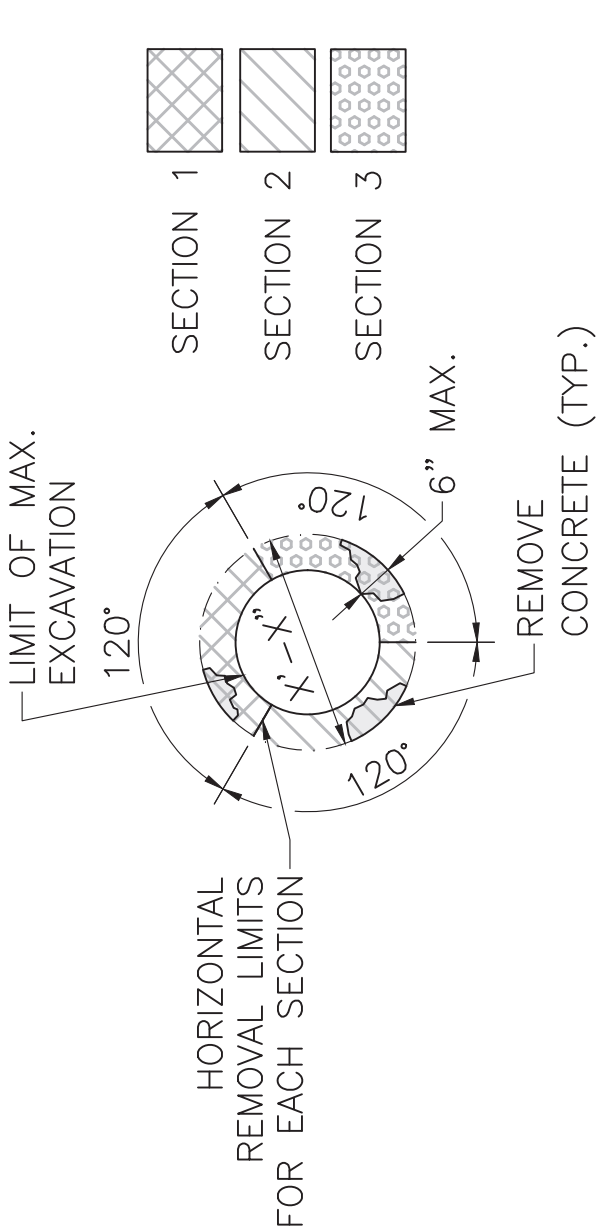
PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS

SUBJECT: PIER CAP REPAIR SECTION

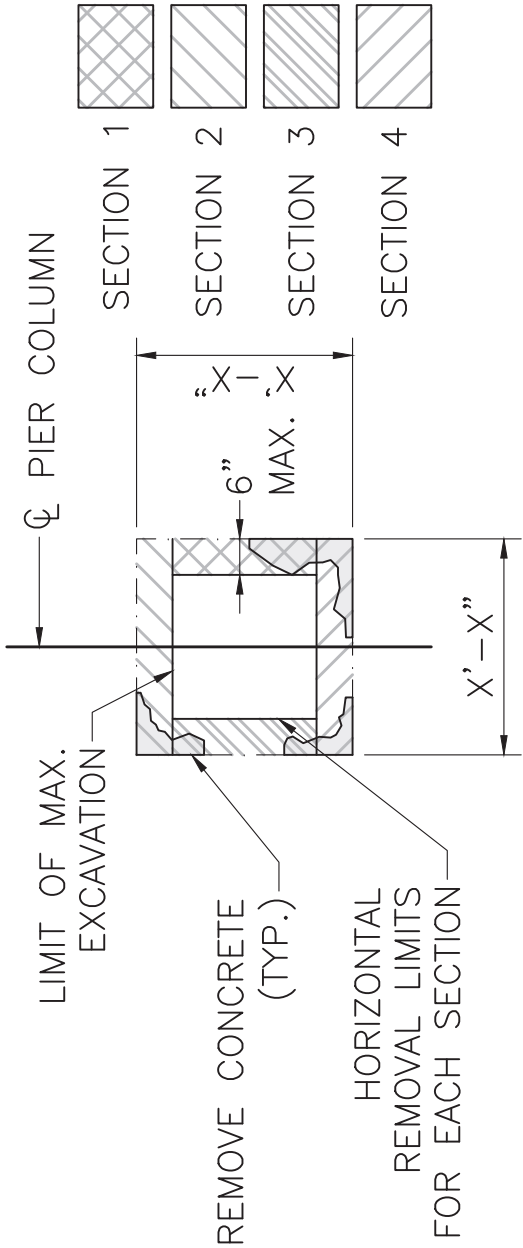
SHEET: 7 OF 13
DRAWN BY: ME
DATE: 10/16/25
CHKD BY: MN
DATE: 10/16/25



PIER COLUMN REPAIR SEQUENCE
SCALE: $\frac{3}{8}" = 1'-0"$



CIRCULAR COLUMN



RECTANGULAR COLUMN

PIER COLUMN
SCALE: $\frac{3}{8}" = 1'-0"$



BRIDGE PRESERVATION UNIT

PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS

SUBJECT: PIER COLUMN REPAIR SEQUENCE

SHEET: **8** OF 13

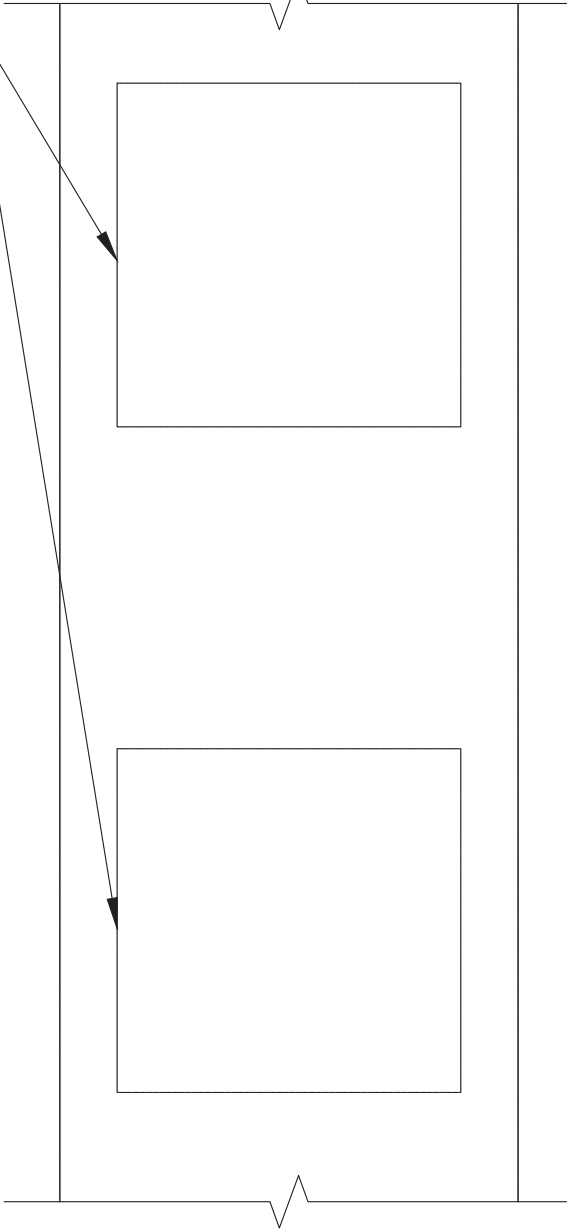
DRAWN BY: ME

DATE: 10/16/25

CHKD BY: MN

DATE: 10/16/25

CONTRACTOR SHALL NOT
WORK ON MULTIPLE
COLUMN FACES WHICH
ARE ON THE SAME SIDE
OF THE PIER
SIMULTANEOUSLY



PIER COLUMN PLAN

SCALE: $\frac{3}{8}$ " = 1'-0"



BRIDGE PRESERVATION UNIT

PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS

SUBJECT: PIER COLUMN PLAN


SHEET: **9** OF 13

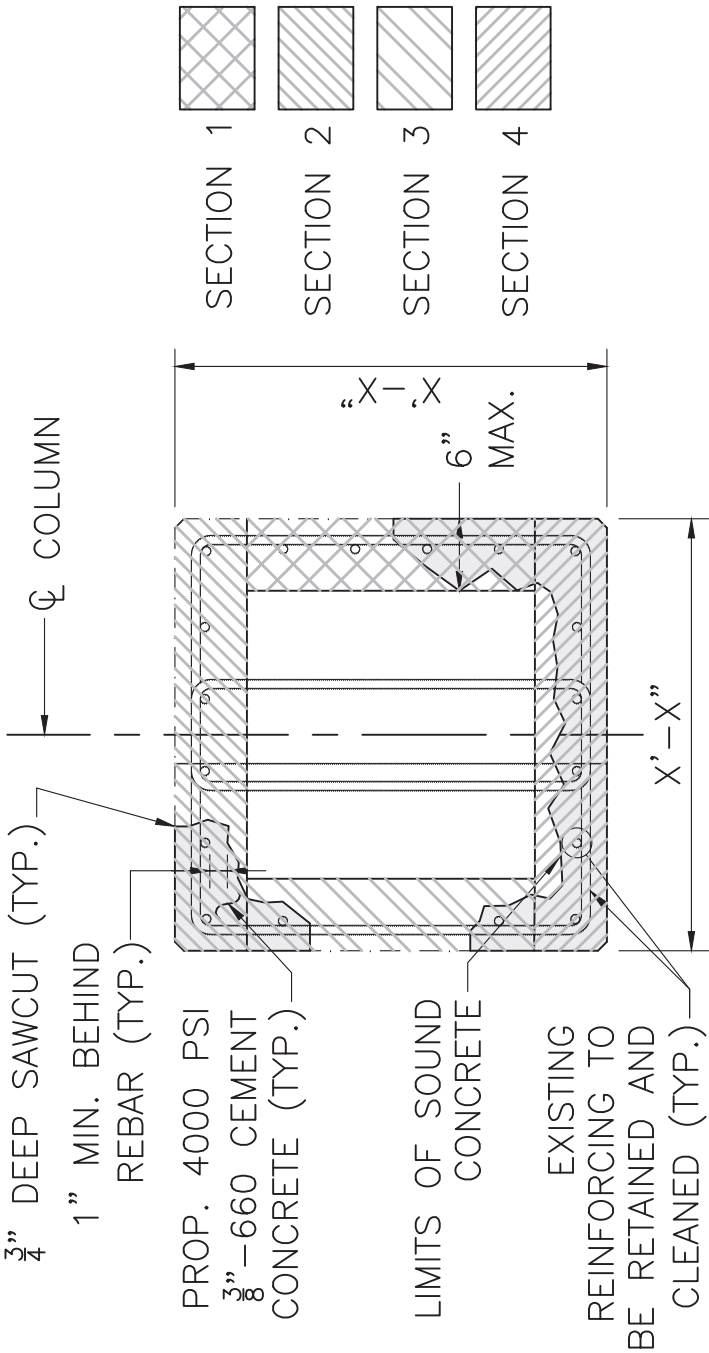
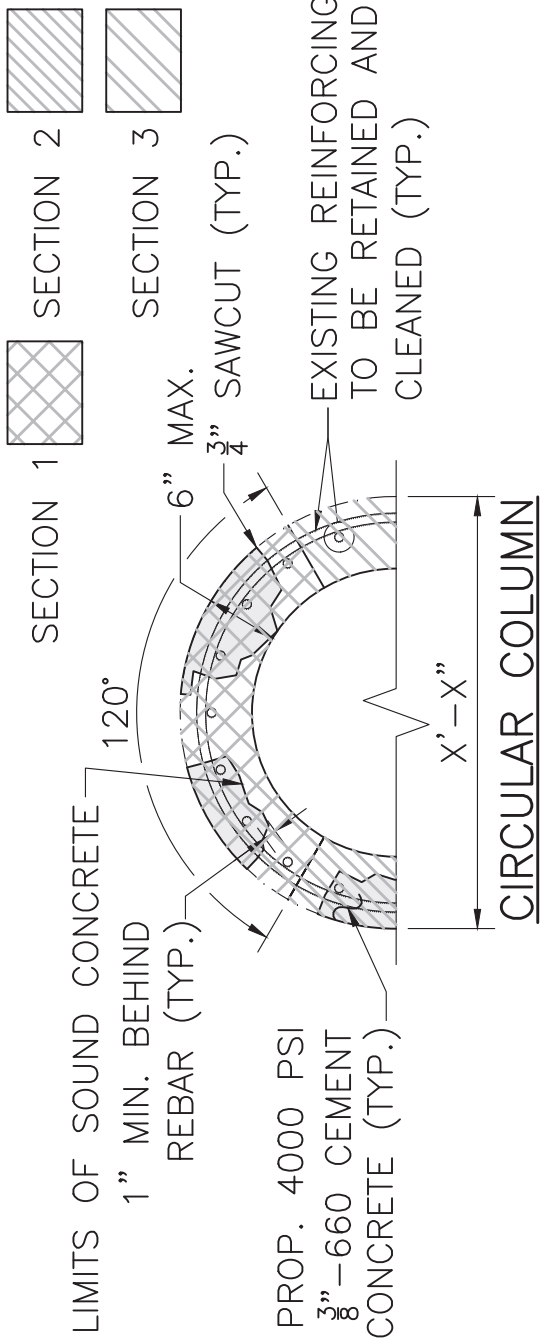
DRAWN BY: ME

DATE: 10/16/25

CHKD BY: MN

DATE: 10/16/25

<div>NOTES:</div> <div>1. CONCRETE ELEMENTS ARE DIVIDED INTO SEGMENTS. WORK TO BE PERFORMED ON SECTIONS AS DEFINED BELOW.</div> <div>2. THE CONTRACTOR SHALL PROVIDE A TEMPORARY SHORING SYSTEM TO SUPPORT THE PIER CAP DEAD AND LIVE LOADS IF THE EXCAVATION LIMITS ARE TO BE EXTENDED PER EVALUATION OF THE DISTRICT BRIDGE ENGINEER.</div> <div>3. NOTE CONTRACTOR SHALL STAGE THE WORK SO THAT THE WORSE SECTIONS ARE REPAIRED FIRST.</div> <div>4. CONTRACTOR SHALL NOT WORK ON ADJACENT SECTIONS SIMULTANEOUSLY UNLESS APPROVED BY THE DISTRICT BRIDGE ENGINEER.</div> <div>5. CONTRACTOR SHALL WAIT 72 HOURS AFTER COMPLETING REPAIRS TO A SECTION BEFORE CHIPPING ADJACENT SECTIONS, HOWEVER HE/SHE MAY PERFORM WORK ON OTHER BRIDGE ELEMENTS.</div> <div>6. CONTRACTOR SHALL STOP REMOVING DETERIORATING CONCRETE WHEN A MAXIMUM DEPTH OF 6 IN. IS REACHED. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED IF MORE REMOVAL SEEMS NECESSARY.</div> <div>7. EXISTING REINFORCING NOT SHOWN.</div> <div>8. THE CONTRACTOR SHALL SUBMIT AN ALTERNATE REPAIR SEQUENCE FOR APPROVAL OF THE ENGINEER WHEN TEMPORARY SHORING IS UTILIZED DURING REPAIRS.</div> <div>9. WHEN HEIGHT OF COLUMN IS MORE THAN 18 FEET, THE CONTRACTOR WILL BE RESTRICTED TO 6 FOOT SEGMENTS.</div>		<div><div><div><div>BRIDGE PRESERVATION UNIT</div></div><div>PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS</div><div>SUBJECT: PIER COLUMN REPAIR SEQUENCE</div></div><div><div>SHEET: 10 OF 13</div><div>DRAWN BY: ME</div><div>DATE: 10/16/25</div><div>CHKD BY: MN</div><div>DATE: 10/16/25</div></div></div>	
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RECTANGULAR COLUMN

NOTE:

IF THERE IS LESS THAN 1 1/2" CONCRETE COVER, THEN THE CONTRACTOR SHALL BUILD OUT THE FORM TO ENSURE A MINIMUM OF 1 1/2" COVER.

COLUMN REPAIR SECTION

SCALE: 3/4" = 1'-0"


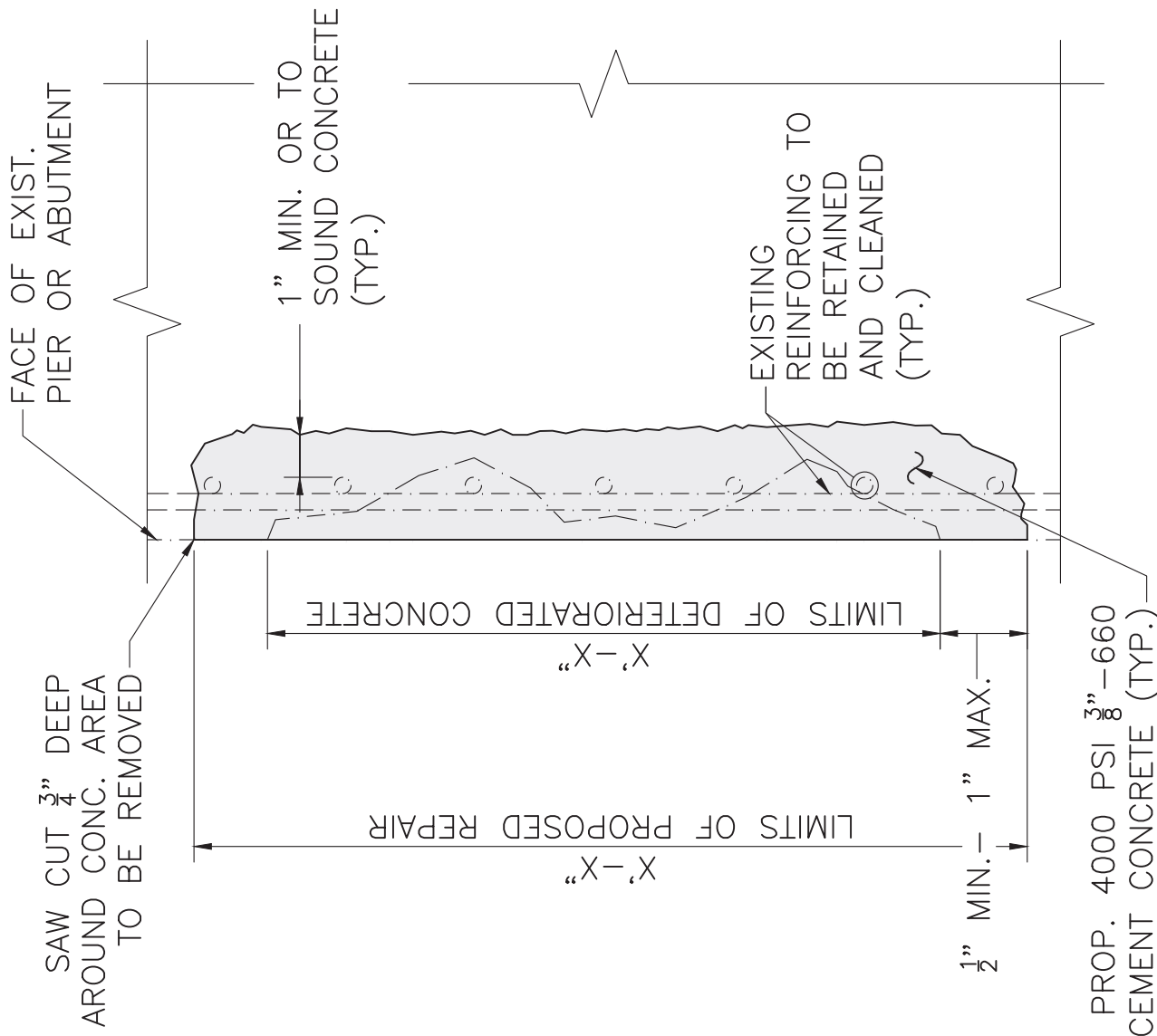


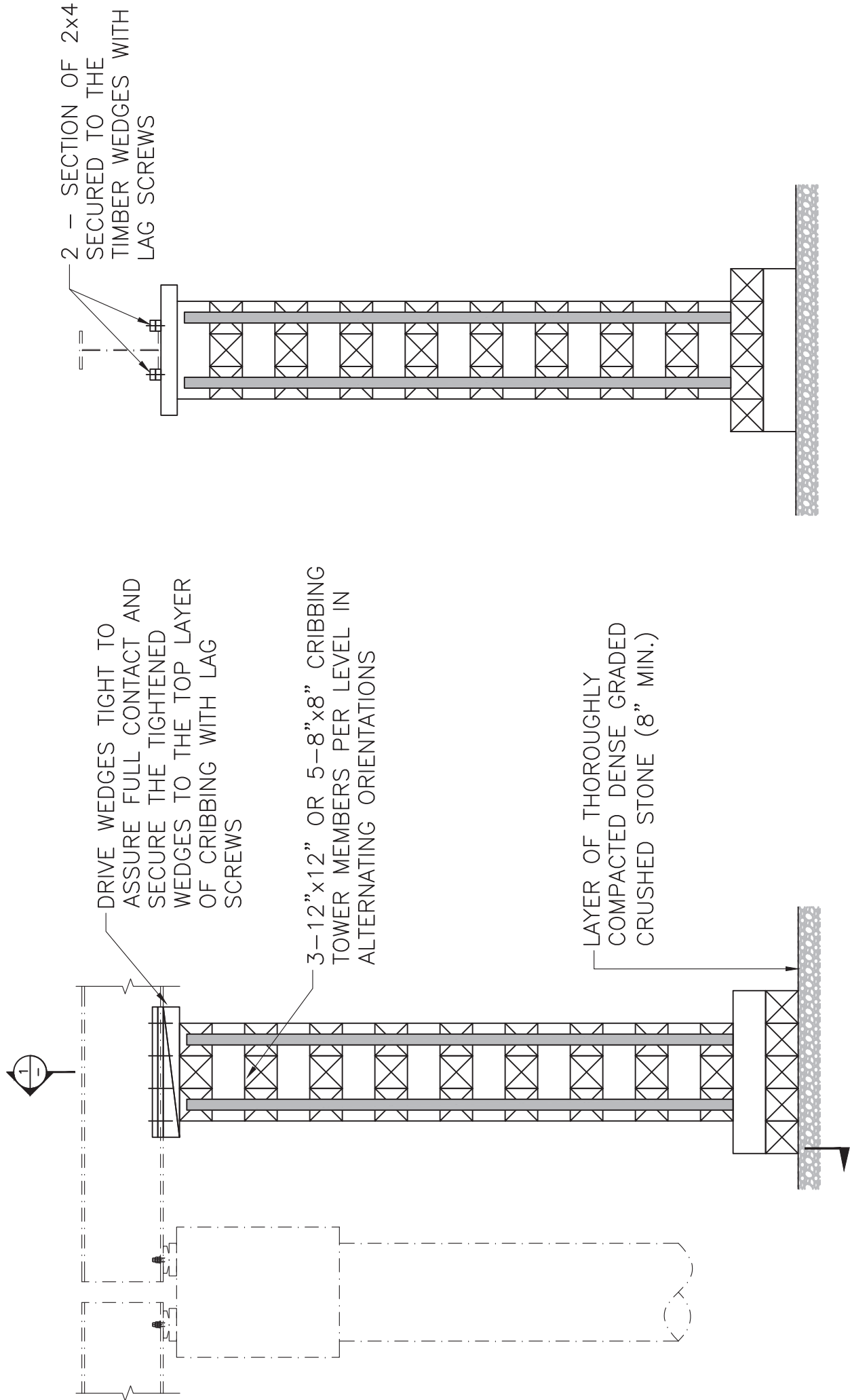
BRIDGE PRESERVATION UNIT

PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS

SUBJECT: PIER COLUMN REPAIR SECTION

SHEET: 11 OF 13
DRAWN BY: ME
DATE: 10/16/25
CHKD BY: MN
DATE: 10/16/25

<div><div>BRIDGE PRESERVATION UNIT</div></div>	<div><div>PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS</div><div>SUBJECT: ABUTMENT OR PIER STEM REPAIR SECTION</div></div>		<div><div>SHEET: 12 OF 13</div><div>DRAWN BY: ME</div><div>DATE: 10/16/25</div><div>CHKD BY: MN</div><div>DATE: 10/16/25</div></div>
	<div><p>SAW CUT $\frac{3}{4}$" DEEP AROUND CONC. AREA TO BE REMOVED</p><p>FACE OF EXIST. PIER OR ABUTMENT</p><p>1" MIN. OR TO SOUND CONCRETE (TYP.)</p><p>EXISTING REINFORCING TO BE RETAINED AND CLEANED (TYP.)</p><p>PROP. 4000 PSI $\frac{3}{8}$"-660 CEMENT CONCRETE (TYP.)</p><p>$\frac{1}{2}$" MIN. - 1" MAX.</p><p>X'-X"</p><p>Y'-Y"</p><p>LIMITS OF PROPOSED REPAIR</p><p>LIMITS OF DETERIORATED CONCRETE</p></div>		
	<div><div>NOTES:</div><div><div>1. IF THERE IS LESS THAN $1\frac{1}{2}$" CONCRETE COVER, THEN THE CONTRACTOR SHALL BUILD OUT THE FORM TO ENSURE A MINIMUM OF $1\frac{1}{2}$" COVER.</div><div>2. IF THE MINIMUM LAP SPLICE CANNOT BE ACHIEVED, MECHANICAL SPLICERS MAY BE USED WITH THE APPROVAL OF THE ENGINEER. FORMS MAY NEED TO BE BUMPED OUT TO ENSURE THAT A MINIMUM OF $1\frac{1}{2}$" COVER OVER THE MECHANICAL SPLICERS IS MAINTAINED.</div></div><div><div>PARTIAL DEPTH REPAIR</div><div>SCALE: $1\frac{1}{2}$" = 1'-0"</div></div></div>		



TIMBER CRIBBING TOWER

SCALE: $\frac{1}{2}" = 1'-0"$

TIMBER CRIBBING TOWER SECTION

SCALE: $\frac{1}{2}" = 1'-0"$

1 -



BRIDGE PRESERVATION UNIT

PROJECT: DISTRICT 3 – SUBSTRUCTURE REPAIRS AT VARIOUS LOCATIONS

SUBJECT: TYPICAL TIMBER CRIBBING SHORING TOWER

SHEET: **13** OF 13

DRAWN BY: ME

DATE: 10/16/25

CHKD BY: MN

DATE: 10/16/25

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Document A00811



**MASSACHUSETTS
BAY
TRANSPORTATION
AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

The attached Specifications are required for any construction and/or related activities on, over, under, within or adjacent to railroad property owned or controlled by the Massachusetts Bay Transportation Authority. They are intended to provide general guidelines and safeguards. Attachment "A" of Construction Guidelines and Procedures contains a summary of MBTA Railroad Operations Specifications which may be required. It is the responsibility of the Contractor to obtain all the necessary specifications for each project.

AUGUST 2014



**MASSACHUSETTS BAY
TRANSPORTATION
AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE



GUIDELINES AND PROCEDURES
FOR CONSTRUCTION ON
MBTA RAILROAD PROPERTY

AUGUST 2014

SECTION 1. SCOPE

- 1.01 These specifications provide general safeguards to railroad property owned or controlled by the Massachusetts Bay Transportation Authority and to railroad operations upon that property during the performance of construction and/or related activities on, over, under, within or adjacent to the railroad property. They are intended as guidelines and do not represent all legal requirements which are or may be associated with construction and/or related activities. The MBTA reserves the right to require additional information and clarification and to make unilateral changes to these specifications at any time, at its sole discretion.

SECTION 2. DEFINITIONS

MBTA

Massachusetts Bay Transportation Authority; Massachusetts Realty Group, Designated Representative of MBTA Real Estate

RAILROAD COMPANY

The particular reference for the purpose of these specifications is the railroad company which maintains and/or operates or has trackage rights on the subject MBTA Railroad Property, including, but not limited to:

- Massachusetts Bay Transportation Authority (MBTA")
- Keolis Commuter Services
- Providence and Worcester Railroad (PW)
- National Railroad Passenger Corporation ("Amtrak")
- CSX Transportation ("CSX")
- Pan Am Railways (PAR) and subsidiaries The Boston and Maine Corporation (BM), The Springfield Terminal Railway Company (ST), its affiliates, successors and assigns
- Bay Colony Railroad Corporation (BLCR)

MBTA RAILROAD PROPERTY

All railroad rights of way and adjacent owned and/or controlled by the MBTA.

OWNER

The individual, utility, government, or corporation having title to the structure to be constructed upon, over or adjacent to the railroad property owned or controlled by the MBTA.

UTILITY

Public or private communication, water, sewer, electric, gas and petroleum companies or other entity governed by the Massachusetts Department of Public Utilities.

GOVERNMENT

Federal, State, Town, City, County and other forms of government.

CORPORATION

Any firm duly incorporated under laws of a state government.

INDIVIDUAL

Any party not defined by "Owner, Utility, Government or Corporation".

CONTRACTOR

The individual, partnership, firm, corporation or any combination thereof, or joint venture, contracting with a Utility, Government, Firm, Company, Corporation or Individual for work to be done on, over, under, within or adjacent to MBTA Railroad Property.

OWNER OR ITS CONTRACTOR

As used in these specifications, does not affect the responsibilities of either party for work conducted on, over, under, within or adjacent to MBTA Railroad Property.

CONSTRUCTION DRAWINGS

Original drawings, submitted to the Engineer by the Contractor pursuant to the Work, including, but not limited to: stress sheets, working drawings, diagrams, illustrations, schedules, performance charts, brochures, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or other supplementary plans or similar data which are prepared by the Contractor or a Subcontractor, manufacturer, supplier or distributor, and which the Contractor is required to submit for review and approval by the MBTA. Working Drawings: Contractor prepared plans for temporary

structures and facilities. Working Drawings for elements of work which may affect safety of persons or property included but are not limited to Contractor's plans for temporary structures such as decking, temporary bulkheads, support of utilities, and for such other work as may be required for construction but which do not become an integral part of completed project.

SECTION 3. SUBMITTALS

3.01 INITIAL CONTACT

- A. The MBTA owns the majority of the railroad lines in eastern Massachusetts. Many of these railroad lines are operated for passenger service, using a Railroad Company as an operating and maintaining Contractor. Some of the railroad lines are used for freight-only service, operated and maintained by other Railroad Company(s). In most instances, both passenger and freight service are operated over the same railroad lines.
- B. All of the MBTA railroad lines are maintained by a designated Railroad Company(s), excepting rapid transit and light rail lines. The maintaining Railroad Company(s) has rights and responsibilities, in addition to the MBTA's property owner's rights.
- C. To obtain further information concerning License Agreements, Easements, Licenses for Entry and performance of construction related activities which affect MBTA Railroad Property, a written request may be forwarded to:

License Administrator
Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116

or you may access the website at www.mbtarealty.com

The License Administrator is also the contact person for information concerning rapid transit and light rail lines.

SECTION 4. PLANS AND SPECIFICATIONS

- 4.01 SCOPE: It is the intent of the MBTA to eliminate or minimize any risk involved with construction or related activities on, over, under, within or adjacent to MBTA Railroad Property. Therefore, MBTA approval and

frequently one or more Railroad Company(s) approval of construction plans and specifications for all phases of a proposed project affecting MBTA Railroad Property is required.

- 4.02 GENERAL: If requested by the License Administrator, the applicant must provide six (6) sets of plans and specifications to the License Administrator. These plans and specifications must meet the approval of the Railroad Company(s) and the MBTA prior to the start of construction. These plans are to be prepared in sizes as small as possible (no smaller than 11" x 17") and are to be folded to an 8-1/2 inch by 11 inch size (folded dimensions) with a 1-1/2 inch margin on the left side and a 1 inch margin on the top.
- A. After folding, the title block and other identification of the plans shall be visible at the lower right corner, without the necessity of unfolding. Each plan shall bear an individually identifying number and an original date, together with subsequent revision dates, clearly identified on the plan.
 - B. All plans are to be individually folded or rolled and where more than one plan is involved, they shall be assembled into complete sets before submission to the MBTA.
- 4.03 PLANS: The plans are to show all the work which may affect MBTA Railroad Property, and contain a location map and plan view of the project, with appropriate cross sections and sufficient details. The proposed construction or related activities must be (orated with respect to top of rail (vertical) and center line of track (horizontal)). The plan must also include railroad stationing, property lines and subsurface soil conditions. The subsurface information is to be in the form of boring logs with the borings located on the plan view. The plans must be stamped by a Professional Engineer registered in the state of Massachusetts. (The purchase of railroad valuation plans may be arranged by contacting MBTA Engineering offices at (617) 222-6178).
- 4.04 SPECIFICATIONS: The specifications summarized on Attachment "A" attached hereto are the Standard Specifications of the MBTA Railroad Operations Department and apply to all types of construction work affecting MBTA Railroad Property.
- A. In addition to "Maintenance and Protection of Railroad Traffic" and "Insurance Specifications" which are required for all work on, over, under, within or adjacent to MBTA Railroad Property, certain other Specifications contained in Attachment "A" shall be incorporated into construction/engineering submittals when deemed necessary by the MBTA and/or Railroad Company(s). (The purchase

of additional specifications may be arranged by contacting MBTA offices at (617) 222-3448 or visiting Massachusetts Realty Group website at www.mbtarealty.com.

SECTION 5. SUBMISSION REVIEW

- 5.01 An initial submission of six (6) sets of plans and specifications for MBTA review must be forwarded to the License Administrator, along with a completed MBTA Application for Entry (Attachment "B"). The submission will be circulated for review and comment to MBTA departments which may be impacted by the proposed project. If approved by the MBTA, the Railroad Company(s) will review.
- 5.02 The applicant is advised that the MBTA's initial review process requires a minimum forty-five (45) day period, prior to the Railroad Company(s) involvement, and additional processing time may be required for specific documents (See Section 9).

SECTION 6. INSPECTIONS/PAYMENTS

- 6.01 The MBTA may inspect all projects affecting MBTA Railroad Property at least twice, at the applicant's sole expense. The actual number of MBTA inspections will depend on the size and complexity of the project.
- 6.02 The MBTA may utilize Railroad Company inspectors and flagmen for daily inspection and protection of rail traffic during the term of the construction period or related activities. The Owner or Contractor will be responsible for advance payment of all associated fees.
- 6.03 Advance payments to the MBTA for construction/engineering review of plans and specifications by MBTA staff must be submitted when initial contact is made with the License Administrator. Payments shall be in the form of check or money order, made payable to the Massachusetts Bay Transportation Authority.
- 6.04 Advance payments covering the services for Railroad Company(s) construction/engineering review of plans and specifications, or services of an inspector or flagman, will be paid directly to the Railroad Company(s). The MBTA will advise when such services are required, and the Railroad Company(s) will advise of the amount of the required advance payment.

SECTION 7. EXAMINATION OF PLANS OR PROPERTY

- 7.01 The Contractor/Applicant shall have no claim for any differences between MBTA valuation plans and the actual conditions encountered in the field.

SECTION 8. INSURANCE AND INDEMNIFICATION

- 8.01 Prior to entry upon MBTA Railroad Property, insurance will be provided to and approved by the MBTA and affected Railroad Company(s), as outlined in "Insurance Specifications."
- 8.02 Additionally, all MBTA Licenses and Letters of Authorization contain a clause for Indemnifying MBTA and the Railroad Company(s) from and against any and all liabilities, losses, damages, costs, expenses, causes of action, suits, claims, demands and/or judgments of any nature whatsoever that may be imposed upon or incurred by or asserted against the MBTA or the Railroad Company(s).

SECTION 9. LEGAL DOCUMENTS FOR TEMPORARY AND PERMANENT INSTALLATIONS

- 9.01 The nature of entry upon or installation within MBTA Railroad Property will determine the authorizing document to be issued. Listed below are brief descriptions of MBTA documents:
- A. **License for Entry:** Authorizes short-term entry for purposes of survey, Inspection, test borings, access, etc. One time administrative/engineering/legal review and access fees.
 - B. **License Agreement:** Authorizes installations, subject to termination clause, if Applicant chooses not to pursue an Easement. One time administrative/engineering/legal review fee as well as annual rental fee.
 - C. **Easement:** Authorizes permanent installations in form suitable for recording at Registry Deeds. All easements are non-exclusive and subject to relocation at the Owner's expense, for Mass transportation purposes:
 - 1. Easements must receive MBTA Board of Directors approval, which involves considerable time. Once approved by the Board of Directors and upon payment in full to the MBTA, a License for Construction is issued. Upon final inspection and acceptance of the installation by the MBTA the Easement document is issued.
 - 2. Permanent Subsurface Easement widths are limited to a maximum three-foot distance on either side of the occupation.

3.
 - a) A one-time administrative/engineering/legal review fee, in addition to value of easement, as established by independent appraisal conducted at the Applicant's expense.
 - b) If easement size is minimal, as determined by the MBTA, a fixed fee, encompassing administrative/engineering/legal review fee.
- D. **Letter of Authorization:** Authorizes installations and construction activities in association with Master License Agreements. One-time administrative/engineering/legal review as well as access and/or annual fees.

ATTACHMENT "A"

SUMMARY OF MBTA RAILROAD OPERATIONS SPECIFICATIONS

I. GUIDELINES AND PROCEDURES FOR CONSTRUCTION ON MBTA RAILROAD PROPERTY

This general specification outlines the immediate design requirements and methodology for progressing construction activities on MBTA Railroad Property.

II. MAINTENANCE AND PROTECTION OF RAILROAD TRAFFIC

This specification will be included in ALL work requirements on MBTA Railroad Property, and covers rules, requirements, and protective services or any construction-related activity on MBTA Railroad Property. Supplemental specifications are listed below.

III. INSURANCE SPECIFICATIONS

This specification details the required insurance coverages and limits of the MBTA and Railroad Company(s).

IV. PIPELINE OCCUPANCY SPECIFICATIONS

This specification details requirements for all pipeline borings/jacking's and open cuts on or adjacent to MBTA Railroad Property, as well as requirements for Drawing submittals.

V. SPECIFICATIONS FOR WIRE CONDUIT AND CABLE OCCUPATIONS

This specification details requirements for clearances and installations of parallel and overhead crossings on MBTA Railroad Property, as well as requirements for Drawing submittals.

VI. BRIDGE ERECTION DEMOLITION AND HOISTING OPERATIONS

This specification details plan preparation for demolition and/or hoisting and erection of structures on and over MBTA Railroad Property.

VII. TEMPORARY SHEETING AND SHORING

This specification details requirements for plan preparation and calculations necessary for sheeting and shoring for construction on or adjacent to MBTA Railroad Property.

VIII. BLASTING SPECIFICATIONS

This specification outlines submittals, details and requirements for blasting on or adjacent to MBTA Railroad Property.

IX. TEMPORARY PROTECTION SHIELDS FOR DEMOLITION AND CONSTRUCTION

This specification outlines criteria for plan preparation related to protection of MBTA Railroad Property when work takes place on overhead structures.

X. INDUSTRIAL SIDE TRACK SPECIFICATIONS

This specification outlines minimal requirements for materials and installation submission for private railroad side tracks up to MBTA property line and/or clearance point. Other provisions, site-specific, may be required, including signal protection maintenance and protection of railroad traffic.

XI. RIGHT OF WAY FENCING SPECIFICATIONS

This specification details the requirements for the materials, construction and installation of standard right of way fence.

XII. TEST BORING SPECIFICATIONS

This specification outlines procedures and requirements for the performance of test borings on MBTA Railroad Property.

XIII. FIBER OPTIC CABLE SPECIFICATIONS

This specification details requirements for design and installation of fiber optic cables on MBTA Railroad Property; and is modified by site-specific requirements, including the construction methodology, location and type of fiber optic cables and protection conduits.

XIV. RAILROAD OPERATIONS BOOK OF STANDARD PLANS, TRACK AND ROADWAY, MW-I SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF TRACK

Certain construction activities may require obtaining this comprehensive package if rail construction details and requirements are related to the track operation.

XV. COMMUTER RAIL DESIGN STANDARDS

ATTACHMENT "B"

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
APPLICATION FOR ENTRY UPON MBTA RAILROAD, TRANSIT,
OR OTHER PROPERTY**

Date_____

1. Name of Applicant: _____
2. Type of Entity (Partnership, Corporation, Proprietorship, Public Authority, etc.):

3. Mailing Address: _____
4. Contact info:_____
5. If incorporated, state of incorporation:_____
6. Proposed license term commencement date:_____
7. Agents for applicant for service of notice or process: _____

8. Administrative Fee: 1,000.00 paid with application
9. *If plan reviews by The MBTA Design and Construction are deemed necessary the following fee shall apply:*

Design and Construction Plan Review Fee: 1,600.00 Paid with Application Fee
10. Applicant shall submit Drawings in pdf form and one set of paper Drawings to License Administrator
11. If applicant is self-insured, please provide limits of self-insurance and attach copies of authorizing legislation or certification thereof: _____

12. If applicant is authorized by public authority to enter into such license agreement, please provide:

Motion, Resolution, or Ordinance No.: _____

Date of Adoption: _____

Adopted by: _____

13. Is the applicant seeking permission to perform environmental testing and/or assessment on Authority property?

- a) Is the proposed testing and/or assessment required by the Massachusetts Contingency Plan ("MCP")?

- b) What is the Release Tracking number and current status of the MCP work?

14. Name, title and email of applicant's officer authorized to sign agreement: _____

Project Description

1. Brief description of construction (including types of pipes and other attachments or ancillary facilities to be installed on MBTA Railroad Property): _____

2. Brief description of purpose of entry and/or installation: _____

Space Requirements
[*To Be Provided*]

Technical Information

1. Is this occupancy within the limits of a public road? _____
Attach copies of applicant's franchise to occupy such space.
2. If occupancy is under, over, though, or attached to undergrade or overhead bridge, who owns such bridge? _____

3. Type of occupancy (facility):
 - a) Exact Length of MBTA Railroad Property to be burdened by occupancy: _____

 - b) Width of excavation facility on MBTA Railroad Property:

 - c) Number of manholes: _____

A. Aerial or underground wire and cable:

(1) Telephone and other communication cables:

Number of cables: _____

Number of pairs/cable: _____

Are these composite coaxial cables? _____

(2) Power Cables:

Number of cables/size: _____

Number of volts per conductor: _____

Are these pipe-type cables consisting of one or more high voltage cables encased in steel pipe under inert oil pressure? _____

(3) Fiber optic cables:

Number of cables: _____

Number of distribution cables: _____

Number of transmission cables: _____

Number of strands in each cable: _____

Number of repeater stations on MBTA Railroad Property: _____

Systems (check one):

Transmission _____

Distribution _____

Sensor _____

(4) Number of spare or unoccupied ducts to be installed: _____

B. Pipes and Sewers

(1) Circular line carrying no pressure:

Number of pipes: _____

Number of inches of inside nominal diameter per pipe: _____

(2) Circular lines under pressure and carrying non-flammable, non-explosive, or non-combustible supporting materials, except coal and slurry:

Number of pipes: _____

Number of inches of inside nominal diameter per pipe: _____

(3) Circular lines under pressure and carrying flammable, explosive, or combustible supporting material:

Number of pipes: _____

Number of inches of inside nominal diameter per pipe: _____

(4) Non-circular pipe: _____

(5) Will a pipe tunnel be constructed? _____

(6) Will pipe be supported by MBTA structures, bridges, etc.? _____

Explain: _____

(7) Will pipe be attached to MBTA structures, bridges, etc.? _____

Explain: _____

C. Ancillary Facilities

Number of wooden poles to be installed on MBTA Railroad Property:

Other wooden supporting structures: _____

Steel supporting structures: _____

Explain: _____

Number of braces, stub poles: _____

Number of guy wires anchored on MBTA Railroad Property: _____

Number of span guy wires crossing MBTA Railroad Property: _____

D. Attachments

- (1) Attachment of aerial wires and cables to poles or other structures of MBTA used in wire line construction or support:

Number of wires attached to MBTA cross-arm: _____

Voltage of wire: _____

Number of wires attached to applicant's cross-arm or bracket: _____

Voltage of wire: _____

Number of cross-arms or brackets attached to MBTA poles: _____

- (2) Attachment of aerial wires and cables to building or structures other than those used in wire line construction or support:

Number of wires or cables attached to MBTA's building or structures:

- (3) Attachment of cable terminals to poles, buildings, or structures including highway bridges, railroad bridges over highways, or other bridges of MBTA:

Number of cable terminals, loading coils, transformers, or like devices attached:

Explain: _____

E. Guy wire crossings and overhanging cross-arms and power wires of pole lines outside MBTA right-of-way.

Number of guy wires crossing MBTA Railroad property but not anchored thereon: _____

Number of cross-arms overhanging MBTA Railroad Property from poles located outside thereof: _____

Number of cross-arms on any poles: _____

It is hereby understood and agreed that the undersigned applicant will bear any and all costs associated with MBTA's preliminary and final engineering review in connection with this application. Any charges in excess of the initial advance payment will be billed directly to the address indicated in Item #3 above.

Agent: _____

For: _____
Name of Applicant

By: _____
(Title)

(Date)

REVENUE ENFORCEMENT AND PROTECTION PROGRAM CERTIFICATION

Pursuant to M.G.L. Ch. 62C, Sec. 49A, I certify under penalties of perjury that I (my company), to my best knowledge and belief, have (has) filed all state tax returns and paid all state taxes required under law.

Social Security Number or
Federal Identification Number

Signature of Individual or Corporate Name

By: _____
Corporate Officer
(If applicable)

Date: _____

EMPLOYER'S CERTIFICATE OF COMPLIANCE WITH
MASSACHUSETTS EMPLOYMENT SECURITY LAW

Pursuant to G. L. C. 151A, Sec. 19A (b), I _____
on behalf of (Name of Employer) _____,
D.E.T. ID Number _____, certify under the penalties of perjury¹ that the
aforementioned employer has complied with all laws of the Commonwealth relating to contributions
and payments in lieu of contributions.

Signed under the penalties of perjury this _____ day of _____, 20__.

Name of Employer

Signature

Name (Printed)

Title (Printed)

¹ _____
The employer may certify its compliance if it has entered into and is complying with a
repayment agreement satisfactory to the Commissioner or there is a pending adjudicatory
proceeding or court action contesting the amount due pursuant to G. L. C. 161A, Sec.
19A(c).

STATEMENT REGARDING BENEFICIAL INTEREST

In compliance with the provisions of Chapter 7, Sec. 40J of the General Laws, I hereby state, under the penalties of perjury, that the true names and addresses of all persons who have or will have a direct or indirect beneficial interest in the real property subject to this Application dated

_____, 20____,

between _____ as applicant/tenant, for premises in the building (on the site) know as _____, and located at _____
_____ are listed below.

Name and residence of all persons with beneficial interests:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Signed: _____

Title: _____

Date: _____

ATTACHMENT "C"

REFERENCED STANDARDS AND SPECIFICATIONS

A. Wherever standards or specifications issued by a recognized industry association or regulatory body are referenced in these Specifications, the reference shall be interpreted as incorporating the referenced standard or specification in total into these Specifications as applicable. In the event of a difference between referenced standard or specifications and these Specifications, the latter shall govern.

B. Technical Reference Abbreviations - References are made to recognized standards by use of the acronyms listed below. Addresses are included for convenience, and the accuracy of the addresses is not warranted:

AA	The Aluminum Association 900 19th Street NW Washington, DC 20006
AAR	The Association of American Railroads American Railroads Building 50 F Street NW Washington, DC 20001
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street NW Suite 249 Washington, DC 20001
ACGIH	American Conference of Governmental Industrial Hygienists 1330 Kemper Meadow Drive Cincinnati, OH 45240
ACI	American Concrete Institute P. O. Box 19150 Detroit, MI 48219
AFPA	American Forest and Paper Association 1111 19th Street, NW Suite 700 Washington, DC 20036

AIA	American Insurance Association 1130 Connecticut Avenue NW Washington, DC 20036
AISC	American Institute of Steel Construction Inc. 1 East Wacker Drive Suite 1300 Chicago, IL 60601
AISI	American Iron and Steel Institute 1101 17th Street NW Suite 1300 Washington, DC 20036-4700
AITC	American Institute of Timber Construction 7012 South Revere Parkway Suite 140 Englewood, CO 80112
ANSI	American National Standards Institute 11 West 42nd Street New York, NY 10036
APA	American Plywood Association P. O. Box 11700 Tacoma, WA 98411
APHA	American Public Health Association 1015 15th Street NW Washington, DC 20005
AREA	American Railway Engineering Association 50 F Street NW Washington, DC 20001
ASCE	American Society of Civil Engineers 345 East 47th Street New York, NY 10017
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017

ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWPA	American Wood Preservers' Association P. O. Box 286 Woodstock, MD 21163-0286
AWS	American Welding Society 550 NW 42nd Avenue Miami, FL 33126
AWWA	American Water Works Association, Inc. 6666 W. Quincy Avenue Denver, CO 802350
CSI	Construction Specifications Institute 601 Madison Avenue Alexandria, VA 22314-1791
FHA	Federal Highway Administration 400 7th Street SW Washington, DC 20590
FRA	Federal Railroad Administration 403 7th Street SW Washington, DC 20590
ICBO	International Conference of Building Officials 5360 Workman Mill Road Whittier, CA 90601
IIA	Incinerator Institute of America 60 East 42nd Street New York, NY 10017



**MASSACHUSETTS BAY
TRANSPORTATION
AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE



MAINTENANCE AND PROTECTION OF RAILROAD TRAFFIC

AUGUST 2014

SECTION 1. GENERAL

- 1.01 The Contractor should note that these specifications govern proposed work that involves construction on, over, under, within or adjacent to MBTA Railroad Property. Requirements must be strictly observed whenever the tracks, structures, or properties of the MBTA are involved or affected.
- 1.02 If the tracks or other facilities of the MBTA are endangered, the Contractor shall immediately perform such work as directed by the Railroad Company(s), and upon failure of the Contractor to carry out such orders immediately, the Railroad Company(s) may take whatever steps are necessary to restore safe conditions. The cost and expense to the Railroad Company(s) and/or MBTA of restoring safe conditions or of any damage to the MBTA's trains, tracks, or other facilities caused by the Contractors' or subcontractors' operations, shall be at the sole expense of the Contractor and will be collected as appropriate. This cost shall be paid for by the Contractor and may be deducted from any monies due and that may become due to the Contractor.
- 1.03 Before entering upon MBTA Railroad Property:
 - A. The Owner or its Contractor shall be fully informed of all requirements of the MBTA pertaining to the specific project and shall conduct all their work accordingly. Any questions relating to the requirements of the MBTA should be directed to the Director of Engineering for MBTA Railroad Operations or their authorized representative.
 - B. The Owner or its Contractor shall execute an MBTA License for Entry, and shall provide the MBTA and Railroad Company(s) with the information required in the "Insurance Specifications".
 - C. The Owner or its Contractor shall take note that if an excavation is to be made within a 2 to 1 slope line commencing 5.5 feet from the centerline of track, they shall be required to submit the proposed method of soil stabilization for approval by the Director of Engineering for MBTA Railroad Operations.
 - D. The Owner or its Contractor shall furnish detailed plans for falsework, bracing, sheeting, or other supports adjacent to the tracks for approval by the Director of Engineering for MBTA Railroad Operations and the Railroad Company(s), and the work shall be performed in accordance with temporary "Sheeting and Shoring". All plans and calculations shall be stamped by a Registered Professional Engineer.
 - E. The Owner or its Contractor shall give written notice to the Director of Engineering for MBTA Railroad Operations and the applicable

Railroad Company(s) at least 21 days in advance of starting work or locating equipment at the site.

- F. The Owner or its Contractor shall make all necessary arrangements with the MBTA before entering upon MBTA Railroad Property.

1.04 After entering upon MBTA Railroad Property:

- A. The Owner or its Contractor shall have, in their possession on the job site, the contract plans and specifications which bear the stamp of approval of the Director of Engineering for MBTA Railroad Operations or Railroad Company(s). The Owner or its Contractor shall conduct all their work according to these plans and specifications.
- B. All work shall be performed and completed in a manner fully satisfactory to the MBTA Chief Engineering Officer or authorized representative(s). Railroad Company(s) inspection of the work shall be conducted at any time and the Owner or its Contractor shall cooperate fully with the MBTA and Railroad Company(s) representatives.
- C. All equipment used by the Owner or its Contractor on MBTA Railroad Property may be inspected by the Railroad Company(s) and shall not be used if considered unsatisfactory by the Railroad Company(s) representative. Equipment of the Owner or its Contractor to be used adjacent to tracks shall be in first class condition so as to positively prevent any failure that would cause delay in the operation of trains or damage to MBTA or railroad facilities. Equipment shall not be placed or put into operation adjacent to a track without first obtaining the permission of the Railroad Company(s).
- D. Operators of such equipment must be properly licensed and may be examined by the Railroad Company(s) representative to determine their fitness. If it is determined that they are unfit to work, then the Owner or its Contractor shall remove them from MBTA Railroad Property.
- E. If the Director of Engineering for MBTA Railroad Operations deems it necessary, the Owner or its Contractor shall furnish and erect in close proximity to the site of the work a suitable, furnished shelter with lights, heat, telephone, etc., for use by Railroad Company(s) personnel providing services to the Owner's or Contractor's work.
- F. The Owner or its Contractor's work shall be performed in such manner that the tracks, train operations and appurtenances of the MBTA and the Railroad Company(s) will be safeguarded.

- G. Open excavations shall be suitably planked and safeguarded when construction operations are not in progress.
- H. Blasting will be permitted under or adjacent to tracks only after proof that blasting is required and all methods have been approved by the Director of Engineering for MBTA Railroad Operations and the Railroad Company(s). All blasting operations must comply with the MBTA's "Blasting Specifications".
- I. The Owner or its Contractor shall be fully responsible for all damages arising from their failure to comply with the requirements of these specifications. Failure to comply may result in their removal from MBTA Railroad Property, at the MBTA's sole discretion.

SECTION 2. RULES, REGULATIONS, AND REQUIRMENTS.

- 2.01 Railroad traffic shall be maintained at all times with safety and continuity, and the Contractor shall conduct all operations on, over, under, within or adjacent to MBTA Railroad Property within the rules, regulations, and requirements of the Railroad Company(s) and/or MBTA. The Contractor shall be responsible for acquainting themselves with such requirements as the Railroad Company(s) and/or MBTA may demand.
- 2.02 The Contractor shall obtain verification of the time and schedule of track occupancy from the Railroad Company(s) before proceeding with any construction or demolition work on, over, under, within or adjacent to MBTA Railroad Property. The work shall not proceed until the plans and method of procedure have been approved by the Director of Engineering for MBTA Railroad Operations or their authorized representative.
- 2.03 All work to be done on, over, under, within or adjacent to MBTA Railroad Property shall be performed by the Contractor in a manner satisfactory to the MBTA and the Railroad Company(s), and shall be performed at such times and in such manner, as to not interfere with the movement of trains or operations upon the tracks of the MBTA. The Contractor shall use all necessary care and precaution in order to avoid accidents, delays or interference with the MBTA's trains or other property.
- 2.04 The Contractor shall give written notice to the Railroad Company(s) at least twenty- one (21) days prior to the commencement of any work, or any portion of the work, by the Contractor or their subcontractors on, over, under, within or adjacent to MBTA Railroad Property, in order that necessary arrangements may be made by the Railroad Company(s) to protect railroad operations.

- 2.05 If deemed necessary by the Railroad Company(s), it may assign an inspector and/or engineer who will be placed on the work site during the time the Contractor or any subcontractor is performing work on, over, under, within or adjacent to MBTA Railroad Property. The cost and expense will be paid directly by the contracting party with an advance deposit to the Railroad Company(s), unless otherwise approved.
- 2.06 Before proceeding with any construction or demolition work, on, over, under, within or adjacent to the MBTA's Railroad Property, a pre-construction meeting shall be held at which time the Contractor shall submit for approval of the MBTA and Railroad Company(s), Drawings, computations, and a detailed description of the method for accomplishing the construction work, including methods of protecting railroad operations. Such approval shall not serve in any way to relieve the Contractor of complete responsibility for the adequacy and safety of the referenced methods.
- 2.07 During any demolition procedure, the Contractor must provide an approved shield to prohibit all debris from falling onto MBTA Railroad Property. A protective fence must be erected at both ends of the project to prohibit trespassers from entering MBTA Railroad Property.
- 2.08 Cranes, shovels, or any other equipment shall be considered to be fouling the track when located in such position that failure of same with or without load brings the equipment within the fouling limit. The Contractor's employees and equipment will not be permitted to work near overhead wires or apparatus.
- 2.09 The Contractor shall conduct their work and handle their equipment and materials so that no part of any equipment should foul an operated track or wire line without the written permission of the Railroad Company(s). When it becomes necessary for the Contractor to foul any track, they must give the Railroad Company(s) written notice of their intentions twenty-one (21) days in advance, so that if approved, arrangements may be made for proper protection of the Railroad Company(s).
- 2.10 The Contractor's equipment shall not be placed or put into operation adjacent to tracks without first obtaining permission from the Railroad Company(s). Under no circumstances shall any equipment or materials be placed or stored within fifteen (15) feet from the centerline of the closest track.
- 2.11 Materials and equipment belonging to the Contractor shall not be stored on MBTA Railroad Property without first having obtained permission from the Railroad Company(s), and such permission will be on the condition that the MBTA and/or Railroad Company(s) will not be liable for damage to such materials and equipment from any cause. The Contractor shall keep the

tracks adjacent to the site clear of all refuse and debris that may accumulate from construction operations, and shall leave the MBTA Railroad Property in the condition existing before construction commencement. Equipment repair, refueling or extended storage is prohibited on MBTA Railroad Property.

- 2.12 The Contractor shall consult the Railroad Company(s) in order to determine the type of protection required to insure safety and continuity of railroad operations. The railroad field engineer may assign track foremen, flagmen, signalmen or other employees deemed necessary for protective services by the Railroad Company(s), to insure the safety of trains and MBTA Railroad Property. The cost of same shall be paid directly by the contracting party with an advance deposit to the Railroad Company(s), unless otherwise approved.
- 2.13 The provision of such protective services, and other precautionary measures, shall not relieve the Contractor from liability for the cost of any and all damages caused by their operations.
- 2.14 The Railroad Company(s) will require protection during all periods when the Contractor is working on, over, under, within or adjacent to MBTA Railroad Property or as may be deemed necessary. When protection is required, the Contractor shall make the request in writing to the Railroad Company(s) at least twenty-one (21) days before such protection is required.
- 2.15 The Contractor shall not bill the Railroad Company(s) or MBTA for any work which they are proposing to perform, unless the Railroad Company(s) or MBTA authorizes the said work in writing. This work must be to the benefit of the MBTA or Railroad Company(s).
- 2.16 The Contractor, subcontractor and respective employees who will come within the limits of the MBTA Railroad Property, must first attend the Railroad Company(s) Safety Orientation Class. They are required to comply with the Railroad Company(s) Safety Requirements throughout the entire construction period. All costs associated with compliance of the Railroad Company(s) Safety Requirements will be at the sole expense of the Contractor and subcontractors.
 - A. The Contractor for the project must appoint a qualified person who will be designated as a Safety Representative. They must be approved by the Railroad Company(s) Safety Representative. The Contractor's designee will be responsible to give Safety Orientation to the Contractor's/subcontractor's employees who will come onto the MBTA's Railroad Property for short periods of time after the initial Safety Orientation Class has been given by the Railroad Company(s). The Contractor's designee will keep the Railroad Company(s) Safety Representative informed of the temporary employees who received Safety Orientation. The Railroad Company(s)

Safety Orientation Class will be repeated when employee turnover or groups of Contractor's and subcontractor's employees are such that another Railroad Company(s) Safety Orientation Class is justified.

- B. All Contractors shall follow established safety procedures and remain 15 feet or more from the closest rail of the closest track. When it becomes necessary for Contractors to encroach on this 15 foot limitation, the proper fouling procedures will be arranged with the Railroad Company(s).
 - C. Contractors will establish the 15 foot foul line by installing stakes and taping off the area prior to beginning work.
- 2.17 Upon completion of the work, the Contractor shall remove from the MBTA Railroad Property, all machinery, equipment, surplus materials, falsework, rubbish, temporary buildings and other property of the Contractor, or any subcontractor, and shall leave MBTA Railroad Property in a condition satisfactory to the MBTA and Railroad Company(s). Failure to comply will result in Railroad Company(s) forces restoring MBTA Railroad Property at the Contractor's expense.
- 2.18 The Contractor will pay the Railroad Company(s) directly, for all protective services unless otherwise approved. The services are performed to insure safe operation of trains when construction work would, in the Railroad Company(s) opinion, be a hazard.

SECTION 3. DEFINITION OF HAZARD

- 3.01 Protection Services will be required whenever the Contractor is performing work on, over, under, within or adjacent to MBTA Railroad Property. This will include excavating, sheeting, shoring, erection, removal of forms, handling material, using equipment which by swinging or by failure could foul the track, and when any other type of work being performed, in the opinion of the Railroad Company(s), requires such service.
- 3.02 Railroad operations will be considered subject to hazard when explosives are used in the vicinity of MBTA Railroad Property during the driving or pulling of sheeting for footings adjacent to a track, when erecting structural steel across or adjacent to a track, when operations involve swinging booms or chutes that could in any way come closer than 5 feet to the center line of a track or wire line. None of these or similar operations, shall be carried on without Railroad Company(s) protective services personnel on site.
- 3.03 A signal line or communication line shall be considered fouled and subject to hazard when any object is brought closer than ten (10) feet to any wire or cable. An electrical supply line shall be considered fouled and subject to hazard when any object is brought closer than ten (10) feet to any

wire of the line.

- 3.04 As excavation approaches pipes, conduits, or other underground structures on or adjacent to MBTA Railroad Property, digging by machinery shall be discontinued and the excavation shall continue by means of hand tools. All existing pipes, poles, wires, fences, property line markers, and other structures, which the MBTA and/or Railroad Company(s) decides must be preserved in place, shall be carefully protected from damage by the Contractor or its Owner. Should such items be damaged, they shall be restored by the Railroad Company(s), at the Owner's or Contractor's sole expense to the original condition prior to construction commencement. If any excavation is taken beyond the work limit indicated on the approved Drawings or prescribed herein, the Owner or its Contractor shall backfill and compact to the satisfaction of the Railroad Company(s) at the Contractors expense.

SECTION 4. BACKFILL

4.01 Backfilling

- A. All backfill material adjacent to any Railroad Company(s) facility shall be approved by the Railroad Company(s). Backfill material shall be free from hard lumps and clods larger than 3 inches in diameter, and free from large rocks or stumps. Uniformly fine material shall be placed next to any pipe liable to dent or break.
- B. All backfill material shall be compacted at or near optimum moisture content, in layers not exceeding 6 inches in compacted thickness by pneumatic tampers, vibrator compactors, or other approved means to the base of the railroad subgrade. Material shall be compacted to not less than 95 percent of AASHTO T 99, Method C. The Contractor will be required to supply to the job site, ballast stone (AREA #4) to be installed by the Railroad Company(s).

4.02 Certification

The Owner or its Contractor shall provide testing, through the use of a testing lab or Professional Engineer, to insure that the in place density of the backfill meets or exceeds the requirements of Section 4.01(B). Written certification of the tests shall be given to the Railroad Company(s) immediately upon completion of the test.

4.03 Alternate

In the case of an open cut crossing of the MBTA Railroad Property, the Owner or its Contractor may backfill with concrete having a three-day compressive strength of 1000 psi to the base of the track subgrade. This

may be used in lieu of providing the certification of proper compaction when using gravel backfill. The Owner or its Contractor will be required to supply to the job site, ballast stone (AREA #4) to be installed by the Railroad Company(s).

SECTION 5. CLEARANCES

- 5.01 Staging falsework or forms shall at all times be maintained with a minimum vertical clearance of 226" above top of the high rail and a minimum horizontal clearance of 15' from the center line of track.

SECTION 6. PROTECTION SERVICES

- 6.01 The MBTA shall require railroad inspection and may require railroad flagging. Prior to the start of any work on MBTA Railroad Property, the Owner or its Contractor shall submit a deposit to the amount required by the Railroad Company(s). If Railroad Company(s) expenses are greater than the amount of deposit, the Owner or its Contractor shall reimburse the Railroad Company(s) for the balance when billed, and, if the Railroad Company(s) expenses are less than the amount of deposit, the Railroad Company(s) will refund the balance to the Owner or its Contractor. The Railroad Company(s) reserves the right to request additional deposits as project work progresses.
- 6.02 If the MBTA or Railroad Company(s) determines that flagmen are necessary, the number required shall be on duty at the site during the hours of hazard described under Section 3. No work shall be performed if flagmen are required but are not on duty.
- 6.03 It shall be the responsibility of the Owner or its Contractor to keep the MBTA and Railroad Company(s) informed at all times when the Owner or its Contractor shall be working on, over, under, within or adjacent to MBTA Railroad Property and creating the hazards described under Section 3. Failure of the Owner or its Contractor to give the MBTA and Railroad Company(s) suitable advance notice of hazardous operation shall result in the shutdown of the work by the Railroad Company(s), until such time as sufficient numbers of flagmen are on duty at the site. If this becomes a repeat occurrence, the Contractor will be removed from the project.
- 6.04 The Railroad Company(s) will make its best effort to provide protective services personnel. Should the situation arise where such personnel are not available, Contractor operations must cease. The Railroad Company(s) is not liable for any monetary claims incurred during the absence of protective services personnel.

SECTION 7. INSPECTION

- 7.01 If deemed necessary by the Director of Engineering for MBTA Railroad Operations, the MBTA will furnish and assign an engineer(s) for inspection and the Railroad Company(s) will furnish an appropriate inspector for general inspection purposes or for general protection of MBTA Railroad Property and operations during construction. All protection services will be at the expense of the Owner or its Contractor.

SECTION 8. EXTRA-CONTRACT SERVICES

- 8.01 Temporary and permanent changes of tracks and all railroad utilities made necessary by the work of the Contractor, will be made by the MBTA or Railroad Company(s) at the expense of the Owner or its Contractor.
- 8.02 All other changes made or services furnished by the Railroad Company(s), at the request of the Owner or its Contractor, will be at the Owner's or its Contractor's expense.



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INSURANCE SPECIFICATIONS

The insurance outlined in these Specifications is required of the Owner or Contractor, and shall be provided by or in behalf of all subcontractors performing any portion of the work. The Owner or Contractor shall be responsible for any modifications, deviations or omissions of the required insurance as it applies to subcontractors.

All insurance policies, unless otherwise specified under Railroad Protective Liability Insurance, are to be written either on an occurrence basis or, if a claims-made form, applicable renewals must have a date retroactive to the construction start date and shall be maintained in force for one year following the acceptance of the work by the MBTA or its duly authorized representative.

With the exception of Railroad Protective Liability Insurance, all insurance policies must name the MBTA as an additional insured as its interest appears and waive any rights of subrogation against the MBTA.

Certificates of Insurance evidencing (1) either the claims-made or occurrence form coverage, (2) work description/location, (3) Owner or Contractor's corporate name, and (4) individual, company, government agency or municipality for which the work is being performed, are to be furnished to the MBTA prior to work commencement, and within fifteen (15) days of expiration of the insurance coverage, when applicable.

All policies must contain a minimum thirty (30) day written notice of cancellation clause, and provide that the Insurance Company shall notify the Owner, Contractor, MBTA and Railroad Company(s), via registered mail, of any cancellation, change or expiration of the policy.

Original Insurance Certificate(s) shall be received and approved by the MBTA before the Owner or Contractor will be allowed entry upon MBTA Railroad Property. Certificates, including any required endorsements, shall be furnished to the MBTA, c/o Risk Manager, Office of the Treasurer-Controller, Ten Park Plaza, Room 8450, Boston, MA 02116, and shall provide stated coverage and a provision that Notice of Accident (occurrence) and Notice of Claim shall be given to the Insurance Company as soon as practicable after notice to the insured(s).

Original Insurance Binders reflecting Railroad Protective Insurance shall be received and approved by the MBTA and the appropriate Railroad Company(s) prior to entry upon MBTA Railroad Property. Mailing addresses for transmittal of original Insurance Binders to the named insured Railroad Company(s) are contained on Page Four of these Specifications.

The Owner or Contractor shall indemnify, defend and save harmless the MBTA and the appropriate Railroad Company(s) from and against any and all liabilities, losses (including losses of revenue), claims, costs, damages and expenses (including reasonable attorney's fees and expenses) that may be asserted against or incurred by the MBTA and the Railroad Company(s) arising from or as a result of the Owner or Contractor's work, or its use of adjacent land. Said indemnification shall include claims, whether covered by insurance or not, including, but not limited to

Workers Compensation and similar insurance.

The Owner or Contractor shall maintain, during the life of the contract, from company (s) authorized to do business in the Commonwealth of Massachusetts and satisfactory to the MBTA:

A. COMMERCIAL GENERAL LIABILITY INSURANCE for personal injury, bodily injury and property damage in an amount not less than \$1,000,000 per occurrence and \$3,000,000 in the aggregate covering all work performed on over or adjacent to MBTA Railroad Property (the "work"), including:

1. All operations;
2. Contractual liability;
3. Coverage for the so-called "X, C, U" hazards, i.e., collapse of building, blasting, and damage to underground property;
4. Asbestos abatement, when applicable.

B. AUTOMOBILE LIABILITY INSURANCE including the use of all vehicles owned, non-owned, leased and hired, in an amount not less than \$1,000,000 combined single limit covering all the work.

C. WORKER'S COMPENSATION INSURANCE including Employees, Liability Insurance, as provided by Massachusetts General Laws, Chapter 152, as amended, covering all the work.

D. UMBRELLA LIABILITY COVERAGE in an amount not less than \$10,000,000 per occurrence covering all the work.

E. HAZARDOUS MATERIALS INSURANCE if the work involves hazardous materials, the following coverage is required:

1. **Pollution Liability insurance** for sudden and gradual occurrences in an amount not less than \$1,000,000 per occurrence and \$5,000,000 in the aggregate arising out of the work, including but not limited to all hazardous materials identified in the contract.
2. When applicable, the Owner or Contractor shall designate the disposal site and furnish a Certificate of Insurance from the Disposal Facility for Environmental Impairment Liability Insurance for (a) sudden and accidental occurrences in an amount not less than \$3,000,000 per occurrence and \$6,000,000 in the aggregate and (b) non-sudden occurrences in an amount not less than \$5,000,000 per occurrence and \$10,000,000 in the aggregate.

3. Certificates of insurance shall clearly state the hazardous materials exposure work being performed.

F. RAILROAD PROTECTIVE LIABILITY INSURANCE is specifically designed for insuring Railroads, and is purchased by the Owner or Contractor in the name of the MBTA and the Railroad Company(s). **The Railroad Company(s) is the named insured on the policy.** Railroad Protective Liability Insurance is required for any work performed within fifty (50) feet from center line of the nearest railroad track; it is not a substitute for any types of insurance outlined in these Specifications. Required limits are:

Bodily injury: not less than \$5,000,000 for all damages arising out of bodily injuries to or death of one person, and subject to that limit for each person, a total limit of \$6,000,000 for all damages arising out of bodily injury to or death of two or more persons in any one accident;

Property Damage: not less than \$10,000,000 or all damages arising out of injury to or destruction of MBTA property in any one accident, and subject to that limit per accident, a total of \$10,000,000 in the aggregate for all damages arising out of injury to or destruction of MBTA property.

Questions regarding insurance should be directed to MBTA's Risk Manager at (617) 222-3064.

Questions regarding train counts and train speeds should be directed to the appropriate Railroad Company(s) listed on Page Four.

PROOF OF INSURANCE

MAILING ADDRESSES:

MBTA

Risk Manager
c/o Treasurer-Controller
10 Park Plaza
Boston, MA 02116
cc: Massachusetts Realty Group

National Railroad Passenger Corporation (Amtrak)

Boston Division Office
c/o Division Engineer
2 South Station 5th Floor
Boston, MA 02110

CSX Transportation Inc.

500 Water St.
Jacksonville, FL 32202

Bay Colony Railroad Corporation

General Manager
4 Freight House Road
East Wareham, MA 02571

Boston and Maine Corporation
and Springfield Terminal Railway
Co.

Chief Engineer
402 Amherst Street
Suite 300
Nashua, NH 03063-1287

Providence and Worcester
Railroad Company

P. O. Box 1188
Worcester, MA 01601

Keolis Commuter Services

Chief Engineering Officer
470 Atlantic Ave.
Boston, MA 02110



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IV

PIPELINE OCCUPANCY SPECIFICATIONS

INDEX

<u>SUBJECT</u>	<u>PAGE</u>
 SECTION 1. <u>GENERAL REQUIREMENTS</u>	
1.01 Description of Work and Location	1
1.02 License to Enter Railroad Company(s) Property	1
1.03 Work on Railroad Property	1
1.04 Coordination	3
1.05 Layout of Work	3
1.06 Indemnification	3
1.07 Scientific or Historic Artifacts	3
1.08 Record Documents	4
 SECTION 2. <u>SUBMITTALS</u>	
2.01 Application for Occupancy	4
2.02 Submission of Construction Drawings and Specifications	4
 SECTION 3. <u>TEMPORARY FACILITIES AND CONTROLS</u>	
3.01 Requirements of Regulatory Agencies	7
3.02 Installation and Coordination - General	7
3.03 Sanitary Facilities	8
3.04 Light and Power	8
3.05 Temporary Water	8
3.06 Temporary Traffic Controls	8

<u>SUBJECT</u>	<u>PAGE</u>
3.07 Temporary Work and Storage Areas	8
3.08 Pollution Abatement Controls	9
3.09 Protection of Persons and Properties	10
3.10 Vermin Control	11
3.11 Rubbish and Debris Removal	11
 <u>SECTION 4. PIPELINE OCCUPANCY GENERAL CRITERIA</u>	
4.01 Method of Installation	12
4.02 General Requirements	13
4.03 Inspection and Testing	14
4.04 Cathodic Protection	14
4.05 Soil Investigations	15
4.06 Ground Stabilization	16
4.07 Support of Tracks	16
4.08 Geotechnical Monitoring	17
4.09 Pipelines On Bridges	18
4.10 Bonding and Grounding of Pipelines In Electrified Territory	18
4.11 Abandoned Pipelines or Facilities	19
4.12 Drainage	19
 <u>SECTION 5. CARRIER PIPE</u>	
5.01 Design Criteria - General	20
5.02 General - Products	20

5.03	Oil and Gas Pipes	21
5.04	Cast Iron Pipe	21
5.05	Vitrified Clay Pipe	21
5.06	Corrugated Metal Pipe	21
5.07	Asbestos Cement Pipe	21
5.08	Other	22
5.09	Shut-Off Valve	22
5.10	Signs	22
5.11	Installation - Execution	22

SECTION 6. CASING PIPE

6.01	Design Criteria - General	23
6.02	Protection at Ends of Casing	24
6.03	Vents	24
6.04	Steel Pipe - Products	25
6.05	Cast Iron Pipe	25
6.06	Corrugated Metal Pipe and Corrugated Structural Plate Pipe	25
6.07	Reinforced Concrete Pipe	25
6.08	Tunnel Liner Plates	25
6.09	Depth of Installation - Execution	26
6.10	Method of Installation	26
6.11	Construction	27

<u>PLATES</u>	<u>PAGE</u>
Plate I Pipe Crossing	33
Plate II Pipe Crossing	34
Plate III Longitudinal Occupancy	35
Plate IV Pipe Crossing Data Sheet	35
Plate V Table of Minimum Wall Thickness	37

SECTION 1. GENERAL REQUIREMENTS

1.01 DESCRIPTION OF WORK AND LOCATION

These specifications apply to the design and construction of pipelines carrying flammable and non-flammable substances and to casings over 4-inches in diameter containing wires and cables, under, across or along MBTA Railroad Property, facilities and tracks.

1.02 LICENSE TO ENTER RAILROAD PROPERTY

- A. Entry upon MBTA Railroad Property for the purpose of conducting surveys, field inspections, obtaining soil information, or any other purpose associated with the design and engineering of the proposed occupancy, will be authorized by an MBTA License for Entry (See "Guidelines and Procedures for Construction on MBTA Railroad Property").
- B. Issuance of the License does not constitute authority to proceed with the actual construction.

1.03 WORK ON RAILROAD PROPERTY

- A. The safety and continuity of train operations shall be the first priority. The Applicant shall arrange the work so that the trains will be protected and safeguarded at all times. Whenever the work may affect the safety and movement of trains, the method, sequence and time schedule of performing such work shall be submitted to the Director of Engineering for MBTA Railroad Operations or their authorized representative for approval.
- B. The Applicant waives all claims against the Railroad Company(s) and/or the MBTA for delays or any interference occasioned by railroad traffic or railroad maintenance.
- C. All Applicant-designed temporary construction on MBTA Railroad Property shall be designed in accordance with the appropriate railroad criteria and all construction performed on, over, under, within or adjacent to MBTA Railroad Property will be subject to the inspection and approval of the Railroad Company(s) and/or MBTA.
- D. A minimum of fourteen (14) days advance written notice shall be given to the Railroad Company(s) prior to construction related activities.
- E. The Railroad Company(s) will furnish such qualified flagmen, signalmen or protection men as may be required to insure complete

protection of train operations and railroad facilities. The need for this type of service will be determined by the Railroad Company(s) on the basis of railroad regulations and the Applicant's approved construction schedule. No work shall proceed without proper protection on the site.

- F. All expenses incurred in connection with protection of railroad facilities by Railroad Company(s) employees will be borne by the Applicant. Billings for such service or expense, including labor, materials and equipment will be made directly to the Applicant for payment.
- G. During construction, railroad traffic shall be maintained at all times without interruption, except when approved in advance, in writing, by the Director of Engineering for MBTA Railroad Operations or their authorized representative.
- H. All construction operations shall be conducted so as not to interfere with, interrupt, or endanger the operation of trains, nor damage, destroy, or endanger the integrity of railroad facilities. All work on or near MBTA Railroad Property shall be conducted in accordance with the Railroad safety rules and regulations. The Applicant shall secure and comply with the Railroad safety rules and shall give written acknowledgment to the Railroad Company(s) that they have been received, read, and understood by the Applicant and their employees. Construction operations will be subject to Railroad Company(s) inspection at any and all times.
- I. All cranes, lifts, or other equipment that will be operated in the vicinity of the MBTA's electrification and power transmission facilities shall be electrically grounded as directed by the Railroad Company(s).
- J. At all times when the work is progressing, a field supervisor for the work with no less than twelve (12) months experience in the operation of the equipment being used shall be present. Certification of the above must be submitted to the Railroad Company(s).
- K. Whenever equipment or personnel are working closer than fifteen (15) feet to the closest rail of an adjacent track, that track shall be considered as being obstructed. As best possible, all construction operations shall be conducted no less than this distance. Construction operations closer than fifteen (15) feet to the closest rail of a track shall be conducted only with the permission of, and as directed by, a qualified Railroad Company(s) employee present at the work site.
- L. Crossing of tracks at grade by equipment and personnel is prohibited except by prior arrangement with, and as directed by, the Director of

Engineering for MBTA Railroad Operations or their authorized representative.

- M. All tunneling, jacking and boring operations within railroad influence lines will be done on a 24 hour per day basis to minimize Railroad exposure to construction hazards.

1.04 COORDINATION

The Applicant shall coordinate the work with their Contractors, subcontractors, utility companies, governmental units, and any affected Railroad Company(s) with regard to site access, establishment and use of temporary facilities, work schedules, and other elements of the specified work which require interfacing with others.

1.05 LAYOUT OF WORK

The Applicant shall lay out their work true to lines and grades indicated on the Drawings and shall be responsible for all measurements in connection therewith. The Applicant will be held responsible for the execution of the work to such lines and grades indicated on the approved construction Drawings or such other lines and grades as may be directed or established by the Director of Engineering for MBTA Railroad Operations or their authorized representative.

1.06 INDEMNIFICATION AND INSURANCE

See requirements in "Guidelines and Procedures for Construction on MBTA Railroad Property" and "Insurance Specifications."

1.07 SCIENTIFIC OR HISTORIC ARTIFACTS

The Applicant shall immediately notify the Director of Engineering for MBTA Railroad Operations of the discovery of scientific or historical artifacts and shall protect same until identified and removed by the appropriate Authorities exercising jurisdiction.

1.08 RECORD DOCUMENTS

- A. The Applicant shall furnish the Railroad Company(s) and the MBTA with one reproducible "As Built" copy of each approved Construction Drawing, marked to indicate all changes and deviations from same.
- B. All project record documents shall be received and accepted by the MBTA and the Railroad Company(s) prior to final inspection.

SECTION 2. SUBMITTALS

2.01 APPLICATION FOR OCCUPANCY

The Applicant must agree, upon approval of the construction details by the Director of Engineering for MBTA Railroad Operations, to execute the MBTA Pipeline Occupancy Agreement and pay any required fees and/or rentals outlined therein. Refer to "Guidelines and Procedures for Construction on MBTA Railroad Property" for application policy.

2.02 SUBMISSION OF CONSTRUCTION DRAWINGS AND SPECIFICATIONS

- A. Six (6) sets of Drawings and specifications for proposed pipeline occupations shall be submitted to the AGM for Real Estate and Asset Development and meet the approval of the Railroad Company(s) and the MBTA prior to the start of construction. These plans are to be prepared in sizes as small as possible and are to be folded to an 8-1/2 inch by 11-inch size (folded dimensions) with a 1-1/2 inch margin on the left side and a 1-inch margin on the top.
 - 1. After folding, the title block and other identification of the Drawings shall be visible at the lower right corner, without the necessity of unfolding. Each Drawing shall bear an individually identifying number and an original date, together with subsequent revision dates, clearly identified on the Drawing.
 - 2. All Drawings are to be individually folded or rolled and where more than one Drawing is involved, they shall be assembled into complete sets before submission to the MBTA.
- B. Drawings shall be to scale and show the following (see attached Plates).
 - 1. Plan view of proposed pipeline in relation to all railroad facilities.
 - 2. Location of pipe (in feet) from nearest railroad milepost, centerline of a railroad bridge (giving bridge number), or centerline of an existing or former passenger station, or other fixed point. In all cases, the name of the City or Town and County in which the proposed facilities are located must be shown.
 - 3. Profile of ground on centerline of pipe from field survey showing relationship of pipe and casing to ground level, tracks and other facilities. For longitudinal occupations, the profile of adjacent track(s) must be shown.

4. All MBTA property lines. If pipeline is in a public highway, the limits of the right-of-way for the highway shall be clearly indicated with dimensions from centerline.
 5. The angle of crossings in relation to centerline of tracks.
 6. Location of valves or control stations of the pipeline.
 7. "Pipe Crossing Data Sheet" completed and out on Plan.
- C. The Drawing must be specific (both on MBTA Railroad Property and under tracks that are not on MBTA Railroad Property) as to:
1. Method of installations.
 2. Size and material of casing pipe.
 3. Size and material of carrier pipe.

These items shall not have an alternative.

- D. Once an application is approved by the Director of Engineering for MBTA Railroad Operations or their authorized representative, proposed variances from the approved plans, specifications, method of construction, etc., will be resubmitted for approval.
- E. Location and dimensions of jacking, boring, or tunneling pits shall be shown with details of their sheeting and shoring. If the bottom of the pit excavation nearest the adjacent track intersects a line from a point 5.5 feet horizontally from center line of adjacent track at the plane of the base of fall drawn on a slope of 2 horizontal to 1 vertical, submit design and details of the pit construction to the MBTA for approval complete with computations prepared by a Registered Professional Engineer. In any event, the face of the pit shall be no less than 25 feet from adjacent track, unless otherwise approved by the Director of Engineering for MBTA Railroad Operations or their authorized representative. Pits shall be fenced, lighted, and otherwise protected as directed by the Railroad Company(s).
- F. All Drawings and computations, including those submitted by Contractors, must bear the seal of a Registered Professional Engineer.
- G. Computations for all structures involving the support or protection of railroad track, embankment and facilities must be prepared by and bear the seal of a Registered Professional Engineer and shall be submitted within the construction Drawings.
- H. When computer calculations are included with design calculations, the following documentation shall be furnished:

1. A synopsis of the computer program(s) stating briefly required input, method of solution, approximations used, second order analysis incorporated, specifications or codes used, cases considered, output generated, extent of previous usage of certification of program(s) and program(s) author.
 2. Identification by number, indexing and cross-referencing of all calculation sheets, including supplemental "long-hand" calculation sheets.
 3. Fully identified, dimensioned, and annotated diagram of each member or structure being considered.
 4. Clear identification and printing of all input and output values, including intermediate values if such values are necessary for orderly review.
 5. Identification of the processing unit, input/output devices, storage requirements, etc., if such supplemental information is significant and necessary for evaluation of the submittal.
- I. Specifications shall conform to Construction Specifications Institute (CSI) 16 Division, 3-part Section Format.
- J. If other than American Railway Engineering Association (AREA), American Society for Testing and Materials (ASTM), or American National Standards Institute (ANSI) specifications are referred to for design, materials or workmanship on the Construction Drawings and specifications for the work, then copies of the applicable sections of such other specifications referred to shall accompany the Construction Drawings and specifications for the work.

SECTION 3. TEMPORARY FACILITIES AND CONTROLS

3.01 REQUIREMENTS OF REGULATORY AGENCIES

Applicant shall:

- A. Obtain and pay all costs for required permits for installation and maintenance of temporary facilities and controls.
- B. Comply with all applicable Federal, State and local codes, regulations and ordinances.
- C. Comply with regulations and requirements of all utility or service companies from which temporary utilities or services are obtained, and pay all costs incurred therewith.

3.02 INSTALLATION AND COORDINATION - GENERAL

Applicant shall:

- A. Install all temporary facilities and controls in a neat and orderly manner.
- B. Make all temporary facilities structurally and functionally sound throughout.
- C. Construct temporary facilities and controls to give continuous service and to provide safe working conditions.
 - 1. Enforce conformance with applicable standards
 - 2. Enforce safe practices.
- D. Modify, extend or relocate temporary facilities and controls as work progress requires.
- E. Locate temporary facilities and controls to avoid interference with, or hazards to:
 - 1. Work or movement of railroad personnel or traffic.
 - 2. Vehicular traffic.
 - 3. General Public.
 - 4. Work of other contracts.
 - 5. Railroad Passengers.
- F. Obtain easements as may be required across non-MBTA Railroad Property.
- G. Provide materials for temporary facilities and controls for the purpose intended and shall not violate requirements of applicable codes and shall not create unsafe conditions.

3.03 SANITARY FACILITIES

Prior to the start of work, the Applicant shall furnish necessary toilet conveniences, secluded from public observation. They shall be kept in a clean and sanitary condition and comply with the requirements and regulations of the area in which the work is performed.

3.04 LIGHT AND POWER

Applicant shall make their own arrangements for obtaining temporary light and power as required for the work, and shall maintain such temporary facilities in a proper and safe condition, including compliance with applicable codes.

3.05 TEMPORARY WATER

Applicant shall make their own arrangements for obtaining all temporary water service as required for the work.

3.06 TEMPORARY TRAFFIC CONTROLS

Applicant shall cooperate with the directives of the MBTA and/or Railroad Company(s) regarding vehicular traffic control and provide any temporary controls or devices required to eliminate or minimize congestion or obstruction of vehicular traffic caused by the work, including use of designated routes of ingress and egress from the work area.

3.07 TEMPORARY WORK AND STORAGE AREAS

- A. The areas designated by the MBTA as the temporary parking, work and storage area(s) will be provided to the Applicant in accordance with the terms of the MBTA License Agreement.
- B. All designated temporary parking, work and storage areas used by the Applicant shall be restored to their original condition prior to completion of the work, subject to inspection and approval of the MBTA and the Railroad Company(s).

3.08 POLLUTION ABATEMENT CONTROLS

Applicant shall:

- A. Conduct operations in a manner to minimize pollution of the environment surrounding the area of work by every means possible. Specific controls shall be provided as follows:
 - 1. Vehicles: All vehicles and material transport trucks leaving the site and entering paved public streets shall be cleaned of mud and dirt clinging to the body and wheels of the vehicle. Trucks arriving at or leaving the site with materials shall be loaded in a manner which will prevent dropping of materials or debris on the streets. Spills of materials in public areas shall be removed immediately at no cost to the MBTA or Railroad Company(s).

2. Waste Materials: No waste or erosion materials shall be allowed to enter natural or man-made water or sewage removal systems. Erosion materials from excavations, borrow areas or stockpiled fill shall be contained within the work area. The Applicant shall develop methods for control of waste and erosion which shall include such means as filtration, settlement and manual removal to satisfy the above requirements. Do not dispose of machinery lubricants, fuels, coolants and solvents on the site. If hazardous waste is encountered, the Applicant shall dispose of it in accordance with all federal, state and local codes. Verification of proper disposal must be provided, in writing, to the MBTA and the Railroad Company(s).
 3. Burning: No burning of waste shall be allowed without prior written permission. In cases where permission is granted, burning shall be conducted in accordance with the regulations of the appropriate jurisdictional agency.
 4. Dust Control: The Applicant shall at all times control the generation of dust by their operations. Control of dust is mandatory and shall be accomplished by water sprinkling or by other methods approved by the MBTA or Railroad Company(s).
 5. Noise Control: The Applicant shall take every action possible to minimize the noise caused by their operation. When required by agencies having jurisdiction, noise producing work shall be performed during less sensitive hours of the day or week as directed by the MBTA or Railroad Company(s) or as required by local ordinance.
 6. Environmental: All local and state environmental laws will be strictly adhered to. All applications, permits, licenses, approvals, etc., will be the sole responsibility of the Applicant.
- B. Submit a program for pollution control with applicable licenses and permits for all piping carrying non-potable liquids, gases or other pollutants.

3.09 PROTECTION OF PERSONS AND PROPERTY

A. Safety Requirements

1. The Applicant must adhere to the most stringent provisions of the applicable statutes and regulations of the political subdivision in which the work is being performed. The Applicant must also observe the Department of Labor-

Occupational Safety, Health Administration provision, pertaining to the safe performance of the work, and further, the methods of performing the work must not involve undue danger to the personnel employed thereon, Railroad Company(s) employees, the public, or to public and private property. Should charges of violation of any of the above be issued to the Applicant in the course of the work, a copy of each charge shall immediately be forwarded to the Railroad Company(s). The Applicant shall pay all fines and penalties levied against him.

2. The Applicant shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection. This includes posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.
- B. Safety of Persons and Property - The Applicant shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:
1. All employees on the work site and all other persons who may be affected.
 2. All materials and equipment, whether in storage on or off the site, under the care, custody or control of the Contractor or any of their subcontractors.
 3. Other property at the site or adjacent thereto, including walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction. Any damage to such items shall be restored to original condition by the Applicant at no cost to the MBTA or Railroad Company(s).

C. First Aid

The Applicant shall maintain adequate first aid supplies at the site as prescribed by Federal, State or Local codes and regulations.

D. Use of Explosives

Non blasting methods are preferred. See "Blasting Specifications."

E. Site Security

The Applicant shall:

1. Maintain a secure work site protecting the MBTA and the Railroad Company(s) interests and property from claims arising from trespass, theft and vandalism.
2. Permit access to the work site only to employees, Contractors and those persons having business related to the work.
3. Provide security measures as required to protect Contractor or subcontractor's tools, equipment and property from damage, theft or vandalism.
4. Assume all costs for any MBTA and/or local police details required by the work.

3.10 VERMIN CONTROL

- A. Do not permit food scraps, lunch bags, food wrappers or other items which would attract rats or other vermin to be left lying around the site. Deposit such items in closed, rat-proof metal containers for disposal on a regular basis.
- B. The Applicant must provide vermin control as required by the MBTA or Railroad Company(s).

3.11 RUBBISH AND DEBRIS REMOVAL

- A. Rubbish and debris resulting from the work must be neatly piled in a single location and legally disposed of at least once a week. If rubbish or debris interferes with railroad activities, or creates a fire or safety hazard, it must be removed on a more frequent basis.
- B. Volatile waste such as mineral spirits, oil, or paint thinner shall not be disposed of in storm or sanitary drains, streams or waterways or any location upon the site.

SECTION 4. PIPELINE OCCUPANCY GENERAL CRITERIA

GENERAL:

4.01 METHOD OF INSTALLATION:

- A In a public way:
 1. No work shall be done without a Railroad Company(s) Inspector present.
 2. Open cuts will not be allowed in or immediately adjacent to an at

grade crossing. Sleeves will be installed by the jerking method, unless otherwise approved by the Director of Engineering for MBTA Railroad Operations.

3. Jerking is the preferred method of installation in or immediately adjacent to and at grade crossing. The sleeve may be installed by the open cut method with the Applicant paying for the complete rebuilding of the crossing, pending approval of the Director of Engineering for MBTA Railroad Operations. Approval will be given only under very unusual circumstances.
4. Jacking is the preferred method of installation in or immediately adjacent to and at grade crossing scheduled for rebuilding. The sleeve may be installed by the open cut method within seven (7) calendar days of the scheduled date of the crossing reconstruction. In the case of any open cut, strict adherence shall be made to the backfill specifications which provide the MBTA with written certification from a testing lab or Professional Engineer, that the backfill density requirements of the MBTA specifications have been met or exceeded.

B. Not within a Public Way:

The preferred method of crossing the railroad is by jacking of a pipe sleeve under the railroad. Only upon written request, will an alternate of open cut be given consideration. The engineering decision shall be based upon, but not limited to, the following: (1) track usage, (2) depth of cut, (3) soil conditions, (4) physical restraints. In the event an open cut is allowed, the following items shall be adhered to, and (5) any other circumstances which may necessitate an open cut.

1. The installation is to be a continuous operation and performed according to an MBTA approved schedule.
2. No work shall be done without a Railroad Company(s) Inspector present.
3. MBTA backfill specifications by the Owner or its Contractor.
4. The Owner or its Contractor may be required to provide a non-refundable lump sum payment for "after the fact maintenance." The determination of this amount is based on the individual situation. No work will be allowed until this payment is received. This payment is not to be confused with payments for Drawings and specification review, flagging, inspection, etc. (also required from the Owner or its Contractor before they enter upon MBTA property.)

4.02 GENERAL REQUIREMENTS

- A. Pipelines under or across MBTA tracks on rights-of-way shall be encased in a larger pipe or conduit called the casing pipe as indicated in Plate II.
- B. Casing pipe will be required for all pipelines carrying oil, gas, petroleum products, or other flammable, highly volatile substances which, from their nature or pressure, might cause damage if escaping on or near MBTA Railroad Property.
- C. For non-pressure sewer or drainage crossings where the installation can be made without interference to railroad operations, the casing pipe may be omitted when the pipe strength is capable of withstanding railroad loading. This type of installation must be approved by the Director of Engineering for MBTA Railroad Operations.
- D. The casing pipe shall be laid across the entire width of the right-of-way. Casing pipe shall extend beyond the right-of-way when the right-of-way line on either side of the tracks is less than the minimum length of casing specified in Section 6, Para. 6.01(E).
- E. Pipelines laid longitudinally on railroad right-of-way shall be located in accordance with Plate III. If located within 25 feet of the closest rail of any track or closer than 45 feet to nearest point of any bridge, building or other structure, the carrier pipe shall be encased.
- F. Where practicable, pipelines shall be located to cross the tracks at approximate right angles, but preferably at not less than 45 degrees.
- G. Pipelines shall not be placed within a culvert, under railroad bridges, or closer than 45 feet to any portion of a railroad bridge, building, or other structure, except in special cases, and then by special design, as approved by the Director of Engineering for MBTA Railroad Operations.
- H. Pipelines carrying liquefied petroleum gas shall, where practicable, cross the railroad where tracks are carried on embankment.
- I. Any replacement or modification of an existing carrier pipe and/or casing shall be considered a new installation, subject to the requirements of these Specifications.
- J. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, the higher degree so prescribed shall be deemed a part of these Specifications.

- K. Pipelines and casings shall be suitably insulated from underground conduits carrying electric wires on MBTA Railroad Property.

4.03 INSPECTION AND TESTING

For pipelines carrying flammable or hazardous materials, ANSI Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility on MBTA Railroad Property, except that proof-testing of strength of carrier pipe shall be in accordance with the requirements of ANSI Code B 31.4, as applicable, for all pipelines carrying all liquefied petroleum gas, natural or manufactured gas, and other flammable substances.

4.04 CATHODIC PROTECTION

- A. Cathodic protection shall be applied to all pipelines and casings carrying flammable substances.
- B. Where casing and/or carrier pipe is cathodically protected by other than anodes, the Director of Engineering for MBTA Railroad Operations shall be notified and suitable testing shall be made. This testing shall be witnessed by the Railroad Company(s) to insure that other railroad structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, current issue by the National Association of Corrosion Engineers.

4.05 SOIL INVESTIGATIONS

- A. Soil borings (or other soil investigations approved by the Railroad Company(s)) will be performed to determine the nature of the underlying material for all pipe crossings under tracks. See Test Boring Specifications.
- B. Borings shall be made on each side of the tracks, on the centerline of the pipe crossing, and as close to the tracks as practicable.
- C. Soil borings shall be in accordance with the current issue of the American Railway Engineering Association Specifications, Chapter 1, Part 1, "Specifications for Test Borings". Soils shall be investigated by the split-spoon and/or thin-walled tube method and rock shall be investigated by the Boring method specified therein.
- D. Soil boring logs shall clearly indicate all of the following:
 - 1. Boring number as shown on boring location Drawing.

2. Elevation of ground at boring, using same datum as the pipeline Construction Drawings.
 3. Description or soil classification of soils and rock encountered.
 4. Elevations or depth from surface for each change in strata.
 5. Identification of where samples were taken and percentage of recovery.
 6. Location of ground water at time of sampling and, if available, subsequent readings.
 7. Natural dry density in lbs./sq.ft. for all strata.
 8. Unconfined compressive strength in tons/sq.ft., for all strata.
 9. Water content (percent). Liquid limit (percent) and plastic limit (percent).
 10. Standard penetration in blows/ft.
- E. The location of the carrier pipe and casing shall be superimposed on the boring logs before submission to the Director of Engineering for MBTA Railroad Operations.
- F. Soil investigation by auger, wash, or rotary drilling method is not acceptable.
- G. Soil boring logs shall be accompanied by a Drawing drawn to scale showing location of borings in relation to the tracks and the proposed pipe location, the elevation of around surface at each boring, and the elevation of the base of rail of the tracks.

4.06 GROUND STABILIZATION

Soil stabilization shall take place prior to the start of jacking. Stabilization shall be achieved by dewatering, grouting or a combination of both to maintain the stability of the face of the heading.

- A. The Owner or its Contractor shall lower and maintain the ground water level a minimum of two (2) feet below the invert at all times during construction by well points, vacuum well points, or deep wells to prevent inflow of water and/or soil into the heading. Ground water observation wells shall be installed in the area to be dewatered to demonstrate that the dewatering requirements are being complied with.
- B. The grouting Contractor shall be a specialist in the field with a minimum

of five (5) continuous years of successfully grouting soils. All granular soils (silty sands, sand or sand and gravel) shall be stabilized by injection of a cement or chemical grout from the ground surface or from the pipe heading. The stabilization shall extend as far as necessary outside the periphery of the casing pipe in order to maintain a stable face at the heading.

- C. Railroad Company(s) forces will survey the crossing prior to, during and after construction. If it is necessary to align or surface the tracks as a result of construction, the Railroad Company(s) will perform the work at the expense of the Owner or the Owner's Contractor.

4.07 SUPPORT OF TRACKS

- A. When jacking, boring, or tunneling, temporary track support structures shall be installed. The track support structures shall be provided by the Applicant and installed by the Railroad Company(s) at the Applicant's expense. The Contractors proposed type of temporary track support structures shall be subject to the approval of the Railroad Company(s)
- B. All work involving rail, signals, ties and other track material will be performed by the Railroad Company(s) at the Applicant's expense.
- C. The Applicant shall deliver the track support structures to a site approved by the Railroad Company(s). Provisions for unloading shall be provided by the Applicant at no expense to the Railroad Company(s) and the Applicant shall provide the necessary labor to handle the material for pre-installation inventory.

4.08 GEOTECHNICAL MONITORING

THE FOLLOWING SPECIFICATIONS ARE REQUIRED FOR ALL PIPE JACKING OPERATIONS.

- A. Jacking shall be performed on a continuous basis, 24 hours per day, and 7 days per week.
- B. The monitoring points shall be set up one week before the jacking operation begins. The MBTA and Railroad Company(s) shall be notified. Elevation readings shall begin two days prior to the start of jacking and continue for a minimum of two weeks after the completion of the jacking operation. Initial readings immediately after any surfacing operations shall serve as new baseline figures. All future elevation readings shall be compared to the adjusted baseline. If the

track deviates to a condition not acceptable to the MBTA or Railroad Company(s), corrections shall be made at the proponent's expense.

- C. Elevation readings shall be taken from the top rail of each track.
- D. Elevation readings shall be taken every four hours or two times per shift, i.e., six times per day. The readings shall be faxed to the MBTA and Railroad Company(s) on a daily basis and all information is to be presented in legible print. Additional readings may be required by the MBTA or Railroad Company(s).
- E. Stations shall be spaced at 15-1/2 foot intervals. The number of stations required shall be determined by the depth of the pipe. There shall be a minimum of two stations on either side of the centerline jacking. Additional stations may be required at the discretion of the MBTA or Railroad Company(s),
- F. Elevation readings must show the date, time, weather conditions and temperature. Each reading must also provide the following information: track number, compass direction, station number, base elevation (with date), static elevation, change in elevation (recorded in hundredths and in inches), dynamic reading and total deflection in inches. See sample sheet attached.
- G. Station "0" shall be located at the centerline of the pipe jacking with Stations 1 and being to the right and Stations -1 and -2 being to the left when standing in the gauge of the near track and looking at the receiving pit. In multiple track areas the stations as determined herein are to be carried across each track perpendicular to the near track.
- H. Elevation readings taken from the top of the rail for static measurement and the dynamic readings shall be combined and the sum compared to the adjusted baseline. This reading will demonstrate the difference in elevation caused by the jacking operation.
- I. The MBTA requires that the truck be maintained at all times within established criteria for the specific track classification. At the completion of the project the requirement for tamping and realigning the tracks, caused by the settlement from the construction activity, remains with the Contractor for the duration as specified by the MBTA in their initial review of the work plans. This tamping and track realignment will be performed by the MBTA or Railroad Company(s) at the sole expense of the Contractor.

4.09 PIPELINES ON BRIDGES

- A. Pipelines carrying flammable or non-flammable substances which by their nature might cause damage if escaping on or near railroad facilities or personnel shall not be installed on bridges over railroad tracks or bridges carting railroad tracks.
- B. The Director of Engineering for MBTA Railroad Operations may approve such an installation when it is demonstrated that no practicable alternative is available.
- C. When allowed by the Director of Engineering for MBTA Railroad Operations, pipelines on bridges shall be located in a way to minimize the possibility of damage from vehicles, railroad equipment, vandalism and other external causes. Pipelines on bridges may be installed in a utility bay that is constructed between the girders of the bridge. The utility bay shall be protected from the environment by a removable shield bolted to the girders. This will allow utility companies to comply with the Code of Federal Regulations for Periodic Inspection.
- D. In the event of pipe relocation due to the reconstruction of a bridge, the installation of the new pipe must comply with the requirements in these Specifications.

4.10 BONDING AND GROUNDING OF PIPELINES IN ELECTRIFIED TERRITORY

- A. Carrier pipe shall be enclosed in a metal casing that is isolated from carrier pipe by approved insulators having a dielectric value of not less than 25 kV that provide an air gap between carrier pipe and casing of not less than 2 inches.
- B. Carrier pipe supporting hangers, mountings or cradles shall provide an insulation value of not less than 25 kV and an air gap of not less than 2 inches between casing and any portion of mounting assembly.
- C. Any grounding or isolation methods used must have a minimum dielectric of 25,000 volts.

4.11 ABANDONED PIPELINES OR FACILITIES

- A. For all pipeline occupations on the railroad right-of-way, the owner of the pipeline shall notify the MBTA, in writing, of the intention to abandon the pipeline. Upon abandonment the carrier pipe shall be removed and the casing shall be filled with cement grout, compacted sand or other material approved by the Director of Engineering for

MBTA Railroad Operations. If it is impractical to remove the carrier pipe, then the carrier must be filled along with the annular space between the casing and carrier.

- B. Facilities other than pipelines shall be removed or altered at abandonment to the satisfaction of the Director of Engineering for MBTA Railroad Operations.

4.12 DRAINAGE

- A. Occupancies shall be designed, and constructed, so that adequate and uninterrupted drainage of railroad right-of-way is maintained. If it becomes necessary to block a ditch, pipe or other drainage facility, the applicant shall install temporary pipes, ditches or other drainage facilities as required to maintain adequate drainage, as approved by the MBTA or Railroad Company(s). Upon completion of the work, the temporary drainage facilities shall be removed and the permanent facilities restored.
- B. Water may not be pumped or disposed of onto railroad rights-of-way unless discharged into an existing drainage facility, providing discharge does not cause erosion or leave sediment.
- C. When water runoff is disposed of onto MBTA Railroad Property, it must be demonstrated to the Railroad Company(s) that the existing drainage facility can accommodate the increased runoff. Drainage calculations stamped by a Registered Professional Engineer must accompany all requests to use railroad culverts or drainage ditches.
- D. If in the estimation of the Director of Engineering for MBTA Railroad Operations or their authorized representative, the railroad culvert or drainage ditch has to be cleaned in order to allow the increased flow to safely pass through the culvert, it must be cleaned at the expense of the applicant.

SECTION 5. CARRIER PIPE

GENERAL:

5.01 DESIGN CRITERIA

- A. If the maximum allowable stress in the carrier pipe on either side of the occupancy of MBTA Railroad Property is less than specified herein, the carrier pipe on MBTA Railroad Property shall be designed at the same stress as the adjacent carrier pipe.

- B. Requirements for carrier pipe under railroad tracks shall apply for a minimum distance equal to that of the casing pipe.
- C. Carrier pipes within a casing shall be designed for railroad live loads as if they were not encased.
- D. All pipes, ditches and other structures carrying surface drainage on MBTA Railroad Property and/or crossing under railroad tracks shall be designed to carry the run-off from a one hundred (100) year storm. Computations indicating this design and suitable topographic plans, prepared by a Registered Professional Engineer, shall be submitted to the Director of Engineering for MBTA Railroad Operations, or their authorized representative, for approval. If the drainage is to discharge into an existing drainage channel on railroad right-of-way and/or under railroad tracks, the computations should include the hydraulic analysis of any existing structures. Submitted with the computations should be formal approval of the proposed design by the appropriate governmental agency.

PRODUCTS:

5.02 GENERAL

- A. All pipes shall be designed for the external and internal loads to which they will be subjected. The dead load of earth shall be considered 120 pounds per cubic foot. Railroad live loading shall be Cooper's E-80 with 50% added for impact. On railroad right-of-way or where railroad loading will be experienced, the following shall be the minimum requirements for carrier pipes:
 - 1. Reinforced concrete pipe - ASTM Spec. C-76, Class V, Wall C.
 - 2. Ductile Iron Pipe - For Culverts and Gravity Sewers - ASTM Spec, A-142 Extra Heavy.

5.03 OIL AND GAS PIPES

- A. Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ANSI B 31.4, with Addenda, "Liquefied Petroleum Transportation Piping Systems," ANSI B 31.8, "Gas Transmission and Distribution Piping Systems," and other applicable ANSI codes, except that the minimum allowable stresses for the design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by the longitudinal joint factor) of the pipe as defined in the ANSI Codes:

1. Steel pipe within a casing under, across and longitudinally on MBTA Railroad Property. (The following percentages apply to hoop stress):
 - a. Seventy-two percent for installation on oil pipelines.
 - b. Fifty percent for pipelines carrying liquefied petroleum gas and other flammable Liquids with low flash point.
 - c. Sixty percent for installations on gas pipelines.
 2. Steel pipe without a casing laid longitudinally on MBTA Railroad Property. (The following percentages apply to hoop stress):
 - a. Sixty percent for installations on oil pipelines.
 - b. Forty percent for pipelines carrying liquefied petroleum gas and other flammable Liquids with low flash point.
 - c. Forty percent for installations on gas pipelines.
- B. Design computations showing compliance with the requirements of Paragraph 5.03(A) above, and prepared by a Registered Professional Engineer, shall accompany the application for occupancy.
- 5.04 CAST IRON PIPE: For water and other materials under pressure shall conform to the current ANSI specifications A-21 Series 21/45 Iron strength with plain end, compression type or mechanical joints. The strength to sustain external railroad and other loadings shall be computed in accordance with the current ANSI A-21.1 "Thickness Design of Cast Iron Pipe."
- 5.05 VITRIFIED CLAY PIPE: ASTM Spec C-700, Extra Strength.
- 5.06 CORRUGATED METAL PIPE: AREA Spec Chapter I, Part 4
- 5.07 ASBESTOS CEMENT PIPE (Non-pressure): ASTM Spec. C-428, C1. 5000 Min. Pressure: AWWA Spec. C400, C1. 150 Min.
- 5.08 OTHER: Other miscellaneous piping not specified above shall be submitted to approval by the Director of Engineering for MBTA Railroad Operations.
- 5.09 SHUT-OFF VALVE
- A. Provide accessible emergency shut-off valves at each side of the railroad within distances and at locations as directed by the Chief Engineering Officer.

- B. Where pipelines are provided with automatic control stations and within distances approved by the Director of Engineering for MBTA Railroad Operations, no additional valves will be required.

5.10 SIGNS

- A. Prominently identify all pipelines at rights-of-way by durable, weatherproof signs located over the centerline of the pipe. Mark pipelines at under crossings on both sides of track. Signs shall display the following:
 - 1. Name and address of pipeline Owner.
 - 2. Contents of Pipe.
 - 3. Pressure in Pipe.
 - 4. Depth below grade at point of sign.
 - 5. Emergency telephone in event of pipe rupture.
 - 6. Railroad File Number.
- B. For pipelines running longitudinally on MBTA Railroad Property, place signs over the pipe (or offset and appropriately mark) at all changes in direction the pipeline. Locate signs so that when standing at one sign, the next adjacent marker in either direction is visible. In no event shall pipeline identification signs be placed more than 500 feet apart, unless otherwise directed by the Director of Engineering for MBTA Railroad Operations.
- C. Submit details of signs (materials, size, methods of support, etc.) to the Director of Engineering for MBTA Railroad Operations for approval.

EXECUTION:

5.11 INSTALLATION:

- A. Install carrier pipes in accordance with approved Construction Drawings, requirements of this specification, and all applicable codes and ordinances.
- B. Install carrier pipes with sufficient slack so they are not in tension.

SECTION 6. CASING PIPE

GENERAL:

6.01 DESIGN CRITERIA

- A. Casing pipe and joints shall be of metal and of leak-proof construction.
- B. Casing pipe shall be designed for the earth and/or other pressures present, and for railroad live load. The dead load of earth shall be considered 120 pounds per cubic foot. Railroad Live load shall be Cooper E-80 with 50g added for impact.
- C. The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing or the roadbed. For carrier pipe less than six (6) inches in diameter, the inside diameter of the casing pipe shall be at least two (2) inches greater than the largest outside diameter of the carrier pipe joints or couplings. For carrier pipe six (6) inches and over in diameter, the inside diameter of the carrier pipe shall be at least four (4) inches greater than the largest outside diameter of the carrier pipe joints or couplings.
- D. For flexible casing pipe, a minimum vertical deflection of 3 percent of its diameter, plus 1/2 inch, shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe, the inside diameter of the flexible casing pipe shall be at least two (2) inches greater than the outside diameter of the carrier pipe for pipe less than eight (8) inches in diameter; at least 3-1/4 inches greater for pipe 8 to 16 inches in diameter, and at least 4-1/2 inches greater for pipe 18 inches and over in diameter. In no event shall the casing pipe diameter be greater than is necessary to permit the insertion of the carrier pipe.
- E. Casing pipe under railroad tracks and across MBTA Railroad Property shall extend the greater of the following distances, measured at right angles to centerline of track:
 - 1. Across the entire width of MBTA Railroad Property.
 - 2. Two (2) feet beyond ditch line.
 - 3. Three (3) feet beyond toe of slope.
 - 4. A minimum distance of 25 feet each side from centerline of outside track when casing is sealed at both ends.
 - 5. A minimum distance of 45 feet from centerline of outside track when casing is open at both ends.

F. If additional tracks are constructed in the future, the casing shall be extended at the expense of the Applicant.

G. Table of Live Loads

LIVE LOADS, INCLUDING IMPACT, FOR VARIOUS HEIGHTS OF COVER
FOR COOPER E- 80

COVER (FT)	LOAD (PSF)	COVER (FT)	LOAD (PSF)	COVER (FT)	LOAD (PSF)
2	3800	10	1100	20	300
5	2400	12	800	30	100
8	1600	15	600		

6.02 PROTECTION AT ENDS OF CASING

- A. Casings for carriers of flammable substances shall be sealed to the outside of the carrier pipe. Details of seals shall be shown on the Drawings.
- B. Casings for carriers of non-flammable substances shall have both ends of the casing blocked in such a way as to prevent the entrance of foreign material, but allowing leakage to pass in the event of a carrier break.
- C. Where ends of casing are at or above ground surface and above high water level, they may be left open, provided drainage is afforded in such a manner that leakage will be conducted away from railroad tracks and structures.

6.03 VENTS

- A. Sealed casings for flammable substances shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than two (2) inches in diameter, and shall be attached near each end of the casing and project through the ground surface at right-of-way lines or not less than 45 feet (measured at right angles from centerline of nearest track).
- B. Vent pipes shall extend at least four (4) feet above the ground surface. Top of vent pipe shall have a down-turned elbow, properly screened, or a relief valve. Vents in locations subject to high water shall be extended above the maximum elevation of high water and shall be supported and protected in a manner approved by the Director of Engineering for MBTA Railroad Operations.
- C. Vent pipes shall be at least four (4) feet from the closest aerial electric

wires.

- D. When the pipeline is in a public highway, street-type vents shall be installed.

PRODUCTS:

6.04 STEEL PIPE

The minimum yield strength for steel pipe shall be 35,000psi. Smooth wall pipes with a nominal diameter greater than 70 inches require special approval by the Director of Engineering for MBTA Railroad Operations. See Plate V, "Table of Minimal Wall Thickness for Steel Casing Pipe."

6.05 CAST IRON PIPE

May be used for a casing, provided the method of installation is by open trench. Cast iron pipe shall conform to ASTM Specification A-142, Extra Heavy. The pipe shall be of the mechanical joint type or plain end type with compression type couplings.

6.06 CORRUGATED METAL PIPE AND CORRUGATED STRUCTURAL PLATE PIPE

May be used for casing only when emplaced by the open-cut method. Jacking or boring through railroad embankment is not permitted. Pipe shall be bituminous coated and shall conform to AREA Specifications Chapter 1, Part 4.

6.07 REINFORCED CONCRETE PIPE

Shall conform to ASTM Specification C 76, Class V, Wall C. It shall be used only in the open cut and jacking methods of installation. If concrete pipe is to be jacked into place, grout holes tapped for at least 1-1/2 inch pipe spaced at approximately 8 feet around the circumference and approximately 4 feet longitudinally shall be cast into the pipe at manufacture. Immediately upon completion of jacking operations, the installation shall be pressure grouted.

6.08 TUNNEL LINER PLATES

Shall be four flange and otherwise conform to American Railway Engineering Association Specifications Chapter 1, Part 4. In no event shall the liner plate thickness be less than 0.1046 inches. Tunnel liner plates are to be used only to maintain a tunneled opening until the carrier pipe is installed. After installation the annular space between the carrier and liner must be filled

with 1:6 cement grout or lined with 6 inches of concrete, reinforced with 6x6-6/6 wire mesh for tunnels up to 108 inches in diameter. Required thickness of lining for larger tunnels shall be determined by span and structural analysis. Manufacturer's Shop Detail Drawings and manufactures computations showing the ability of the tunnel liner plates to resist the jacking stresses shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval.

EXECUTION:

6.09 DEPTH OF INSTALLATION:

- A. Casing pipe under railroad tracks and across MBTA Railroad Property shall be at least 6-1/2 feet from top of rail to top of casing at its closest point. Under secondary or industrial tracks this distance shall be at least 5-1/2 feet. On other portions of MBTA Railroad Property where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall be at least four (4) feet, unless otherwise specified herein.
- B. Pipelines laid longitudinally on MBTA Railroad Property 50 feet or less from centerline of track shall be buried not less than five (5) feet from ground surface to top of pipe. This applies to all pipelines carrying oil, gas, petroleum products, or other flammable or highly volatile substances under pressure, and all non-flammable substances which by their nature or presence in the judgment of the Director of Engineering for MBTA Railroad Operations may be hazardous to life or property. For pipelines carrying water, sewage and non-flammable substances, the distance from surface of ground to top of pipe shall not be less than four (4) feet.
- C. Pipelines located within the line of track live load influence (as shown on Plates II and III) are subject to railroad loading and require a casing or are to be of special design approved by the Director of Engineering for MBTA Railroad Operations. All longitudinal occupation locations must be approved by the Chief Engineering Officer.
- D. The minimum cover shall be at least three (3) feet when pipeline is laid more than 50 feet from center line of track.
- E. Pipelines installed under or adjacent to any overhead structure must be a minimum of 29 feet from the bottom of the structure to the top of the casing. Such installations must comply with the above requirements.

6.10 METHOD OF INSTALLATION

- A. The Owner or its Contractor shall submit to the Director of Engineering for MBTA Railroad Operations, data and information demonstrating that the Contractor or their subcontractors have had successful previous experience in jacking, or using the proposed method of installation, in similar situations.
- B. Before any work is begun within the limits of jacking, the Owner or its Contractor shall have assembled all tools, materials, and equipment which will be required. When the Owner or its Contractor has started the jacking operation, they shall proceed in a continuous operation without stopping. This will minimize the tendency of the material to freeze around the pipe.
- C. A jacking shield shall be used and jacked ahead of the casing pipe. The excavation within the jacking pipe should not advance beyond the head of the pipe shield. If the stability at the face needs to be maintained from raveling or running soil, suitable temporary bulkheads, struts, and bracing shall be required. After completion of the sleeve installation the annular space around it shall be completely grouted with cement grout under pressure.
- D. Casing pipe ends shall be beveled with a single V-groove toe field welding. Pipe joints shall be butt welded and shall be a full penetration on the outside circumference of the pipe. The single V-groove butt weld shall conform to the latest A.W.S. Welding Code. All joints of the casing pipe shall be butt welded, by a certified welder, prior to being subject to the jacking operation.

Alternate method: The casing pipe may be jacked without being butt welded through the use of a continuous 1/2"x12" interior collar plate. The collar plate shall be welded completely upon completion of the jacking operation. All welding shall conform to the latest A.W.S. Welding Code, and shall be performed by a certified welder.

6.11 CONSTRUCTION:

- A. The casing pipe shall be constructed so as to prevent leakage of any substance from the casing throughout its length, except where the ends are left open, or through vent pipes when the ends are sealed. The casing shall be installed so as to prevent the formation of a waterway under the railroad, shall have an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).
- B. Casing pipes shall be installed by the following methods:

1. Jacking

- a. This method shall be in accordance with the most current edition of the American Railway Engineering Association Specifications, "Jacking Culvert Pipe Through Fills." This operation shall be conducted without hand mining ahead of the pipe and without the use of any type of boring, auguring, or drilling equipment.
- b. Bracing and backstops shall be designed and jacks of sufficient rating used so that the jacking will be continuous.

2. Drilling

This method employs the use of an oil field type rock roller bit or a plate bit made up of individual roller cutter units which are welded to the pipe casing being installed and which are turned as it is advanced. The pipe is turned for its entire length from the drilling machine to the ground being drilled. A high density slurry is injected through a small supply line to the head which acts as a cutter lubricant. This slurry is injected at the rear of the cutter units to prevent any jetting action ahead of the pipe. The drilling machine runs on a set of steel rails and is advanced (thus advancing the pipe) by a set of hydraulic jacks. The method is the same whether earth or rock is being drilled. Any other drilling methods shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval.

3. Tunneling

- a. Tunneling operations shall be conducted as approved by the Railroad Company(s). Care shall be exercised in trimming the surface of the excavated section in order that the steel liner plates fit snugly against the undisturbed material. Excavation shall not be advanced ahead of the previously installed liner plates any more than is necessary for the installation of the succeeding liner plate. The vertical face of the excavation shall be supported as necessary to prevent sloughing. At any interruption of the tunneling operation, the heading shall be completely bulkheaded. Tunneling shall be conducted continuously, on a 24 hour basis until the tunnel liners extend at least one foot beyond the railroad line of influence.
- b. When tunneling, tight breasting must be maintained around the entire face. On any shutdowns (under or beyond railroad influence line, see Plate II), the entire

face shall be fully breasted and packed with hay.

- c. The tail void shall be filled with pea stone (or other approved material) simultaneously with each advancement of the shield.
- d. An ample supply of hay and/or sandbags must be kept at the site to fill any voids caused by the removal of large stones or other obstructions extending outside the shield.
- e. A uniform mixture of 1:6 cement grout shall be placed under pressure behind the liner plates, in addition to the previously placed pea stone. Grout holes, tapped for at least 1-1/2 inch pipe and spaced 3 feet around the tunnel liner, shall be placed in every other ring. Grouting shall start at the lowest dole and proceed upwards. A threaded plug shall be installed in each grout hole as the grunting is completed at that hole.
- f. Grouting shall be kept as close to the heading as possible, using grout stops behind the liner plates. If necessary, grouting shall proceed as directed by the Railroad Company(s), but in no event shall more than six lineal feet of tunnel be progressed beyond the grouting.

4. Tunneling Shields

- a. All pipes 70 inches and larger in diameter shall be emplaced with the use of a tunneling shield, unless otherwise approved by the Director of Engineering for MBTA Railroad Operations. Pipes of smaller diameter may also require a shield when, at the sole discretion of the Director of Engineering for MBTA Railroad Operations, soil, or other conditions indicate its need.
- b. The shield shall be of steel construction, designed to support railroad track loading as specified in Paragraph 6.01 B herein, in addition to other loadings it must sustain. The advancing face shall be provided with a hood, extending no less than 20 inches beyond the face and extending around no less than the upper 240 degrees of the total circumference. Installations made with liner plates shall be provided with a full 360 degree shield. It shall be of sufficient length to permit the installation of at least one complete ring of liner plates within the shield before it is advanced for the installation of the next ring of liner plates, It shall conform to and not exceed the outside dimensions of the pipe being emplaced by more than one inch at any point in the periphery.

- c. The shield must be adequately braced and provided with necessary appurtenances for completely bulkheading the face with horizontal breastboards, and arrange so that the excavation can be benched as may be necessary. Excavation shall not be advanced beyond the edge of the hood, unless otherwise approved by the Railroad Company(s).
- d. Manufacturer's Shop Detail Drawings and computations showing the ability of the tunnel liner plates to resist the jacking stresses shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval.
- e. For jacking reinforced concrete pipe, the shield shall be fabricated as a special section of reinforced concrete pipe with the steel cutting edge, hood, breasting attachments, etc., cast into the pipe. The wall thickness and reinforcing shall be designed for the jacking stresses.
- f. Grout holes tapped for no less than 1-1/2 inch pipe, spaced at approximately 3 foot centers around the circumference of the shield (or the aforementioned special reinforced concrete section) and no more than 4 foot centers longitudinally shall be provided.
- g. Detail Drawings sufficient to determine the adequacy of the shield, accompanied with design calculations prepared by a Registered Professional Engineer, shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval and no work shall proceed until such approval is obtained.

5. Boring

- a. This method consists of pushing the pipe into the fill with a boring auger rotating within the pipe to remove the spoil. When augers, or similar devices, are used for pipe emplacement, the front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger and cutting head from leading the pipe so that there will be no unsupported excavation ahead of the pipe. The auger and cutting head arrangement shall be removable from within the pipe in the event an obstruction is encountered. The over-cut by the cutting head shall not exceed the outside diameter of the pipe by more than one-half inch. The face of the cutting head shall be arranged to provide reasonable obstruction to the free flow of soft or poor material.
- b. Drawings and descriptions of the auger stop arrangement to be used shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval,

and no work shall proceed until such approval is obtained and the arrangement is inspected in the field by the Railroad Company(s).

- c. The use of water or other Liquids to facilitate casing emplacement and/or spoil removal is prohibited.
 - d. Any method which employs simultaneous boring and jacking or drilling and jacking for pipes over 8 inches in diameter which does not have the above approved arrangement WILL NOT BE PERMITTED. For pipes 8 inches and less in diameter, augering or boring without this arrangement may be considered for use only as approved by the Director of Engineering for MBTA Railroad Operations.
- C. If an obstruction is encountered during the installation which stops the forward action of the pipe, and it becomes evident that it is impossible to advance the pipe, operations shall cease and the pipe shall be abandoned in place and filled completely with grout, in accordance with Section 4, Paragraph 4.10.
- D. Bored or jacked installations shall have a bored hole essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (plus coating) by more than 1 inch, grouting or other methods approved by the Railroad Company(s) shall be employed to fill such voids.
- E. Pressure grouting or freezing of the soils before or during jacking, boring, or tunneling may be required at the direction of the Railroad Company(s) to stabilize the soils, control water, prevent loss of material and prevent settlement or displacement of the embankment and/or tracks. Grout shall be cement, chemical or other special injection material selected to accomplish the necessary stabilization.
- F. The materials to be used and the method of injection shall be prepared by a Registered Professional Engineer (Geotechnical), or by an experienced and qualified company specializing in this work and submitted for approval to the Railroad Company(s) before the start of work. Proof of experience and competency shall accompany the submission.
- G. When water is expected to be encountered, pumps of sufficient capacity shall be provided and maintained at the site, and continually attended on a 24-hour basis, until in the sole judgment of the Railroad Company(s), their operation can be safely halted.

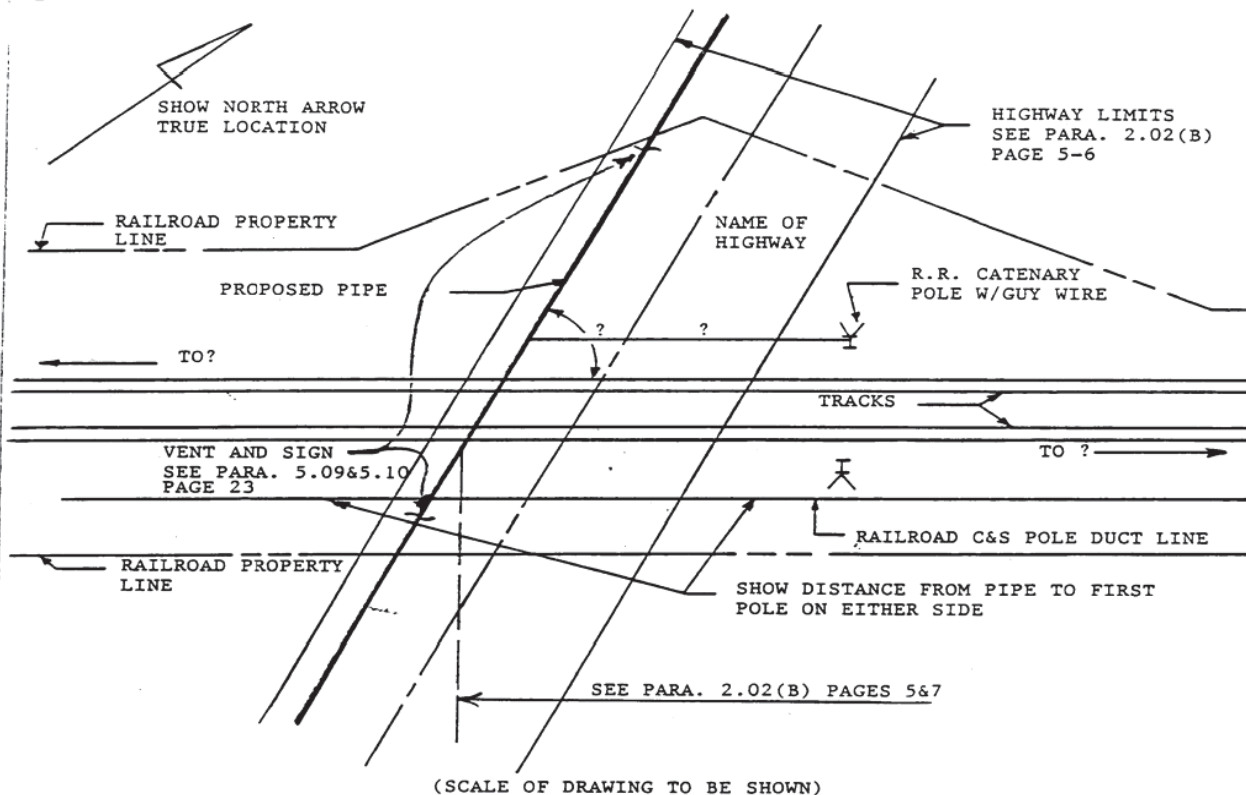
When dewatering, close observation shall be maintained to detect any settlement or displacement of railroad embankment, tracks, and facilities.

- H. Proposed methods of dewatering must be submitted to the Railroad Company(s) for approval prior to implementation. The discharge from the dewatering operations in the vicinity of the railroad shall be carefully monitored. If in the opinion of the Railroad Company(s), there is an excessive loss of fine soil particles at any time during the dewatering process, the dewatering shall be halted immediately. The dewatering operation cannot resume until the unsatisfactory condition is remedied to the satisfaction of the Railroad Company(s).

PLATE I

PIPE CROSSING

INFORMATION TO BE SHOWN ON PLAN SECTION OF DRAWING



NOTE:

IF MANHOLES ARE PLACED ON MBTA RAILROAD PROPERTY, DETAILS OF SAME, WITH CLEARANCES TO THE CENTERLINE OF THE NEAREST TRACK ARE TO BE SHOWN ON THE DRAWINGS.

IF THE PROPOSED PIPE IS TO SERVE A NEW DEVELOPMENT, A MAP SHOWING THE AREA IN RELATION TO ESTABLISHED AREAS AND ROADS IS TO BE SENT WITH THE REQUEST.

THE PROPOSED PIPE IS NOT WHOLLY WITHIN HIGHWAY LIMITS, THE SAME INFORMATION IS REQUIRED AS SHOWN ON THIS PLATE.

PLATE II

PIPE CROSSING

INFORMATION TO BE SHOWN ON PROFILE SECTION OF DRAWING

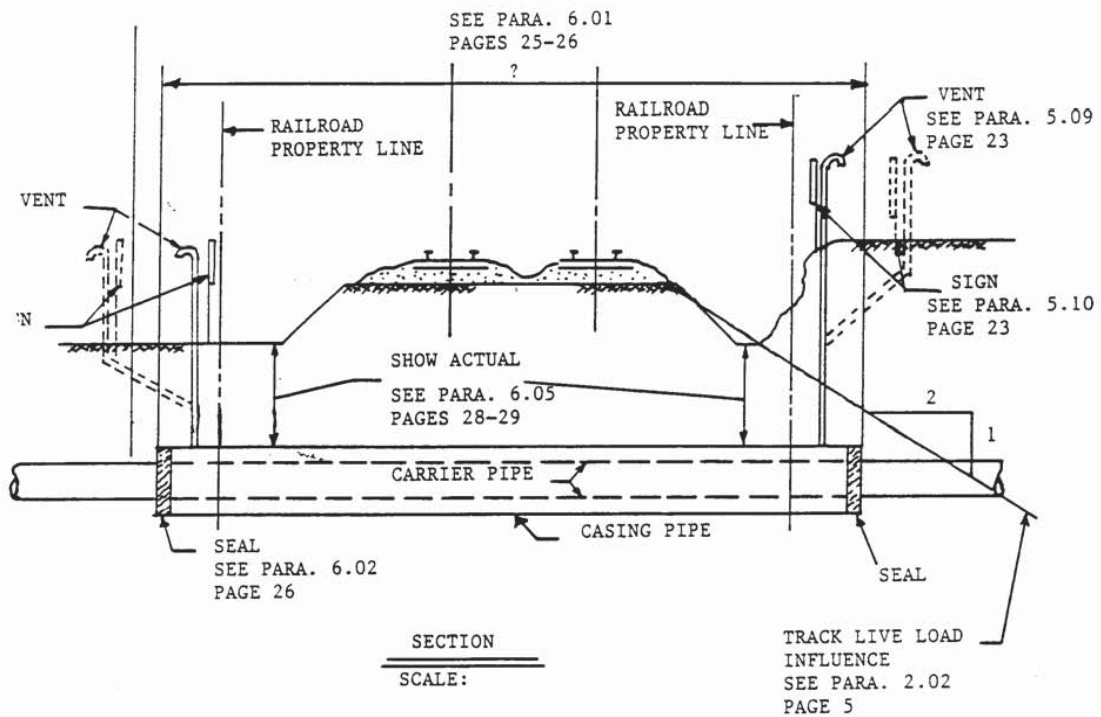
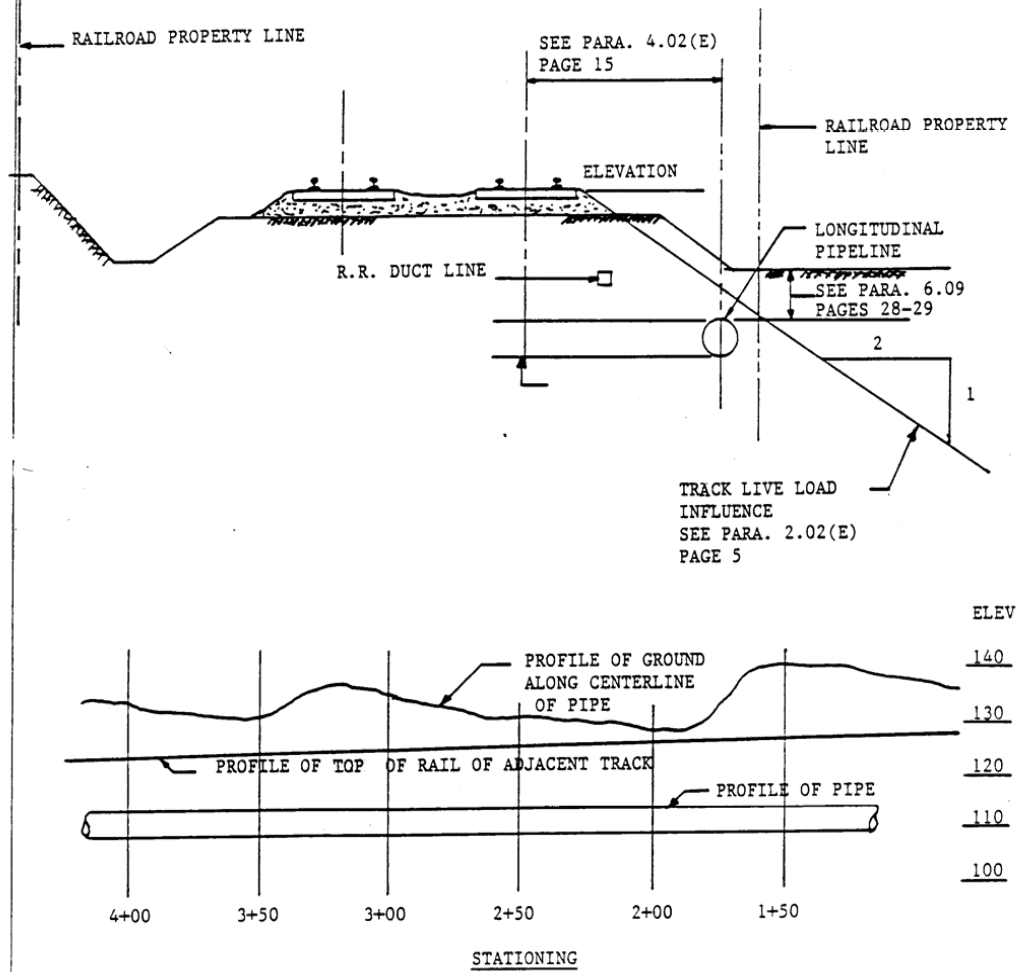


PLATE III

LONGITUDINAL OCCUPANCY



PROFILE - SEE PARA. 2.02
PAGES 5-7

SCALE - HOR:
VER:

PIPE CROSSING DATA SHEET

PLATE IV

In addition to plan and profile of crossing, Drawings submitted for the Railroad Company(s) approval shall contain the following information:

	<u>Pipe Date</u>	
	<u>Carrier Pipe</u>	<u>Casing Pipe</u>
Contents To Be Handled	_____	_____
Normal Operating Pressure	_____	_____
Normal Size of Pipe	_____	_____
O.S. Diameter	_____	_____
I.S. Diameter Wall	_____	_____
Thickness Weight	_____	_____
Per Foot Material	_____	_____
Process of Manufacture	_____	_____
Specification	_____	_____
Grade or Class	_____	_____
Test Pressure	_____	_____
Type of Joint	_____	_____
Type of Coating	_____	_____
Details of Cathodic Protection	_____	_____
Details of Seal or Protection at Ends of Casing:	_____	_____
Method of Installation	_____	_____
Character of Subsurface: Material At the Crossing Location	_____	_____
Approximate Ground Water Level	_____	_____
Source of Information on Sub- surface conditions (Test Pits, Borings or Other)	_____	_____

NOTE: Any soil investigation made on MBTA Railroad Property, or adjacent to tracks shall be carried on under the supervision of the Railroad Company(s).

PLATE V

TABLE OF MINIMUM WALL THICKNESS FOR STEEL CASING PIPE
(FOR INFORMATION ONLY)

PROTECTED WALL THICKNESS

PIPE SIZE (INCHES)	WALL THICKNESS (PROTECTED)	
10	0.375	
12	0.375	
14	0.375	
16	0.375	
18	0.375	
20	0.375	
22	0.375	
24	0.375	
26	0.375	
28	0.406	
30	0.469	
32	0.501	
34	0.532	
36	0.532	
38	0.569	
40	0.569	
42	0.569	
44	0.594	
46	0.688	
48	0.688	
50	0.688	
52	0.813	
54	0.813	
56	0.876	
58	0.876	
60	0.876	
62	0.876	
64	0.876	
66	0.876	
68	0.876	
70	0.906	

NOTE: - FOR UNPROTECTED PIPE 26" AND UNDER ADD 0.032" TO PROTECTED WALL THICKNESS. FOR UNPROTECTED PIPE 28" AND OVER, ADD 0.063" TO PROTECTED WALL THICKNESS.



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V

**SPECIFICATIONS FOR WIRE CONDUIT AND CABLE
OCCUPATIONS**

SECTION 1. SCOPE

- 1.01 These specifications apply to the design of electric transmission wires and cables (power and communication) which are to be located over, under, across or upon property, facilities, and tracks owned by the MBTA.

SECTION 2. LICENSE TO ENTER MBTA RAILROAD PROPERTY

- 2.01 Individuals, corporations, or municipalities desiring wire or cable occupations must agree, upon approval of the construction details by the Director of Engineering for MBTA Railroad Operations, to execute an appropriate occupational agreement and pay any required fees and/or rentals outlined therein.

- 2.02 Application for an occupancy shall be submitted in writing to:

AGM for Real Estate and Asset Development
MBTA, 10 Park Plaza
Boston, Massachusetts 02116

See "Guidelines and Procedures for Construction on MBTA Railroad Property."

- 2.03 All applications shall be accompanied with six (6) copies of all Construction Drawings, specifications and computations concerning the proposed occupancy.

SECTION 3. APPROVAL OF DRAWINGS

- 3.01 Entry upon MBTA Railroad Property for the purpose of conducting surveys, field inspections, obtaining soil information, or any other purpose associated with the design and engineering of the proposed occupancy will be permitted only with a proper entry permit prepared by the MBTA Real Estate Department. The issuance of such a permit does not constitute authority to proceed with the actual construction. Construction cannot begin until the proper insurance certificate is received and a formal agreement is executed by the MBTA and permission is received by the Railroad Company(s).

- 3.02 Drawings shall be drawn to scale and show the following: (See attached plates I -VI)

- A. Plan view of crossing or occupation in relation to all Railroad Company(s) facilities. (See Plate 1)
- B. Location of wire or cane (in feet) from nearest railroad mile post, center line of a railroad bridge (giving bridge number), or center line of a passenger station. In all cases, the name of the County and City or

Town in which the proposed facilities are located must be shown.

- C. Profile of ground on center line of pole or tower line, showing clearances between top of rail and bottom of sag, as well as clearances from bottom wire or cable to top wire or cable of the MBTA's transmission, signal and communication lines and catenary. If none of these facilities are in existence at the point of crossing, the plan should so indicate. Actual under-clearances are to be shown. (See Plate V for the required clearances).
- D. Show all known property lines. If wires, cables or conduits are within public highway limits, such limits should be clearly indicated with dimensions from center line.
- E. The Drawing must be specific as to:
 - 1. Base diameter, height, class and bury of poles. Poles shall be set no closer than 13' 6" from face of pole to center line of nearest track. When necessary, however, each location will be analyzed by the MBTA to consider speed, traffic, access, etc.
 - 2. Number, size and material of power wires, as well as number of pairs in communication cables.
 - 3. Nominal voltage of line, type of current and frequency.
 - 4. Number, location, size and material of anchors and all guying for poles and arms.

NOTE: Double cross-arms are required on poles adjacent to track. Any tower designs must be accompanied by engineering computations and data.

SECTION 4. CONSTRUCTION REQUIREMENTS

4.01 Power and communication lines shall be constructed in accordance with "Safety Rules for the Installation and Maintenance of Electric Supply and Communication Lines, National Electrical Safety Code Handbook, Part 2" (current issue), with the following exceptions:

- A. Item 3 (c), page 2.
- B. Casing pipes to contain power or communication wires or cables having an outside diameter of over four (4) inches shall be constructed in accordance with the current issue of MBTA Railroad Operations "Pipeline Occupancy Specifications".

SECTION 5. LONGITUDINAL OCCUPATIONS

5.01 Wires and cables running longitudinally along railroad right-of-way shall be

constructed as close to MBTA property lines as possible in accordance with Plate III. For electrical power lines and cables with voltages of 34,500 or over and communication canes containing over 180 pairs, the following information must be submitted in addition to the detail of the pole top configuration as called for on Plate IV of these specifications:

- A. Voltage of circuit(s) or number of pairs. B. Phase of electrical circuit(s).
 - B. Number of electrical circuits.
 - C. Size (AWG or CM) and material of wires and cables.
- 5.02 Any facilities overhanging MBTA Railroad Property must have approval of the MBTA and appropriate rental charges will be applied.

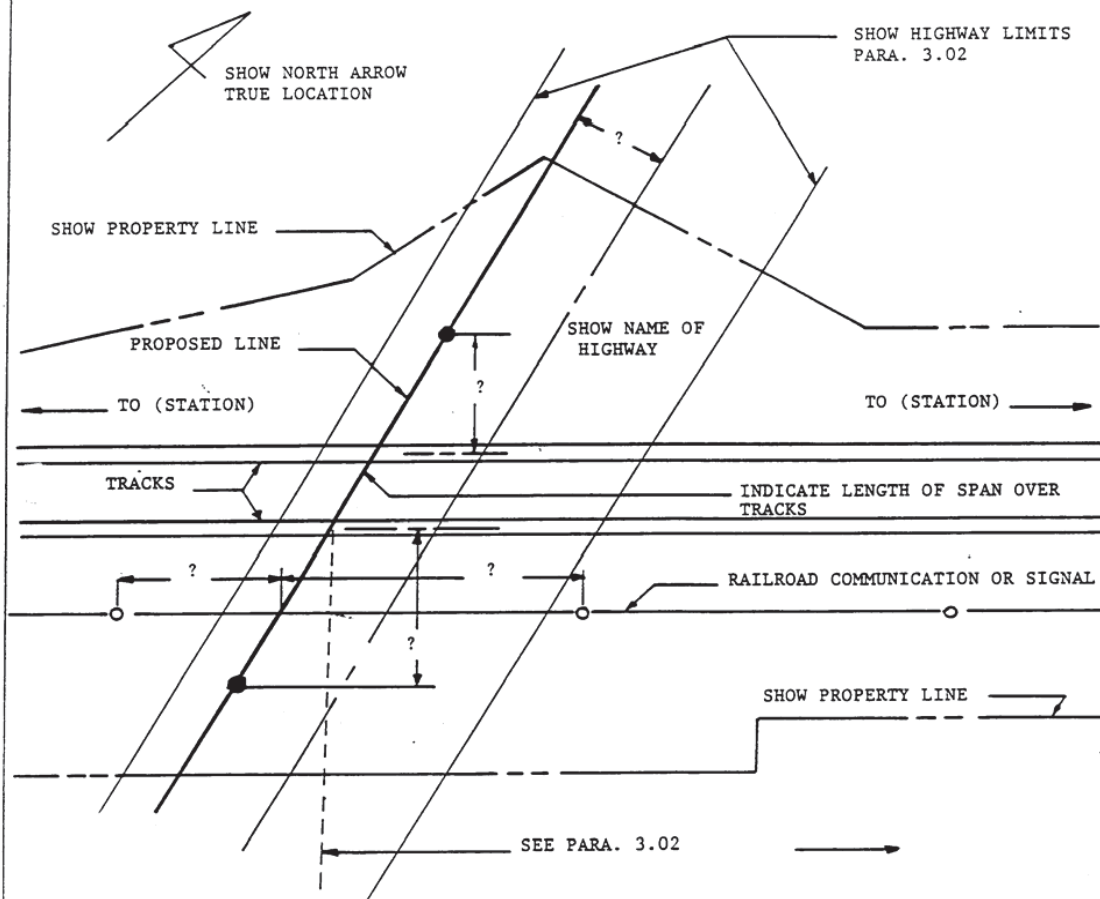
SECTION 6. INDUCTIVE INTERFERENCE

- 6.01 On agreements covering longitudinal occupations, provisions shall be included that hold the Applicant responsible to provide appropriate remedies, at their own expense, to correct any inductive interference with MBTA facilities.

PLATE I

PLAN VIEW

INFORMATION TO BE SHOWN ON PLAN SECTION OF DRAWINGS
WHEN FACILITY IS A CROSSING



SCALE OF DRAWING TO BE SHOWN

NOTE:

IF THE PROPOSED LINE IS TO SERVE A NEW DEVELOPMENT, A MAP SHOWING THE AREA IN RELATION TO ESTABLISHED AREAS AND ROADS IS TO BE SENT WITH THE REQUEST.

IF THE PROPOSED LINE IS NOT WHOLLY (OR PARTIALLY) WITHIN HIGHWAY LIMITS, THE SAME INFORMATION IS REQUIRED AS SHOWN ON THIS PLATE.

PLATE II

PIPE CROSSING

INFORMATION TO BE SHOWN ON PROFILE SECTION OF DRAWING

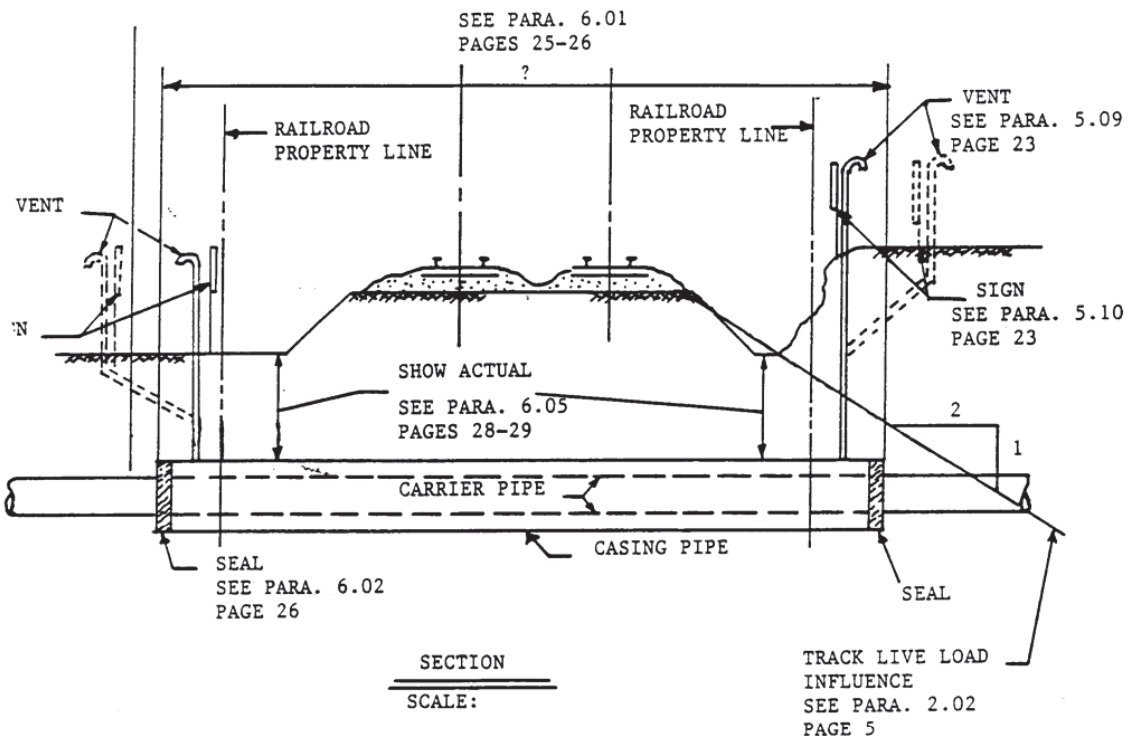
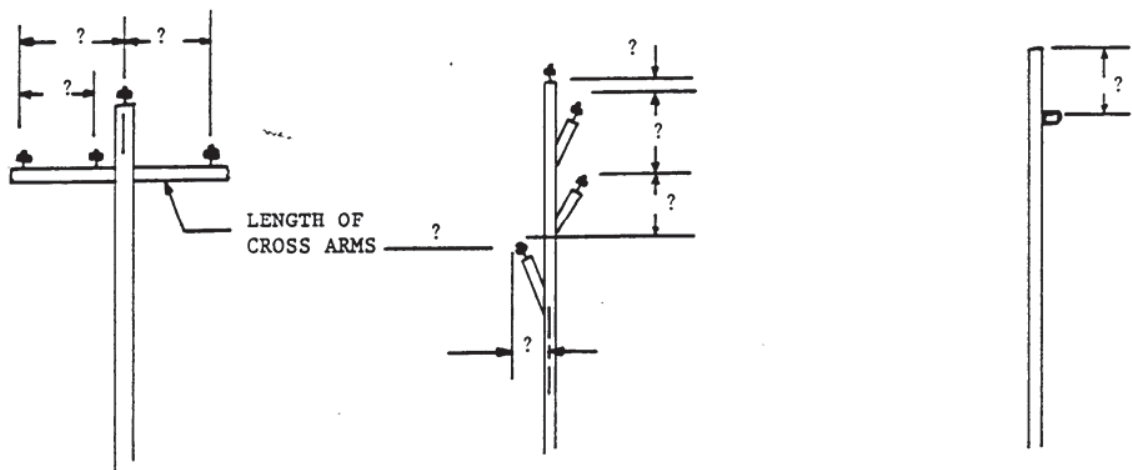
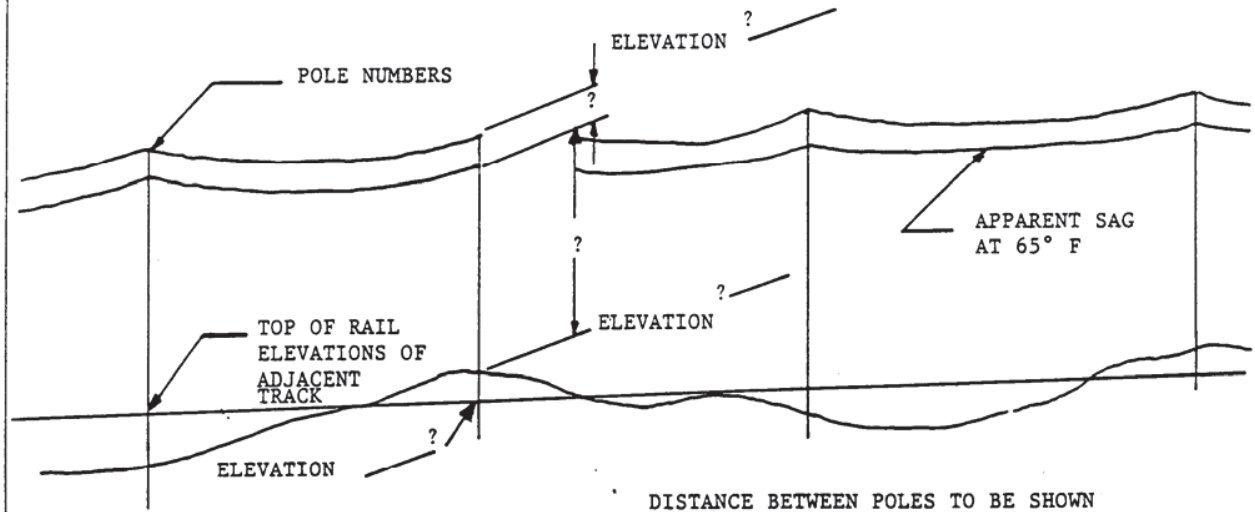


PLATE III

PROFILE VIEW

INFORMATION TO BE SHOWN ON PROFILE SECTION OF DRAWINGS
IN CASES OF LONGITUDINAL OCCUPATIONS

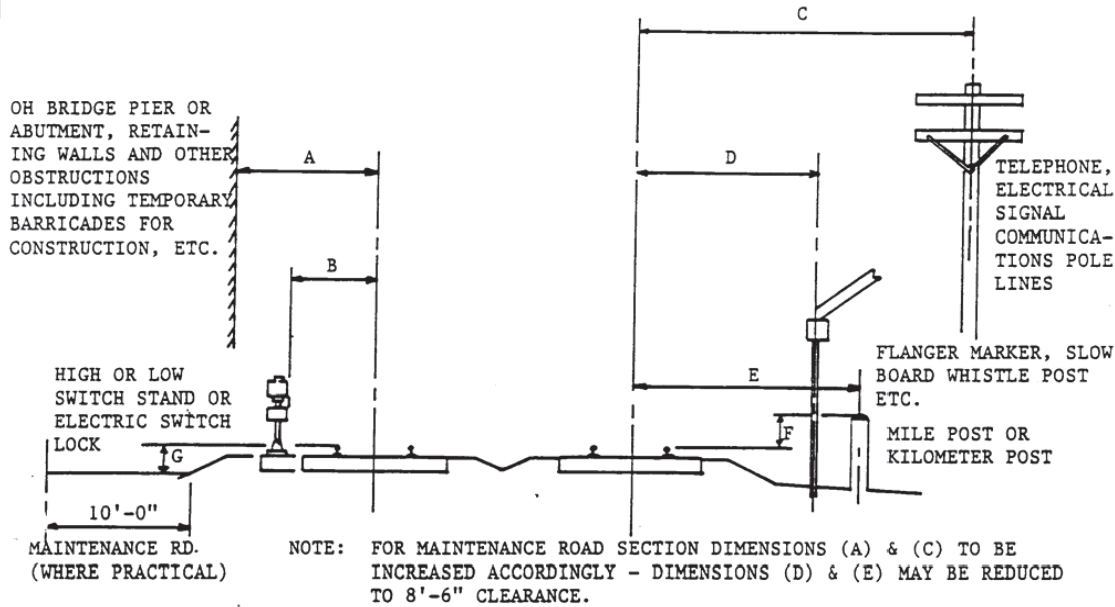


POLE TOP CONFIGURATION TO BE SHOWN SIMILAR TO SAMPLES ABOVE

NOTE: IF POWER LINE CROSSES ANY TRACK, THEN INFORMATION SHOWN ON PLATE II IS ALSO REQUIRED.

PLATE IVSTANDARD SIDE CLEARANCES - TANGENT TRACK

(FOR OBSTRUCTIONS OTHER THAN PASSENGER STATIONS)



DIMENSION	DESCRIPTION	
A	GENERAL MINIMUM SIDE CLEARANCE OVERHEAD BRIDGE PIERS & ABUTMENT, RETAINING WALLS & OTHER EXISTING STRUCTURES	8'-6" 8'-6"
B	LOW SWITCH STANDS (3'-0" MAX HEIGHT) HIGH SWITCH STANDS (OVER 3'-0" HEIGHT) ELECTRIC SWITCH LOCKS	6'-6" 9'-0" 6'-6"
C	POLE LINES - TELEPHONE, ELECTRIC, SIGNAL COMMUNICATIONS (MIN)	13'-6"
D	CENTERLINE WHISTLE POSTS, FLANGER MARKERS, SLOW OR SPEED BOARDS AND OTHER WAYSIDE SIGNS AUTOMATIC HIGHWAY CROSSING PROTECTION (MIN) AUTOMATIC HIGHWAY CROSSING PROTECTION (DESIRED)	12'-0" 8'-6" 15'-0"
E	MILE POSTS - HORIZONTAL	13'-6"
F	MILE POSTS - VERTICAL	7'-0"
G	DEPRESSION OF MAINTENANCE ROAD	

PLATE V

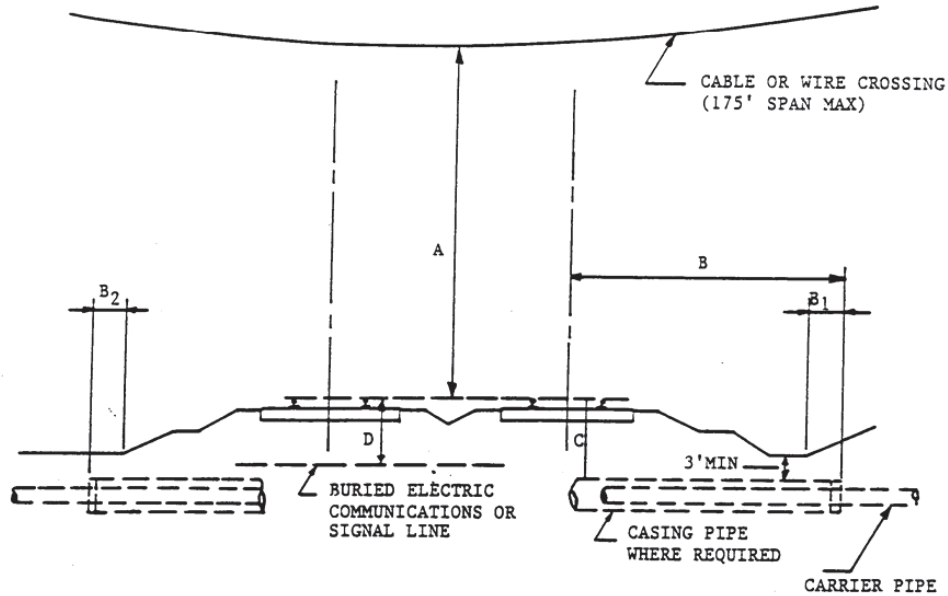
<u>VOLTAGE</u>	<u>OVERHEAD CLEARANCE</u> (Top of Rail to <u>Bottom of Sag</u>)	
0- 750	27'0"	 At 120°F Ambient Temperature
750- 15,000	28'0"	
15,000 - 50,000	30'0"	
69,000	30'8"	
115,000	32'2"	
138,000	33'0"	
345,000	39'10"	
500,000	45'0"	
745,000	53'2"	
765,000	53'10"	
Other than power lines	27'0"	

(Calculation is 30'0" + 0.4" per 1,000 volts over 50,000 volts)

*** • *

CLEARANCES FOR OVERHEAD AND BURIED UTILITY CROSSINGS

PLATE VI



DIMENSION	DESCRIPTION	
A	POWER LINES 0 TO 750V	27'-0"
	POWER LINES 750V TO 15,000V	28'-0"
	POWER LINES 15 TO 50KV	30'-0"
	OTHER THAN POWER LINES	27'-0"
		At 120°F Ambient Temperature
B	SEALED ENDED CASINGS	25'-0"
	OPEN ENDED CASINGS	45'-0"
B ₁	END CASING BEYOND DITCH	2'-0"
B ₂	END CASING BEYOND SLOPE	3'-0"
C	CASING PIPE	4'-6"
	CARRIER PIPE WITHOUT CASING	6'-6"
D	BURIED ELECTRIC LINES	6'-6"
	RAILROAD SIGNAL LINES (220V)	2'-6"
	COMMUNICATIONS LINES	3'-6"



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VI

**BRIDGE ERECTION, DEMOLITION AND HOISTING
OPERATIONS**

Submittals for bridge erection, demolition, or other hoisting operations shall be prepared and stamped by a Registered Professional Engineer and must include the following:

1. Plan view showing locations of crane or cranes, operating radii, with delivery or disposal locations shown.
2. Crane rating sheets showing cranes to be adequate for 150% of the lift. Crane and boom nomenclature is to be indicated.
3. Drawings and computations showing weight of picks.
4. Location plan showing obstructions, indicating that the proposed swing is possible.
5. Data sheet listing type and size of slings or other connecting equipment. Include copies of catalog cuts or information sheets of specialized equipment. The method of attachment must be detailed on the erection plan. All lifting components must be adequate for 150% of the lift.
6. A complete procedure indicating the order of lifts and any repositioning or re-hitching of the crane or cranes.
7. Drawings detailing temporary support of any components or intermediate stages.
8. A time schedule (by hour and day) of the various stages, as well as a schedule for the entire lifting procedure.



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VII

TEMPORARY SHEETING AND SHORING

The following items are to be included in the design and construction procedures for all permanent and temporary facilities on, over, under, within or adjacent to MBTA Railroad Property:

1. Footings for all piers, columns, walls or other facilities shall be located and designed so that any temporary sheeting and shoring for support of adjacent track or tracks during construction will not be closer than toe of ballast slope. (See dimensions in the MBTA's Book of Standard Plans, #1000 and #1002 for tangent and curved track). Sheeting shall be required when excavation is inside of a line which extends horizontally from 5.5 feet off center line of adjacent track, then on a 2 (horizontal) to 1 (vertical) slope. This is known as the zone of influence.
2. Where physical condition of design impose insurmountable restrictions requiring the placing of sheeting closer than specified above, the matter must be submitted to the Director of Engineering for MBTA Railroad Operations for approval of any modifications.
3. When support of track or tracks is necessary during construction of above mentioned facilities, interlocking steel sheeting adequately braced and designed to carry E-80 live load plus 50% impact is required. Soldier piles and lagging will be permitted for supporting adjacent track or tracks only when required penetration of steel sheet piling cannot be obtained or when in the opinion of the Director of Engineering for MBTA Railroad Operations, or their authorized representative, steel sheet piling would be impracticable to place.
4. Exploratory trenches, three (3) feet deep and fifteen (15) inches wide in the form of an "H" with outside dimensions matching the outside of sheeting dimensions are to be hand dug, prior to placing and driving steel sheeting, in areas where railroad underground installations are known to exist. These trenches are for exploratory purposes only and are to be backfilled and compacted immediately. This work must be done in the presence of a railroad inspector.
5. Absolute use of track is required while driving sheeting adjacent to any track. Procedure for arranging the use of track shall be through the Railroad Company(s) representative on the project.
6. Cavities adjacent to sheet piling, created by driving of sheet piling, shall be filled with sand and any disturbed ballast must be restored and tamped immediately as required by the Railroad Company(s).
7. Sheet piling shall be cut off at top of tie during construction. After construction and backfilling has been completed, the piling within twelve (12) feet from centerline of track shall be cut off 24" below bottom of tie or 24" below finished grade, whichever is greater. Sheeting, used as a form on a permanent

structure, shall be cut as directed by the Railroad Company(s).

8. The excavation adjacent to the track shall be covered and protected by handrails and barricades, warning lights shall be provided by the Contractor as directed by the Railroad Company(s).
9. Graded backfill material shall be compacted at near optimum moisture content, in layers not exceeding 6 inches in compacted thickness, by pneumatic tampers, vibrator compactors, or other approved means to the base of the railroad subgrade. Material in the vicinity of sheet pile shall be compacted to not less than 95 percent of AASHTO T 99, Method C. The Contractor shall be required to supply, to the job site, ballast stone as prescribed herein to be installed by the Railroad Company(s).
10. The Contractor is to advise the Railroad Company(s) of the time schedule of each operation and obtain approval of the Railroad Company(s) for all work to be performed adjacent to MBTA tracks so that it may be properly supervised by railroad personnel.
11. All Drawings for temporary sheeting and shoring shall be prepared and stamped by a Registered Professional Engineer and shall be accompanied by complete design computations when submitted for approval.
12. Particular care shall be taken to avoid erosion or filling of the Railroad Company(s) drainage facilities. Erosion and sediment control in the vicinity of the railroad shall be as approved by the Director of Engineering for MBTA Railroad Operations. Correction of disrupted Railroad Company(s) drainage facilities shall be at the Contractor's sole expense.

MBTA REQUIREMENTS FOR GEOTECHNICAL MONITORING

THE FOLLOWING SPECIFICATIONS ARE REQUIRED FOR ALL PILE DRIVING/EXCAVATING OPERATIONS:

1. Pile driving shall be on a continuous basis for each pile driven. Once a pile is started, it shall be driven or cut off at an elevation not to exceed the plane across the top of the rails of any track within 8'-6" plus 2" for each degree of curvature from centerline of track to the closest edge of the edge or excavation.
2. The monitoring points shall be set up one week before the pile driving or excavation operations begin. The MBTA and the Railroad Company(s) shall be notified. Elevation readings to establish the initial baseline reading shall begin two days prior to the start of driving. Readings shall be for a minimum of two weeks after the completion of the driving or backfilling of the excavation, whichever is longer. Initial readings immediately after any surfacing operations shall serve as new baseline figures. All future elevation readings shall be compared to the adjusted baseline. If the track deviates to a condition that is unacceptable to the MBTA or Railroad Company(s), corrections shall be made at the Contractor's expense.
3. Elevation readings shall be taken from the top of each rail of each track within the "zone of influence" the excavation. See Section 1, Page 1 of this specification.
4. Elevation readings will be taken once per eight hour shift. The readings shall be faxed to the MBTA Railroad Company(s) on a daily basis and all information is to be presented in legible print. During excavation within the sheet pile protected area, the top of rail elevations shall be checked every hour. Additional readings may be required by the MBTA or Railroad Company(s).
5. Stations shall be spaced at 15-1/2 foot intervals. The number of distractions required will be determined by the length of the excavation parallel to the tracks. There will be four additional stations on each end of the pile driving/excavation operation along the track. Extra stations may be required by the MBTA or Railroad Company.
6. Elevation readings must show the date, time, weather conditions and temperature. Each reading must also provide the following information: track number, compass direction, station number, base elevation (with date), static elevation, change in elevation (recorded in hundredths and in inches), dynamic reading and total deflection in inches. See sample sheet attached.
7. Station "0" will be located at the centerline of the project with Stations 1, 2, 3, etc., being to the right and Stations -1, -2, -3, etc., being to the left when

standing on the near track and looking at the work. In multiple track areas the stations as determined herein are to be carried across each track located within any part of the zone of influence. See Plate I.

8. At each monitoring station a dynamic load measurement shall be taken. The dynamic load measurement device shall consist of a wooden stake placed firmly in the ballast and in initially in contact with the bottom of the rail. The loaded measurement is the resultant gap between the bottom of the rail and the top of the stake caused by the deflection of the rail under the load of a passing train. Based on field observations of the excavation, and at the option of the MBTA or railroad company(s), this requirement may be reduced.
9. Elevation readings taken from the top of rail for static measurement and the dynamic reading shall be combined and the sum compared to the adjusted baseline. This reading will demonstrate the difference in elevation caused by the excavation.
10. The MBTA requires that the track be maintained at all times within established criteria for the specific track classification. At the completion of the project the requirement for tamping and realigning the tracks, caused by the settlement from the construction activity, remains with the Contractor for the duration as specified by the MBTA in their initial review of the Construction Drawings. This tamping and track realignment will be performed by the MBTA or railroad company(s) at the sole expense of the Contractor.



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VIII

BLASTING SPECIFICATIONS

Blasting on, over, under, within or adjacent to MBTA Railroad Property will be permitted only in special cases where it is demonstrated to the Director of Engineering for MBTA Railroad Operations that there is no practicable alternative to perform the work.

In such cases when blasting is permitted, the Contractor must submit a detailed blasting program to the MBTA and Railroad Company(s) for approval prior to the commencement of any work. The blasting program must contain the following information:

- a. Site plan with location of nearest MBTA structure.
- b. Plan of each blast showing hole spacing and delay pattern.
- c. Diameter and depth of each hole.
- c. Amount of explosives per hole.
- d. Total pounds of explosives per day.
- e. Total amount of explosives per blast.
- f. Type of non-electric delays to be used.
- h. Amount of stemming in each hole.
- g. Type of explosive to be used.
- h. Soil and rock profile in blast zone.
- i. Scaled distance to the nearest MBTA facility.
- j. Type and location of seismograph to be used.
- m. Size of blasting mats to be used.
- k. Safety precautions to be followed.

The following general requirements are to be adhered to:

- a. Obtain the services of a qualified vibration and blasting consultant to monitor the blasting.
- b. Use a non-electric detonation system whenever possible. If electric caps are used, a check must be made for stray currents, induced current and radio frequency energy to insure that this hazardous extraneous electricity is at an acceptable safe level.
- c. Provide an open face for maximum relief of burden.
- d. Limit the maximum peak particle velocity to 1 inch per second. Depending on existing conditions, this may be modified to 2 inches per second.
- e. Maintain an initial scale distance of 60 ft. per 1-1/2 lbs. After initial blasting, scale distance may be modified to a minimum of 50 ft. per 1-1/2 lbs., if conditions permit.

Scale distance -- Distance from blast to structure (in feet)

Weight of explosives per delay (in pounds)

The Contractor shall provide for a pre-blast and post blast survey, including photographs. An inspection of all nearby MBTA facilities shall be made to determine any changes that may occur due to blasting operations.

The Contractor shall coordinate all blasting with the MBTA and Railroad Company(s) in advance to determine when the charges may be set. The Contractor is advised that the MBTA and Railroad Company(s) use two way radios for train control. The radios operate in the 160 MHz area. These radios cannot be turned off at any time.



**MASSACHUSETTS BAY
TRANSPORTATION
AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

IX

TEMPORARY PROTECTION SHIELDS FOR DEMOLITION AND CONSTRUCTION

The Railroad Company(s) will determine when and where protection shields are required. The designated construction of temporary protection shields must adhere to the following specifications:

1. The construction of temporary protection shields shall be designed to prevent any dust, debris, concrete, formwork, paint, or tools from falling on MBTA Railroad Property below.
2. The temporary protection shields shall be erected prior to the start of work. The Railroad Company(s) will determine whether or not sufficient protection has been provided to perform the work over any particular area.
3. The temporary protection shields shall remain in place until all work over the railroad has been completed and shall be removed only when ordered by the Railroad Company(s).
4. To minimize the inconvenience to the users of any properties below and adjacent to the project, the Contractor shall be required to complete the actual erection and removal of the temporary shields within time limits acceptable to the Railroad Company(s).
5. The erected temporary protection shields shall not infringe on any existing minimum vertical clearance.
6. The Contractor shall be required to obtain the approval of the Railroad Company(s) before commencing any work beneath the shield. In certain areas, depending on the nature of the work, the Railroad Company(s) may require a specific method of protection.
7. The horizontal shield shall be designed to carry a live load of 100 pounds per square foot and a single concentrated load of 2,000 pounds located to produce maximum stress. The vertical shield shall be designed to carry a wide load of 30 pounds per square foot.
8. Prior to the start of construction, the Contractor shall be required to submit the details of the temporary protection shield to the Railroad Company(s), who will review and approve the details only as to the methods of erection and as to whether or not the proposed installation will provide the level of protection required at the various locations. It is the Contractor's responsibility to design these protections so that they are in conformance with all existing laws, regulations and specifications that govern this type of work. Shield plans must include a material list and shall be designed by a Registered Professional Engineer. The Drawings and calculations must bear their seal when they are submitted to the Railroad Company(s).
9. If during the actual construction, the Railroad Company(s) deems that the shield is not providing the desired level of protection or that the Contractor has failed to properly maintain the shield, all work at the

affected location shall cease until corrective measures acceptable to the Railroad Company(s) are instituted.

10. All temporary shields shall be constructed using new material.



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RAILROAD OPERATIONS DIRECTORATE

X

INDUSTRIAL SIDE TRACK SPECIFICATIONS

SECTION 1. GENERAL

- 1.01 All railroad track construction shall be performed under competent supervision of personnel experienced in railroad construction and shall conform to the standards of the MBTA. The MBTA and Railroad Company(s) will inspect and approve all side tracks prior to being put in service. This specification shall be used for side tracks directly on or within 15 feet of the MBTA property line. Any construction outside of the MBTA property line shall be in compliance with the standards of the serving freight railroad.

SECTION 2. MATERIALS

2.01 MATERIAL

Rails, ties, switches, frogs, etc. shall conform to the standards of the MBTA for various types of turnouts and track installations thereby insuring replacement availability.

2.02 RAIL

The rails shall be 100# ASCE Section or of a heavier rail section in common use, new or relay. Relay rails shall not have more than 1/4" top wear measured vertically along center line of rail and not more than 3/8" side wear measured horizontally 3/4" below the normal top of rail. Rails shall be free from kinks, excessive rust and excessive head flow. Rails having line or surface bends that cannot be spiked will be rejected. Rail shall be free of internal defects. Rail used on the limits of MBTA Railroad Property shall be equal in weight and in section to the attached main line.

2.03 CROSS TIES

Cross ties shall conform to MBTA specifications, minimum size shall be 7" x 8" x 8'6" and shall be treated with creosote in accordance with MBTA specifications. Relay ties may be approved after inspection by the MBTA and Railroad Company(s) prior to installation.

2.04 SWITCH TIMBER

Switch timber shall be new hardwood and conform to MBTA specifications 7" x 9" and of lengths required by MBTA standard turnout bill of materials. All timber shall be creosote treated as specified for cross ties. Relay timber as above.

Tie plates shall be new or relay at least 7-1/2" x 10-3/4", 1/2" thick,

double shoulder and should be canted. Tie plates must conform to MBTA specifications. Damaged plates or plates showing more than 25% reduction in section due to corrosion or wear will be rejected.

2.06 JOINT BARS

Joint bars shall be new or relay, 100% toeless, 24" long or equal and conform to MBTA specifications. Relay bars must be free from appreciable wear. Joint bars shall have a minimum of four holes and the holes are to fit the punching's of the rail. Holes to have a clearance of 1/16". Joint bars that cannot be drawn up to give a tight fit will be rejected. No fewer than 4 bolts per joint will be allowed.

2.07 BOLTS, NUTS AND WASHERS

Bolts and nuts shall be new and of a size to fit the rail punching's. They shall conform to AREA specifications for low carbon steel track bolts and nuts. Washers shall be new spring type of appropriate size and shall conform to MBTA specifications.

2.08 TRACK SPIKES

Track spikes shall be 6" long, 5/8" square with an oval head and conform to MBTA specifications for soft steel track spikes. Tangent track shall have at least 2 rail holding spikes per tie plate and all curves over 3" shall have 3 spikes per tie plate.

2.09 BALLAST

Ballast shall conform to MBTA Material Specification 9248.

2.10 BUMPING POSTS

Bumping posts shall be Hayes type, Durable "D" or equal, unless otherwise specified, and will conform to MBTA Material Specification 9206.

2.11 DERAIL

Type and quality of derail shall be specified for each individual side track requirement. Derail shall be connected into the railroad signal system, which will be performed by the Railroad Company(s) at the Owner's expense. Two pairs of insulated joints shall be installed by the Contractor at a location to be determined by the MBTA. Side tracks with a descending grade toward the main track shall require a split switch type derail.

SECTION 3. INSTALLATION

- 3.01 The track shall be properly installed with a standard gauge of 4'8-1/2" except on sharp curves. In cases of sharp curves, gauge will be specified by the MBTA or the Railroad Company(s).
- 3.02 Ballast shall be installed on top of subgrade for a depth of at least 6" below the bottom of tie and brought up to the top of the tie at the center and slope off to 1" below top of tie at the ends. It shall then extend 1' beyond the end of the tie at that height, at which point it shall slope off at a rate of 2:1 to the sub- ballast.
- 3.03 Cross ties shall be placed not more than 24" on center on tangent track and 19 ½ " on center on curved track. When relay rails are used the unworn side shall be placed on the gauge side. Tie plates shall be installed on each cross tie. The center of the joint shall be installed so as to be suspended by two ties.
- 3.04 It shall be the responsibility of the builder of that portion of track designated as "property line to end" to connect to that portion of track designated as "clearance to property line" and provide the necessary joints or compromise joints with bolts as the weights of rail would dictate.

SECTION 4. BONDING

- 4.01 Where track bonding is necessary, it will be performed by the Railroad Company(s) in accordance with MBTA standards.

SECTION 5. APPROVAL

- 5.01 Plans for track installation must be approved by the MBTA and Railroad Company(s) before the design of the facility to receive rail service is finalized.

SECTION 6. CURVATURE OF TRACK

- 6.01 The recommended curvature shall be 8° or less. The maximum allowable degree of curve is not to exceed 12° 30', unless approved by the Director of Engineering for MBTA Railroad Operations.

SECTION 7. GRADE OF TRACK

- 7.01 The maximum allowable grade for all tracks shall not exceed 1.5% descending towards mainline or 3% descending from mainline using 100 foot vertical curves.

SECTION 8. ELEVATION

- 8.01 Super elevation shall not exceed 1 inch.

SECTION 9. SUBGRADE

- 9.01 Subgrade shall be prepared to a grade 18" - 20" below the proposed top of rail and shall be of a material that is compacted to 95% and provides for adequate drainage.

SECTION 10. ACCEPTANCE

- 10.01 Before track is placed into service to receive cars, it shall be inspected and approved by a qualified track inspector from the MBTA, the Railroad Company, and the freight carrier.
- 10.02 No exceptions to these specifications are authorized without the written approval of the Director of Engineering for MBTA Railroad Operations.



**MASSACHUSETTS BAY
TRANSPORTATION
AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

XI

RIGHT OF WAY FENCING SPECIFICATIONS

SECTION 1. GENERAL

1.01 DESCRIPTION

This section specifies the furnishing and installing of new Type I galvanized steel or Type II aluminum coated steel chain link fence. Right of way fence shall be 6', 8' or 10' as required by site specific conditions.

1.02 SUBMITTALS

Shop Drawings

1. Include cross sectional dimension of posts, braces, rails, fittings, accessories and gate frames, design of gates, and details of gate hardware.
2. Include a layout drawing showing the spacing of posts and location of all gates, abrupt changes in grade, and all corner, gate, anchor, end and pull posts.

SECTION 2. PRODUCTS

2.01 MATERIALS

A. General

1. Steel pipe dimensions and weights: ASTM A-53, Schedule 40 (except the hydrostatic testing requirement is waived). Dimensions specified are outside diameter (O.D.).
2. Provide post with accepted semi-steel or pressed steel tops, so designed as to fit securely over post and carry top rail or spring tension wire; the base of post top fitting shall fit over the outside of post and shall exclude moisture from post. All fittings and accessories shall be hot dipped galvanized in accordance with ASTM A-53.

B. Line Post: For all post heights, unless otherwise noted, Schedule 40, 2.375" O.D. pipe weighing 3.65 lbs./ft. ASTM A-53 with a 2 oz. hot dipped galvanized coating shall be used.

C. Gate post: Furnish post to support single gate leaf, or one leaf of a double gate installation, for the following gate widths:

<u>Leaf Width</u>	<u>Gate Post</u>	<u>Sch. 40</u>
up to 6'	2.875" O.D.	5.79 lb./ft.
6' to 12'	4.000" O.D.	9.11 lb./ft.
12' to 18'	6.625" O.D.	18.97 lb./ft.
18' to 32'	8.625" O.D.	28.55 lb./ft.

D. End, Corner and Intermediate Posts

For all post heights, unless otherwise noted, Schedule 40, 2.875" O.D. pipe weighing 5.79 lbs./ft. ASTM A-53 with a 2 oz. hot dipped galvanized coating shall be used.

E. Top rail and Spring Tension Wire

1. Top Rail

- a. Schedule 40, 1.66" O.D, pipe weighing 2.27 lbs./ft. ASTM A-53 with a 2 oz. hot dipped galvanized coating.
- b. Couplings and expansion sleeves: Outside sleeve type, minimum six inches long.

- 2. Spring tension wire: shall be marcelled (spiraled or crimped) #7 gauge (.177 inches) plus or minus 0.005 inches in diameter. ASTM A-824. 1.2 oz. zinc per sq. ft.

F. Braces and Tension Rods

- 1. Compression braces: Same type and size as top rail.
- 2. Tension rods: 3/8" round rods with drop forged turnbuckles or other approved type of adjustment.

G. Fence Fabric

- 1. Type I galvanized steel ASTM A-392 Class 2 coating 2 oz.
 - a. Typical-2" diamond mesh 6 gauge (192") 2 oz.
 - b. Hot dipped galvanizing after weaving.
- 2. Type II aluminum coated steel ASTM A-491 size 2. 3/8" mesh.
- 3. Selvages: All types
 - a. Fabric shall be knuckled at both selvages.
 - b. Fabric over 60 inches high: knuckled at one selvage and twisted and barbed at the other.

H. Fabric Bands, Brace Bands and Stretcher Bars

- 1. Fabric Bands: 12 gauge pressed steel 7/8 inch wide.
- 2. Brace Bands: 11 gauge pressed steel 1 inch wide.
- 3. Stretcher Bars: 3/16" x 3/4" galvanized steel.

- I. Tie wire and miscellaneous Items
 - 1. Tie Wire: Galvanized steel 6 gauge (.192") for post and rails.
 - 2. Hog rings: Galvanized steel 6 gauge (.192") for spring tension wire.
 - 3. Rail and Truss Cups: Galvanized semi-steel or pressed steel.
- J. Barbed Wire and Extension Arms
 - 1. Barbed Wire; ASTM A121, 12-1/2 gauge, 4-point round barbs, Class 3 coating.
 - 2. Extension Arms: Projecting at an angle of approximately 45 degrees, fitted with clips or other means of attaching three strands of barbed wire, the top outside wire approximately 12 inches from the fence line and the other wires spaced uniformly between the top outside wire and the fence fabric.
- K. Gates
 - 1. General: Furnish gates complete with necessary hinges, latches, and drop bar locking devices; corners shall be welded or fastened and reinforced with suitable fittings.
 - 2. All gates fabricated from 1.90" O.D. Schedule 40 pipe weighing 2.72 lbs./ft. with a 2 oz. hot dipped galvanized coating.
- L. Concrete: Class 2500 psi concrete consisting of aggregate passing the No. 8 sieve.

SECTION 3. EXECUTION

3.01 INSTALLATION

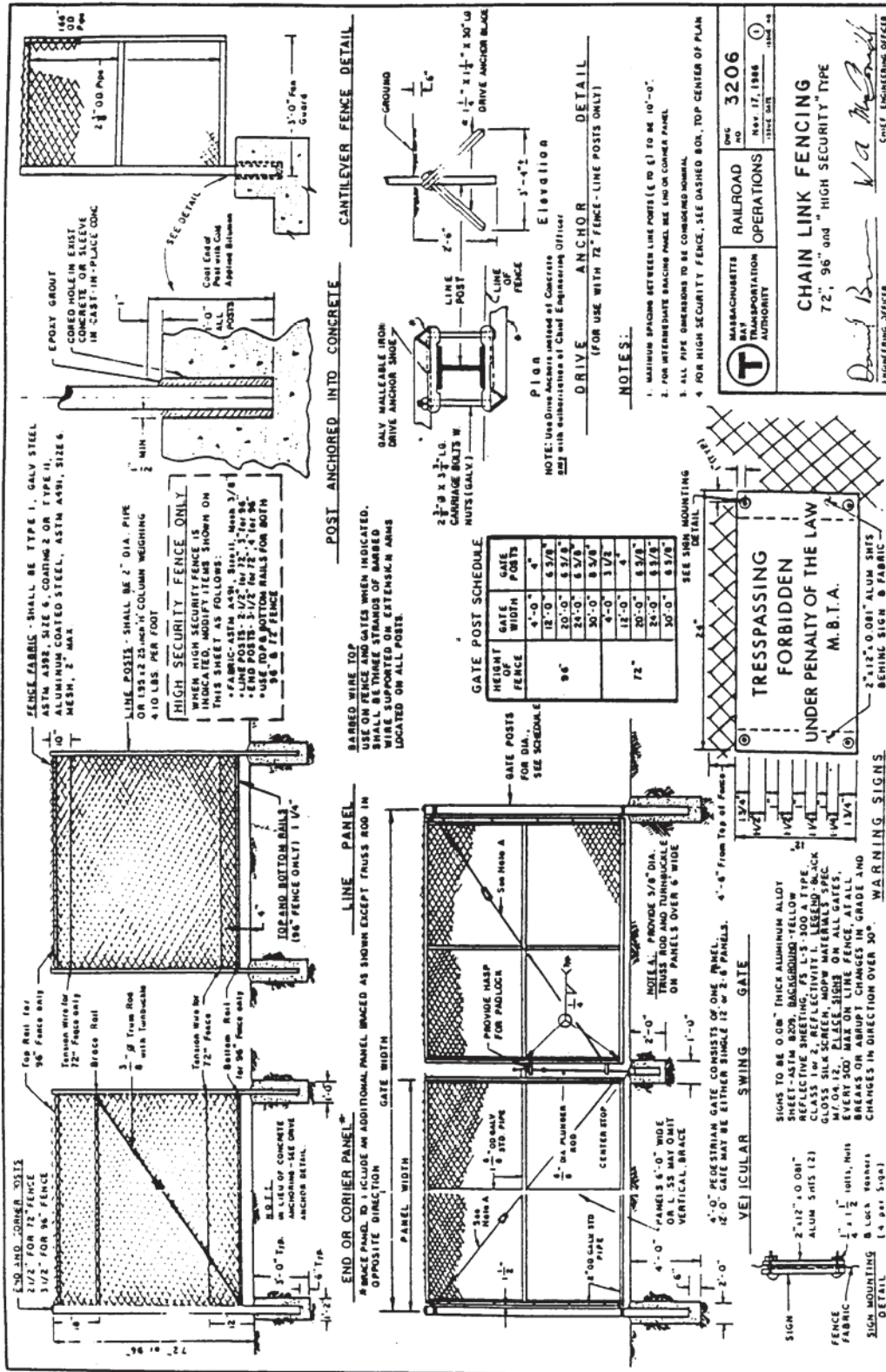
- A. Place terminal post at each end, corner, gate post, pull post (minimum 500'), or any change in grade or direction greater than 30 degrees.
- B. Line posts shall be spaced on a maximum of 10 foot centers. In determining the post spacing, measure parallel to slope of finished grade. All posts to be set plumb and in line. Post spacing on radius as follows:

200'- 500' radius 8' O.C.
100' - 200' radius 6' O.C.
less than 100' radius 5' O.C.

- C. When fencing is installed on the top of concrete structures, use galvanized sleeve and grout posts or install with suitable galvanized flange casing and galvanized anchor bolts. Set all other posts permanently in concrete.
- D. Excavate post hole footings at least 12" in diameter for line post and 16" for terminal and gate posts up to 4" O.D. Larger gate posts require 18" diameter footings. All footings excavated to a depth of 42" with a minimum post embedment of 36". Crown top of concrete to shed water and allow curing for not less than 72 hours before proceeding with further work on the post.
- E. Brace end, corner pull, and gate posts to the nearest line post with diagonal or horizontal brace rails used as compression chambers, and with truss rods with turnbuckles used as tension members. Brace line posts horizontally and truss in both directions as required, at approved intervals.
- F. Install fabric on post side which best secures MBTA's Railroad Property. Pull fabric taut and tie to all line posts, rails, braces and spring tension wire spacing all ties at 12" intervals. Use hook shaped steel ties confined to the diameter of the pipe to which it is attached, clasping pipe and fabric firmly with both ends twisted at least 2 turns.
- G. Barbed wire and tension wire must be taut and properly secured with brace bands at each terminal and gate post.
- H. Electric Ground: Where a power line carrying more than 600 volts passes over fence, install ground rod at the nearest point directly below each point of crossing. Ground all substation fences and gates and perform other electrical grounding as indicated.

3.02 TOUCH-UP AND REPAIR WORK

Remove and replace fencing which is improperly located or is not true to line, grade and plumb within tolerances as indicated.





**MASSACHUSETTS BAY
TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

XII

TEST BORINGS SPECIFICATIONS

SECTION 1. GENERAL

All borings on MBTA Railroad Property are to be performed according to the following requirements:

- 1.01 Work on MBTA Railroad Property must be performed with a Railroad Company(s) inspector and/or flagman present.
- 1.02 Where access can only be gained by crossing the tracks, a temporary crossing must be used. This crossing shall adhere to the following:
 - A. The location and material must be approved in advance by the Chief Engineering Officer or Railroad Company(s).
 - B. The crossing will be constructed by Railroad Company(s) forces at the Contractor's expense.
 - C. The crossing must be protected at all times when not in use. Access shall be prohibited through the use of right-of-way gates which will be constructed by Railroad Company(s) forces at the Contractor's expense.
 - D. No crossing of the track shall be made without a railroad flagman and/or inspector present.
 - E. The crossing of tracks shall be kept to a minimum.
- 1.03 Boring locations, including positioning of the boring rig, shall be kept at least 8'-6" from the center line of track.
- 1.04 All borings must be cased to insure adequate return (of mud and water) and to avoid undermining of the track.
- 1.05 All holes shall be backfilled with cement grout to fill the voids and protect against an artesian condition.
- 1.06 The location of all utilities owned or private, shall be located and suitably marked by the Railroad Company(s) and/or the private owner at the Contractor's expense to avoid damage to the utility and/or track structure.
- 1.07 Prior to entry upon the MBTA Railroad Property, all necessary contracts, insurance policies and financial obligations shall be provided in a form acceptable to the Railroad Company(s).
- 1.08 Work within the operating right-of-way that has potential to foul the tracks, shall be restricted to periods of non-peak passenger operations.

- 1.09 While performing the work, full cooperation with the inspector and flagman is essential. The work will be terminated immediately if the safety of all traffic and personnel is jeopardized in any way.

SECTION 2. TESTING

- 2.01 Soil borings shall be in accordance with the current issue of the American Railway Engineering Association Specifications, Chapter 1, Part 1, "Specifications for Test Borings". Soils shall be investigated by the split-spoon and/or thin-walled tube method and rock shall be investigated by the Coring method specified therein.
- 2.02 Soil boring logs shall clearly indicate all of the following:
1. Boring number as shown on boring location plan.
 2. Elevation of ground at boring.
 3. Description or soil classification of soils and rock encountered.
 4. Elevations or depth from surface for each change in strata.
 5. Identification of where samples were taken and percentage of recovery.
 6. Location of ground water at time of sampling and, if available, subsequent readings.
 7. Natural dry density in lbs./sq. ft. for all strata.
 8. Unconfined compressive strength in tons/sq. ft. for all strata.
 9. Water content (percent). Liquid Limit (percent) and plastic limit (percent).
 10. Standard penetration in blows/ft.
- 2.03 Soil boring logs shall be accompanied by a plan drawn to scale showing location of borings in relation to the tracks, the elevation of ground surface at each boring, and the elevation of the top of rail of the tracks.
- 2.04 Soil investigation by auger, wash, or rotary drilling method is not acceptable.
- 2.05 Borings shall be taken no more than two (2) feet from the field stake which marks the boring location. The stake should not be disturbed during boring operations. Lost stakes shall be reinstalled.
- 2.06 Unless a boring hole is actively being worked, it shall be securely covered or otherwise protected until permanently filled. When work at each boring hole is completed, the hole shall be properly filled.
- 2.07 Access to the boring locations must be approved by the Railroad

Company(s). When possible, access shall be from public roads. Licenses for Entry, Insurance and Flag Protection must be obtained by the Contractor in accordance with all applicable MBTA Specifications.

- 2.08 Boring operations shall be confined to each boring location to the extent possible.

The Contractor shall take necessary precautions to prevent damage to structures and facilities. The site shall be restored to a condition satisfactory to the Railroad Company(s).



**MASSACHUSETTS BAY
TRANSPORTATION
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RAILROAD OPERATIONS DIRECTORATE

XIII

FIBER OPTIC CABLE SPECIFICATIONS

SECTION 1. GENERAL

- 1.01 The purpose of the following standards is to provide basic information about the MBTA's requirements with respect to the design and construction of fiber optic cables on MBTA Railroad Property to fiber optic cable companies and their Contractors.
- 1.02 All work performed on or affecting MBTA Railroad Property must be designed and constructed in accordance with the Commuter Rail Design Standards (Vol. I and II), MBTA Book of Standards, Railroad Operations Specifications and the following standards. Additional job specific requirements will be contained in the MBTA's Fiber Optic License Agreement and can be obtained by contacting:

AGM for Real Estate and Asset Development
Ten Park Plaza
Boston, MA 02116

The Director of Engineering for MBTA Railroad Operations or their designated representative will be responsible for the approval of all work. No modifications, changes or deletions will be made without their approval.

SECTION 2. PROJECT REVIEW AND COORDINATION

- 2.01 All Drawings and specifications shall be reviewed and approved by the MBTA and Railroad Company(s) prior to construction. The MBTA must approve the construction schedule and sufficient Railroad Company(s) personnel must be available before work begins.
- 2.02 If another fiber optic cable company has previous or exclusive rights along the proposed route, the alignment and cable location must be approved in accordance with existing agreements.
- 2.03 The fiber optic cable companies must coordinate the construction with others to minimize the disruptions to the MBTA railroad operations.

SECTION 3. CONDUCT OF WORK

- 3.01 In order to minimize the manpower requirements of the Railroad Company(s) and afford better control, supervision, and protection, the Contractor will conduct their work sequentially and minimize the number of crews and their proximity. Crews should be confined geographically to an area that can be covered easily by a minimum number of Railroad Company(s) personnel. This can be accomplished by a block method of construction. A construction block will be used and is a 1-4 mile segment of right of way in which up to 3 fiber optic cable installation crews can work. The crews can work within the construction block, but cannot work outside of it. The construction block

must move as a unit along the right of way. The crews cannot work two blocks concurrently.

SECTION 4. CONSTRUCTION SCHEDULE

- 4.01 The fiber optic company or its Contractor will submit a schedule of work to the MBTA for approval. The schedule will be based on methods of construction acceptable to the MBTA and Railroad Company(s). No work shall begin prior to approval by the MBTA.
- 4.02 Any changes or modifications to the schedule proposed by the fiber optic company or its Contractor must be submitted to and approved by the MBTA prior to implementation. The MBTA, however, may be required to change or modify the construction schedule on account of its operations, maintenance requirements, or manpower shortages. In this event, the MBTA will give the fiber optic cable company as much advance notice as possible.
- 4.03 Construction schedules will be reviewed and updated every two (2) weeks or as required.

SECTION 5. ESTIMATE OF EXPENSES

- 5.01 An estimate of anticipated expenses will be provided based on durations provided by the fiber optic cable company or their Contractor and construction schedules approved by the Railroad Company(s). Any changes in the schedule will cause the estimate to be revised. The fiber optic cable company or their Contractor will be responsible for all of the costs incurred by the MBTA and Railroad Company(s) in support of the construction activities. This includes design review, engineering support, administration and supervision.

SECTION 6. BILLING

- 6.01 The fiber optic cable company or its Contractor will be required to pay for railroad protective services in advance of costs incurred.

MBTA FLAGGING REQUEST FORM

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**Massachusetts Bay
Transportation Authority**



Flagging Request

Date: _____

Company/Agency: _____

Project Name: _____

Project Location: _____

Point of Contact: _____

Email: _____ Phone: _____

Project Number: _____ Funding Source: _____

RAILROAD OPERATIONS TRACKING NUMBER _____

Date Needed: _____

Start/Finish: _____

Flaggers Required: _____

Scope of Work:

(Attach additional SOW, if necessary.)

Schedule:

(Attach additional info, if necessary.)

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MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 1

APPENDIX M

MBTA SPECIAL INSTRUCTIONS

MARCH 2003

Table of Contents

LETTER OF TRANSMITTAL REGARDING SPECIAL INSTRUCTIONS.....	2
1. ACCESS TO AUTHORITY PROPERTY.....	2
2. INSURANCE REQUIREMENTS.....	6
3. SUBMITTAL OF SPECIFICATIONS, DRAWINGS, DESIGN AND METHODS OF CONSTRUCTION..... (Applies to non-MBTA Construction Contracts. MBTA Construction Contracts are covered under Division I)	6
4. OPERATIONAL RESTRICTIONS.....	7
5. PROTECTION SERVICES.....	10
6. ANNUAL CERTIFICATION OF HI-RAIL EQUIPMENT.....	11

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 2

MBTA SPECIAL INSTRUCTIONS

APRIL 2003

LETTER OF TRANSMITTAL REGARDING SPECIAL INSTRUCTIONS

The Subway Operations, Bus Operations, Safety, Systemwide Maintenance & Improvements, Operations Support, and the Design and Construction Departments of the MBTA have determined that certain limitations regarding Contractor's activities are required while working on a construction project.

These Supplementary Conditions are included herein to augment the MBTA Standard Specifications, Division I - General Requirements, Section 00700 General Conditions, Article 6 - Prosecution and Progress, Paragraph 6.04 Limitations of Operations with additional information, which is applicable to construction projects.

However, for non-MBTA construction projects where Division I does not apply, such as in the case of rights to construct on MBTA property granted under a lease or license agreement, the enclosed Special Instructions are still applicable unless otherwise directed.

Contract drawings and specifications for non-MBTA construction projects, relative to all work that will be performed within or directly adjacent to MBTA property, must be submitted to the Authority's Chief Engineer of Design and Construction, Director of Subway Operations, Director of Bus Operations, Director, of Systemwide Maintenance & Improvements, Director of Operations Support, Director of Safety, and the Director of Real Estate. The addresses and phone numbers are listed on the next page. The special instructions contain information to be complied with by the owner, contractors, and others associated with the project.

Applicable provisions of the special instructions plus additional requirements from other MBTA departments must be included in the contract specifications as instructions to the contractor when performing work on or adjacent to MBTA property. Permission to perform work on MBTA property will be granted by the Director of Real Estate only when contract plans and specifications are approved by the MBTA.

The enforcement of any of the following conditions shall not be construed as waiving any of the rights of the Authority in any of the other conditions of an MBTA contract.

A meeting to further discuss MBTA requirements may be arranged by contacting the offices of those listed in Article 1.a. and/or b. herein.

1. ACCESS TO AUTHORITY PROPERTY

- A. For MBTA Contractors Only: An owner or Contractor who wishes permission to enter upon or perform work over, on, under or adjacent to Authority property shall submit to the offices of the Authority's Chief Engineer of Design and Construction, the Director of Bus Operations, the Director of Subway Operations, Director of Systemwide

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 3

Maintenance & Improvements, and the Director of Operations Support, a request in writing, a minimum of forty-two (42) days prior to the owner or the Contractor's planned commencement of any of the above stated activities. Addresses of the above are as follows:

MBTA's Chief Engineer of Design and Construction
6th Floor
10 Park Plaza
Boston, MA 02116
617 222-3116

Director of Systemwide Maintenance & Improvements
500 Arborway
Jamaica Plain, MA 02130
617 222-5454

Director of Subway Operations
10th Floor
45 High Street
Boston, MA 02110
617 222-4554

Director of Bus Operations
10th Floor
45 High Street
Boston, MA 02110
617 222-3368

Director of Operations Support
10th Floor
45 High Street
Boston, MA Q2110
617 222-5460

Director of Safety
2nd Floor
21 Arlington Avenue
Charlestown, MA 02129
617 222-4244

- B. Non-MBTA Construction Contractors For Lessees or Licenses of the MBTA Only: An owner or Contractor who wishes permission to enter upon or perform work over, on, under or adjacent to Authority property shall submit to the offices of the MBTA's designated representative for real estate listed below, a request in writing, a minimum of forty-two (42) days prior to the owner or the Contractor's planned commencement of any of the above stated activities. The designated representative will distribute plan sets to the above MBTA departments and will coordinate departmental approvals. Application forms and instructions for obtaining access to MBTA property

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 4

can be obtained by visiting the designated representative's website listed below and selecting "MBTA" and "Licensing."

License Administrator
Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116
617-316-1654
www.mbtarealty.com

The designated representative reports directly to:

MBTA Director of Real Estate
5th Floor
10 Park Plaza
Boston, MA 02116
617 222-3255

- C. Requests shall specify the name of the owner or the contractor, the reasons for entering the property, where the property will be entered, each individual location where work of a different nature is to be performed, the nature of such work, and the number of days, including time schedule, the owner or the contractor intends to remain on the property at each location. The Authority will process such requests and meet with the owner or contractor to work out a schedule and phasing for the work plus other arrangements including financial. The Authority shall request a list of the names of each individual who will enter upon or perform work on Authority property.
- D. The owner or contractor shall notify the representative of the Design and Construction Department and the appropriate Operations Director at least seventy-two (72) hours prior to entering the property as agreed upon earlier with the Authority. The owner or contractor shall notify the Design and Construction, and Operations Departments immediately if the job is to be closed down unexpectedly and shall again notify the Authority as specified above when work will commence.
- E. The owner or contractor shall make all necessary arrangements with the Authority before entering upon the property and perform the work in accordance with an MBTA approved work schedule. The owner or contractor shall not enter MBTA property or perform any work on Authority property without the presence of an assigned MBTA representative from the Design and Construction Department or the Operations Department who is responsible for monitoring the work of that owner or contractor for the Authority. Working on Authority property without an assigned MBTA representative present shall be cause for immediate eviction from the property.
- F. The owner or contractor must have in place a method of payment for all Authority support services such as flagging, work trains, power shut offs, etc., prior to commencement of any work. This will be processed through a written force account agreement between the Authority and the owner or contractor prior to commencement of work. Direct billing to contractors for Authority support services requires the contractor's authorized representative to agree in writing that the company will reimburse the Authority for those support services, including overhead and fringe benefits. Once the Authority receives the signed statement from the contractor, the General Accounting

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 5

Office will open a reimbursable account for specific Authority department(s) to charge costs, and the contractor will be billed directly.

- G. The work associated with this project, except as hereinafter expressly provided, will be done without interruption of or change in the regular work or operation of vehicles of the Authority. No work shall be done affecting the operations of vehicles or operations of stations until the contractor has submitted details of his procedures to the Design and Construction and the applicable Operations representatives thirty (30) working days prior to start of work and has secured written permission to proceed.
- H. The Authority reserves the right to require work affecting the safety of the operations to be performed at prescheduled non-operating periods from approximately 1:30 a.m. to 5:00 a.m. daily (1:30 a.m. - 4:30 a.m. effective); 1:30 a.m. to 6:00 a.m. Sunday (1:30 a.m.-5:30 a.m. effective). The contractor will not be permitted to remain within the track right-of-way after 5:00 am. (6:00 a.m. Sunday). The Authority may, during emergencies or at times when the Authority work forces are required to work in the area of the contractors work, order the contractor to cease work and remove his work forces and equipment from the property leaving the right-of-way in a safe operating condition. The Authority also reserves the right to stop or postpone any contractor's previously approved work if, in the Authority's opinion, such work is being performed in a manner that will endanger and/or delay the Authority's regular work or operations.
- I. The owner or contractor shall make their own provisions for electric power, compressed air, water, ventilation, and disposal of seepage water. No use of existing MBTA utilities will be permitted unless approved in advance by the Authority.
- J. The owner or the contractor's attention is directed to other projects that will be ongoing simultaneously in the work area. The Authority will determine priorities for site access between this project and others.
- K. The Authority reserves the right to deny the contractor access to the right of way because of operational requirements, adverse weather conditions or emergency track, signal, and power repairs. The contractor shall reasonably expect to be denied access to the site a total of 10 (ten) days per calendar year, this does not include the following holidays; New Year's Day, President's Day, Patriot's Day, Memorial Day, Bunker Hill Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, and Christmas Day. In addition, right of way access may be denied on days when various Special Events impact service as well as during Red Sox home games on the Green Line.

Furthermore, the contractor shall also expect to have his access to the site delayed a total of 4 (four) times per month. Each delay shall be 60 (sixty) minutes or less. The contractor shall make allowances for these possible events in their bid. Due to increased stopping distances associated with slippery rail conditions, non-emergency access will not be allowed within ten (10) feet of the centerline of the track under adverse weather conditions.

- L. The contractor shall perform his work at all times so as to cause no interruption of service during operating hours and shall at all times after performing work during either operating hours or non-operating hours leave the Authority's property in a clean and safe operating condition.

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 6

- M. On occasion, the Authority will operate work cars, test trains, security trains, and/or hirait Vehicles in, the area of the work. At no time during these occurrences will the contractor be allowed to work on the right-of-way, except with the approval of the Authority or the Authority personnel providing protection services as defined in Protection Services.

2. INSURANCE REQUIREMENTS

- A. The owner or Contractor's for MBTA Construction Contracts insurance requirements shall conform to the latest version of MBTA Standard Specifications, Division 1 - General Requirements, Section 00700 General Conditions, Article 5 Legal Relations and Responsibility to the Public, Paragraph 5.04 Insurance Requirements. Owners or Contractors under a lease or license agreement with the MBTA shall provide insurance in accordance with the requirements of said agreement.

3. SUBMITTAL OF SPECIFICATIONS DRAWINGS, DESIGN AND METHODS OF CONSTRUCTION

(Applies to non-MBTA Construction Contracts. MBTA Construction Contracts are covered under Division I)

- A. An owner or contractor or others performing a non-MBTA construction contract that requires performing construction over, on, under or adjacent to the Authority's property shall submit to both the Design and Construction Department and to the appropriate Operations Department two (2) sets each of contract drawings and specifications at the 30%, 60%, 90% and 100% phases of design of the project. 100% drawings and specifications must be submitted forty-two (42) days prior to the planned commencement of any work.
- B. The contractor's drawings and specifications shall define the work in detail and a Professional Engineer registered in the Commonwealth of Massachusetts shall stamp the final drawings. The contractor or owner shall also submit a crane or heavy equipment location, if used, with dimensions to the face of abutments and structures and calculations of crane equipment loading on Authority structures showing no adverse effect on any structures. All calculations shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts. The drawings must include any excavation support systems, shoring, underpinning, protective shielding, or any work required for the protection of MBTA property.
- C. Unless otherwise agreed to in advance, the owner or contractor's structures shall not attach to, be placed against, pass through, or impose any loads upon any structures or facilities owned by the MBTA.
- D. All construction work shall be performed in strict conformity with final plans and specifications that have been reviewed and approved by the MBTA. Any changes requested by the owner or contractor which affect MBTA property or operations must be submitted to the MBTA for review and approval at least 30 days prior to the planned commencement of the work. Approvals or rejections shall be submitted by the MBTA within thirty (30) days following submission to the MBTA for review.

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 7

- E. The owner or the contractor performing construction work over, on, under, or adjacent to Authority property shall submit to the Director of Design four (4) sets each of the design, drawings and specifications of any earth support system, shoring, underpinning, protective shielding, or any work required for the protection of the Authority's facilities and property, a minimum of forty-two (42) working days prior to the planned commencement of any of the above work. The design, drawings and specifications shall define in detail the methods of construction and materials to be used. The design and drawings shall be stamped and signed by a Professional Engineer registered in the Commonwealth of Massachusetts.
- F. Unless otherwise agreed to in advance, earth support structures or shoring systems shall not be attached to any structure owned by the MBTA, nor shall MBTA structures be used to support loadings or be used for excavation support.
- G. Engineering drawings of MBTA structures are available for reference or duplication at the MBTA Plan Room, 500 Arborway, Jamaica Plain, MA 02130. For information call the Technical Librarian at 617-222-5285.

4. OPERATIONAL RESTRICTIONS

- A. The owner or contractor is made aware that the work will be performed adjacent to or over operating tracks, signal lines, communication lines, power lines, cables and other facilities belonging to the Authority. The owner or contractor is to take all due precautions to protect the Authority's facilities, utilities, and operations during the course of his work. When in the opinion of the Authority's Chief Engineer of Design and Construction, Director of Subway Operations, Director of Systemwide Maintenance & Improvements, Director of Operations Support, or their representatives, the contractor's work would cause hazard to the Authority's facilities, infrastructure, or to the safe operation of the transit system, the Authority will assign qualified personnel deemed necessary to protect the property, facilities and operations, all at the expense of the contractor.
- B. The contractor is specifically prohibited from conducting any operations next to or over the right-of-way that have the potential to adversely impact the operations of Authority revenue service during normal operating hours (approximately 5:00 a.m. to 1:30 a.m.). Certain work adjacent to the right-of-way, described below as hazardous work, may take place during restricted revenue hours at the discretion of the Chief of Orange, Red, Green, or Blue Line Operations as applicable and require flagmen present.
- C. Access to the MBTA right-of-way, which encompasses all MBTA property (fence to fence, wall to wall, and property line to property line over which Authority vehicles operate, including sidings and yards), is contingent upon Owner or Contractor compliance with the "MBTA Right-of-Way Safety Rulebook" that outlines Right-of-Way Safe Practices for Access on or Near the Right-Of-Way.

As specified in the Right of Way Safety Rulebook, all persons who access the MBTA right of way must attend a one-day, eight-hour training class conducted by Subway Operations Training and the Safety Department Attendees must successfully complete the Right of Way Safety Training in order to

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 8

receive a Right of Way license. The license is valid for a two-year period after which the person must attend the Authority's Right of Way re-certification class. To register for the "Right of Way Safety" class, contact:

Supervisor and Chief Rules Examiner of Training
Cabot RTL Training
275 Dorchester Avenue, 2nd floor
South Boston, MA 02127
Telephone: (617) 222-5377

D. The Authority will consider the property; facilities and operations fouled or subject to hazard when the following occurs:

1. When any object or operation is or can be brought nearer than ten (10) feet to the centerline of operating track.
2. When an object or excavation is brought nearer than four (4) feet to a signal or communication line.
3. When an object or excavation is brought nearer than ten (10) feet to a power line or cable.
4. When explosives are used in the vicinity of the premises. Explosives shall not be used on or adjacent to the Authority's property or facilities without written consent of the Authority's Chief Engineer of Design and Construction and then shall be used only by a licensed blaster, licensed in the Commonwealth of Massachusetts, at times and under conditions acceptable to the Authority.
5. When cranes, trucks, power shovels, pile driver or any other equipment are working in positions that failure with or without load could occur nearer than 10 feet to the centerline of an operating track.

It shall be the responsibility of the contractor to inform the Chief of Orange, Red, Green, or Blue Line Operations as applicable in writing thirty (30) working days prior to all times when they intend to perform hazardous work as described above. Submittal must include a site plan, the reasons for entering the property, where the property will be entered, each individual location where work of a different nature is to be performed, the nature of such work, and number of days, including time schedule, the contractor intends to remain on the property at each location. Failure of the contractor to provide the appropriate Line Chief with the specified advanced notice of hazardous work will result in the stoppage of work by the Authority.

D. The Contractor will be allowed on the right-of-way only after normal revenue service (approximately 1:30 a.m. to 5:00 a.m.). On occasion, the Authority will operate work cars in the area of the project work during non-revenue hours. At no time during these occurrences will the contractor be allowed to work on the right-of-way except with the approval of the Authority. The contractor shall coordinate their schedule at least twenty-four (24) hours in advance with the Authority.

E. No weekday/weekend transit service interruptions will be allowed on this project. The contractor must schedule all work requiring a shutdown of revenue service and/or station and/or platform operations during non-revenue hours.

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 9

- F. Prior to the contractor leaving any work site, at the completion of each workday, the contractor shall ensure that the site is in proper condition to permit normal transit operations to resume. If, in the opinion of the Authority, the site is not suitable for normal transit operations due to conditions caused by the contractor, the Authority will allocate a suitable number of personnel to rectify the site. The owner or his contractor shall be charged full costs of such personnel and necessary equipment, including the full cost of replacement services during the cleanup period.
- G. In the event that the contractor does not adhere to the work period limitations of the special conditions and causes delay in returning the right-of-way to revenue service at the end of any work period, the owner or his contractor shall pay the Authority for substitute bus service a sum not to exceed \$120.00 per hour per bus for the entire duration of the delay and including mobilization and demobilization of the bus service. The minimum charge shall be (3) hours per bus per delay... The owner or the contractor will reimburse the Authority for the hourly costs of personnel used during such delays (egg., supervisors, officials, gatepersons, flagpersons, and automotive). The required number of buses to adequately accommodate all Authority customers who are inconvenienced by the delay shall be at the sole discretion of the Authority's Bus Operations Department. Whatever sum of money may become due and payable to the Authority by the owner or his contractor under this article may be retained out of money belonging to the contractor in the hand and possession of the Authority. This article shall be construed and treated by the parties to the contract not as imposing a penalty upon the contractor for failing fully to complete the work within the periods as specified herein, but as liquidation damages to compensate the Authority for additional costs incurred by the Authority because of the failure of the contractor to fully complete said work within the work periods specified.
- H. The contractor shall assume full responsibility for the safety of all their work. They shall perform the work in a manner that will ensure the safety of both personnel and property. The contractor shall prevent against safety hazards, and the exposure of persons and equipment to hazardous and/or potentially hazardous conditions. All, work in the construction of the project shall comply with the requirements of the Authority, Department of Labor, Occupational Safety and Health Administration (OSHA) provisions, as well as those of state and local regulations. Safe breathing levels must conform to the Massachusetts Department of Environmental Protection (DEP) standards. In the case of conflict of regulations, the most stringent will apply. If the standards are not met, the Authority has the right to stop the work until such time as the contractor is in compliance with standards.

5. PROTECTION SERVICES

- A. When the contractor is performing work in the vicinity of Authority rights-of-way or public areas, the Authority will require the contractor to have at the site such authorized and qualified personnel as may be required to adequately protect the Authority's customers, employees, property, facilities and operations from hazardous conditions.
- B. The need for protection services is outlined and described in the Authority's Right-of-Way Safety Rulebook. The appropriate Line Chief, or their representative, shall determine what protection services are required and assign flagging personnel, officials, supervisors, coordinators or any other such personnel as may be required to ensure the safety of the Authority's operations. Personnel shall be provided from the Authority's workforce in such numbers as the Line Chief determines.

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 10

Costs for all protection services and supplies shall be the responsibility of the owner or contractor. No work will be allowed if flagmen are required, but not on duty.

- C. When it is determined that protection services are required, the contractor must notify the Authority twenty-four (24) hours in advance and before 10.00 a.m. on the workday preceding the day that protection services will be required. Requests for protection services for weekends and/or holidays, must be made on the preceding Friday before 10.00 a.m., or before 10.00 a.m. on the workday preceding the holiday.

Requests for protection services for Non-Operating hours 1.30 a.m.—5.00 a.m. and in order for the work to be included on the Night Orders you must contact the:

Planning and Scheduling Coordinator
Maintenance of Way
617-222-5419.

Requests for protection services for Operating hours 5.00 a.m.-1.30 a.m. and in order for the work to be included on the Day Orders, you must contact:

Orange, Red, Green, or Blue Line Superintendent as applicable.
617-222-5844 (Orange); 617-222-5099(Red);
617-222-5982 (Green); 617-222-5532 (Blue).

It will be at the sole discretion of the Authority whether the contractor will be allowed to perform work on any particular day or night.

- D. The contractor will be required to provide each flagperson on duty with properly functioning safety equipment as approved by the Authority's Safety Department. This equipment includes but is not limited to: orange safety cones, red, yellow, and green flags, airhorns, hardhats, safety goggles, and hearing protection. The contractor will not be allowed on or adjacent to the right-of-way if flagging personnel are not equipped with required safety personal protective equipment.
- E. The contractor will supply properly functioning Authority-frequency portable radios to each flagperson on duty on a daily basis.. The contractor will be responsible for storing and maintaining radios throughout the life of the contract.
- F. All workers employed by the contractor who are to work within the Authority's stations, track area, right-of-way or adjacent to the traction power system or any high voltage electrical cables, shall be required to attend a safety awareness course at the Authority's Subway Operations Training School. The course is to make the contractor's personnel aware of the particular hazards related to the Authority's operations.
- G. All personnel working on the project site in the immediate vicinity of, or within the right-of-way, are required to wear orange reflective safety vests, similar to standard Authority equipment as specified in the Right-of-Way safety Rulebook.
- H. Work activities necessitating the traction power system (third rail and catenary) deenergization will require the services of an Authority power lineperson on site at all times and the contractor is responsible for any. costs incurred by the Authority as. a result of this action.

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 11

- I. Prior to the implementation of the contracted work, and throughout the life of the contract, the contractor will be required to supply professionally rendered signs, as directed by the Authority's Marketing Department. These signs will include, but are not limited to, the following:
 - 1. Informational signs for revenue service diversion.
 - 2. Station directional and stairway, platform, exit closing signs.
 - 3. General project informational signs for Authority customers.
- J. Upon the direction of the Authority's Chief Engineer of Design and Construction, Director of Safety, and or Director of Subway Operations or their representatives, the contractor will be required to supply and install partitions and wooden barricades to cordon off the work site; such partitions and barricades shall be maintained and remain graffiti free by the contractor for the duration of the project.
- K. Upon direction from the Authority's Chief Engineer of Design and Construction and / or Director of Subway Operations or their representatives, the contractor will supply the following when site conditions warrant:
 - 1. Emergency and temporary lighting.
 - 2. Exhaust fans of sufficient size and numbers to adequately ventilate the work site, tunnel and or adjacent stations.
 - 3. Fire and / or garden hose for the purpose of dust control.
- L. It shall be the responsibility of the contractor to keep the Authority informed prior to all times when they intend to perform hazardous work. Failure of the contractor to provide the Authority with suitable advance notice of hazardous work will result in the stoppage of the work by the Authority until such time as sufficient numbers of protection personnel are on duty at the site.

6. ANNUAL CERTIFICATION OF HI-RAIL EQUIPMENT

- A. All equipment used by the contractor on Authority property shall be inspected by the Maintenance of Way engineer and/or the MBTA Safety Department for clearance and safety standards, and shall not be used if considered unsafe. All contractor/ subcontractor equipment (including hi-rail) operators must be trained, certified, and properly licensed. Documentation of same must be readily available and provided to the Authority upon request. If the contractor equipment is involved in a derailment or near miss incident or an accident, which caused injury or exposed personnel to injury and or caused damage to Authority property, that equipment will be subject to the Impound Policy Procedure.
- B. Contractor equipment to be used on or in the vicinity of the track shall be in first class condition, so as to positively prevent any failure that would cause delay in Authority operations or damage to its property or compromise the health and safety of personnel working on the project. Equipment shall not be placed or operated within the fouling distance of track without first obtaining the permission of the Authority.
- C. The contractor shall not, at any time, operate equipment or machinery over Authority's right-of-

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 12

way without the use of hi-rail gear. All equipment that the contractor proposes to operate shall 'be modified to operate over the Authority's track and special work (e.g., switches, crossover frogs third rail, and restraining rail). Qualified Authority personnel shall control the movement of all hi-rail equipment at all times while operating on the Authority right-of-way. The contractor shall supply a portable radio for each hi-rail vehicle entering the Authority's right-of-way. No hi-rail equipment will be allowed on Authority's property without a functioning portable radio tuned to an Authority frequency.

- D. The contractor shall furnish hi-rail equipment capable of operating within the strict confines of the right-of-way. No Authority owned equipment is available for the contractor's use. In addition to equipment necessary to complete the work on a regular basis, the contractor shall be required to have on site sufficient standby equipment capable of: a) removing disabled equipment from the right-of way, and b) replacing disabled equipment in order to return the right-of-way to normal operating status by the end of the designated work period. As part of the pre-qualification statement, the contractor shall furnish an itemized list of all equipment to be used on the project, including:
1. Type of equipment (e.g., pickup, flatbed or dump trucks, excavator, cranes, etc.).
 2. Make, model and date of manufacture.
 3. Ownership.
 4. Present use and date of availability.
 5. Location where equipment may be inspected by Authority personnel during the prequalification period.
- E. The contractor shall have proof of competency for hi-rail operators (e.g., documentation, that the operator of hi-rail equipment is certified to operate that specific piece of equipment). The Authority reserves the right to review the lesson plan and audit the training class. The hi-rail operator will be responsible for ensuring and documenting that the vehicle is safe for operation and that all required equipment is present and properly secured. This must be done on a daily basis prior to operating the equipment.
- F. The contractor is required to have an Annual Certification of hi-rail equipment (separate form the Registry Inspection) signed by a competent person (e.g. Manufacturer's representative) asserting to the fact that the equipment is Original Equipment Manufacturer (OEM), that it conforms to the latest standards, was installed per the manufacturer's specification, and is functioning properly.
- G. The contractor must keep a copy of the Manufacturer's Operating Manual or instructions onboard the hi-rail equipment at all times.
- H. The operator shall operate the hi-rail equipment at a reasonable speed for the existing conditions, being alert for another vehicle (or any other obstruction along the right of way). In addition, said operator must maintain a safe spacing of traveling equipment.
- I. The contractor's hi-rail vehicles must be equipped with a horn (warning device), and an exhaust gas purifier.
- J. All equipment when used in tunnels and or darkness must conform to the Authority's standards for

MBTA SPECIAL INSTRUCTIONS

April 1, 2003

PAGE 13

headlights and marker lights. In addition, when vehicles are operating in tandem such as rail carts; flat cars, etc., such vehicles must be equipped with a flashing/strobe light when the lead vehicle is other than the operating vehicle. Diesel powered equipment only will be allowed in the tunnel and shall be removed from the tunnel each night unless otherwise permitted by the Director of Subway Operations.

K. Contractors must comply with the Authority's Propane Gas policy.

L. Contractor's doing "hot work" must have appropriate permits and follow all applicable rules and procedures for same.

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SECTION 01568

CONSTRUCTION SAFETY

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section specifies requirements to establish a practical, sound, and effective program for the prevention of construction accidents, and to assign specific responsibilities to Contractors for program compliance.
- B. Contractors and their supervisors must control hazardous activities and conditions within their respective areas of contract responsibility.

1.2 SUBMITTALS

- A. Safety and Health Plan: The contractor shall, within thirty (30) days after receipt of the award of a contract, submit for approval to the MBTA, a detailed operational Safety and Health Plan.
- B. Safety Supervisor: The Contractor shall within thirty (30) days after receipt of the award of a contract submit the resume of the qualifications and work experience of the designated Safety Supervisor proposed for assignment to the Project. No construction work shall begin until the project Safety Supervisor has been approved by the MBTA. The Safety Supervisor shall have a minimum of 5 years of experience in construction safety or a related field.
- C. Monthly Accident Experience Summary: The Contractor shall submit an Accident Experience Report monthly during the course of construction to the MBTA.
- D. Industrial Industry Records: Prior to start of work, the Contractor shall submit their Injury/Illness Records for the previous 3 years. In addition, the Contractor shall submit annually to the MBTA all subsequent Illness/Injury Reports for the duration of the project.

PART 2 - PRODUCTS

None

PART 3 - EXECUTION

3.1 SAFETY AND HEALTH PLAN

- A. The Contractor shall submit a project Safety and Health Plan. At a minimum, the plan shall include the following sections:
- i. Emergency Action Plan
 - ii. First Aid Facilities
 - iii. Serious Accidents
 - iv. Emergency Telephone Numbers
 - v. Protection of the Public
 - vi. Site Visits
 - vii. Substance Abuse/Prevention/Testing

3.2 SAFETY SUPERVISOR

- A. Complete daily safety inspections of the job site and contiguous public areas, and take any corrective actions to eliminate unsafe conditions.
- B. Establish and implement a project safety training program for supervisors and employees as applicable to their job.
- C. Attend project safety meetings.
- D. Review Foreman accident and investigation reports, and initiate corrective action to prevent reoccurrence.
- E. Maintain copies of all Contractor Safety Reports.
- F. Assist Foremen in accident investigations.
- G. Encourage establishment of incentive programs designed to recognize individual employee safety efforts and contributions towards improved safety.
- H. Prepare a Safety Audit Checklist and complete the checklist each week during the course of construction. The completed Audit Checklists shall be submitted to the Authority weekly.
- I. The Safety Supervisor needs to be on the project site when major work tasks are being performed. During work periods when the Contractor is not performing contract work, the Safety Supervisor can be absent from the project site with permission from the Authority.

3.3 ACCIDENT INVESTIGATION

- A. Serious accidents shall be reported immediately to the MBTA Resident Engineer. Contractors shall issue standing orders to all supervisors directly in charge of operations that the scene of the accident shall not be disturbed, except for rescue or other emergency measures, until otherwise directed. Contractor's forces either witnessing or party to the accident shall be detained at the site to provide detailed accounting of facts.
- B. All reports shall be submitted to the MBTA. The accident investigation shall generate appropriate recommendations for corrective actions to prevent similar recurrence of similar accidents.
- C. The requirements of MBTA Safety Procedure 7.3 Contractor Safety Violation Program shall be followed by the Contractor when completing an accident report.

3.4 FIRST AID FACILITIES

- A. In formulating the Health and Safety Plan, the Contractor shall provide for the establishment and staffing of appropriate first aid facilities for the treatment of on the job injuries.
- B. Off-site medical treatment of employee injuries shall be performed at medical facilities named in the Contractor's Safety Submittal.

3.5 EMERGENCY TELEPHONE NUMBERS

To ensure that emergency actions are promptly taken, Contractors shall post emergency telephone numbers in conspicuous places.

3.6 ORIENTATION PROGRAM

- A. The Contractor shall establish and maintain an orientation program for new employees which shall include:
 - i. For each individual the hazards present in their work assignment and in the general area in which he will be working.
 - ii. Personal protective equipment required.
 - iii. Instruction in the proper procedure for reporting unsafe job conditions which he/she may encounter.

3.7 RIGHT OF WAY SAFETY AWARENESS

- A. All Contractor and sub-contractor personnel shall complete either the MBTA Rapid Transit right-of-way safety training or the MBCR Commuter Rail right-of-way safety training prior to entering the project site. ROW safety training will be required on all MBTA property including the RR track, stations, parking garages and maintenance car houses. Personnel will not be allowed on the job site unless they have attended a Right-of-Way Safety Awareness training session. Workers are required to carry their certification card while on site.

3.8 OSHA

- A. The Contractor shall comply with the OSHA 1926 Construction Safety Standards that apply to the project work. The Contractor shall meet the reporting requirements, and employers with eleven (11) or more employees must meet recordkeeping requirements.
- B. All Contractor and Sub-Contractor personnel shall possess an OSHA 10 Hour Certification card when working on the project site.
- C. All fatality cases and/or serious accidents and illness shall be reported to OSHA immediately by phone to an Occupational Safety and Health Area Office. Employers must report immediately all blasting accidents.
- D. Part of the OSHA requirements is that each employer must post in a prominent location the "Safety and Health Protection on the Job" poster. The poster briefly states the intent and coverage of the Act. Failure to post this document is a citable offense under the Act.

3.9 PROSECUTION OF THE WORK

- A. The Contractor shall take all reasonable precautions in the performance of the work to protect the safety and health of its employees and members of the public and shall comply with all applicable MBTA, Local, State and Federal safety and health regulations and associated reporting requirements.
- B. The Contractor Safety Supervisor is charged with sole responsibility of on-site safety management under the direction of the Contractor Project Superintendent. All potential safety hazards identified shall be promptly corrected. The Safety Supervisor shall complete daily reviews of the project site and document then results on the inspection.
- C. The MBTA shall notify the Contractor of any non-compliance and of the corrective action required. This notice, when delivered the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the non-compliance and corrective action required after receiving the notice, the contractor shall immediately take corrective action. If the contractor fails or refuses to take corrective action promptly, the MBTA may, without prejudice to other legal or contractual rights, issue an order stopping all or part of the work; and may subject contractor to safety violation assessments as deemed appropriate by the MBTA. Resumption **of work** may be issued by the MBTA Safety Department.
- D. The Contractor shall maintain an accurate record of exposure data on all accidents and incidents occurring under this contract and report this data in a manner prescribed by the MBTA.
- E. The Contractor shall be responsible for all its lower-tier sub-contractor's and vendor's compliance.
- F. Contractor management shall make a commitment for accident prevention and fire prevention. Safety shall take precedence over schedule and production. Enforcement action is mandatory.

3.10 WORK AUTHORIZATIONS

A. The following work authorizations will be issued by the MBTA:

- i. Excavation
- ii. Hot Work
- iii. Confined Space Entry
- iv. Cranes and Suspended Platforms

3.11 WORKING NEAR THE THIRD RAIL

A. When working on or near the third rail, when the power is off, the contractor must have a third rail high-voltage warning device on the job site approved by the MBTA Power Department. This device will warn work crews if the third rail becomes energized at any time during work activity involving the right-of-way.

3.12 HAZARDOUS SUBSTANCES

A. Any Contractor who uses substances on the hazardous substances list to which workers might be exposed under either normal work conditions or reasonable foreseeable emergency conditions resulting from work place operations must provide those workers with the required hazardous substance information.

3.13 PERSONAL PROTECTIVE EQUIPMENT

A. All Contractor personnel must wear the required personal protective equipment when on the job site. Personal protective equipment includes hard hats, safety vest, safety glasses and proper footwear.

3.14 PROTECTION OF THE PUBLIC

A. All necessary precautions to prevent injury to the public or damage to property of others shall be taken. The public is defined as all persons not employed by or under contract or subcontract to the MBTA. Installation of temporary barriers and/or fencing designated to protect the public shall be reviewed and approved by the MBTA. Precautions shall include but not be limited to the following:

B. Work shall not be performed in any area occupied by the public unless specifically permitted by the contract or in writing by the MBTA.

3.15 SUBSTANCE ABUSE/PREVENTION/TESTING PROGRAM

A. The Contractor shall establish a substance abuse policy and testing program that includes the following elements:

- ☐ Deterrence

- ☐ Treatment and Rehabilitation
- ☐ Detection
- ☐ Enforcement

The MBTA reserves the right to approve the proposed substance abuse program prior to commencing the contract.

3.16 CONDUCT OF TOURS


- A. Group tours must be cleared through the MBTA, allowing maximum advance notice and in compliance with MBTA Policy and Procedures.
- B. MBTA will coordinate the tour arrangements and ensure notification to the Contractors Project Manager.


3.17 HOUSEKEEPING


- A. A basic concept in any effective accident prevention program is "good housekeeping." No one item has a great impact on the overall success of a safety program for a construction project. The importance of good housekeeping is such that it must be planned from the beginning of the job and carefully supervised through the final cleanup.
- B. During the course of construction, work areas, passageways and stairs, in and around buildings and structures, shall be kept clear of debris. Construction materials shall be stored in an orderly manner. Storage areas and walkways on the site shall be maintained free of depressions, obstructions and debris.

PART 4 - MEASUREMENT AND PAYMENT

- A. No separate measurement or payment will be made for work required under this Section.


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[Regulations](#)
[Enforcement](#)
[Data & Statistics](#)
[Training](#)
[Publications](#)
[Newsroom](#)
[Small Business](#)
[Anti-Retaliation](#)

[What's New](#)
[Offices](#)



[Regulations \(Standards - 29 CFR\) - Table of Contents](#)

- **Part Number:** 1926
- **Part Title:** Safety and Health Regulations for Construction
- **Standard Number:** 1926
- **Title:** Table of Contents

PART 1926 -- SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

Subpart A -- General

Sec.

1926.1 Purpose and scope.

1926.2 Variances from safety and health standards.

1926.3 Inspections - right of entry.

1926.4 Rules of practice for administrative adjudications for enforcement of safety and health standards.

1926.5 OMB control numbers under the Paperwork Reduction Act.

1926.6 Incorporation by reference.

Subpart B -- General Interpretations

1926.10 Scope of subpart.

1926.11 Coverage under section 103 of the act distinguished.

1926.12 Reorganization Plan No. 14 of 1950.

1926.13 Interpretation of statutory terms.

1926.14 Federal contracts for "mixed" types of performance.

1926.15 Relationship to the Service Contract Act; Walsh-Healey Public Contracts Act.

1926.16 Rules of construction.

Subpart C -- General Safety and Health Provisions

1926.20 General safety and health provisions.

1926.21 Safety training and education.

1926.22 Recording and reporting of injuries. [Reserved]

1926.23 First aid and medical attention.

1926.24 Fire protection and prevention.

1926.25 Housekeeping.

1926.26 Illumination.

1926.27 Sanitation.

1926.28 Personal protective equipment.

1926.29 Acceptable certifications.

1926.30 Shipbuilding and ship repairing.

1926.31 Incorporation by reference.

1926.32 Definitions.

1926.33 Access to employee exposure and medical records.

1926.34 Means of egress.

1926.35 Employee emergency action plans.

Subpart D -- Occupational Health and Environmental Controls

1926.50 Medical services and first aid.

1926.51 Sanitation.

1926.52 Occupational noise exposure.

1926.53 Ionizing radiation.

1926.54 Nonionizing radiation.

1926.55 Gases, vapors, fumes, dusts, and mists.

1926.56 Illumination.

1926.57 Ventilation.

1926.58 [Reserved]

1926.59 Hazard communication.

1926.60 Methylene dianiline.

1926.61 Retention of DOT markings, placards and labels.

1926.62 Lead.

1926.64 Process safety management of highly hazardous chemicals.

1926.65 Hazardous waste operations and emergency response.

1926.66 Criteria for design and construction for spray booths.

Subpart E -- Personal Protective and Life Saving Equipment

1926.95 Criteria for personal protective equipment.

1926.96 Occupational foot protection.

1926.97 [Reserved]

1926.98 [Reserved]

1926.99 [Reserved]

1926.100 Head protection.

1926.101 Hearing protection.
 1926.102 Eye and face protection.
 1926.103 Respiratory protection.
 1926.104 Safety belts, lifelines, and lanyards
 1926.105 Safety nets
 1926.106 Working over or near water.
 1926.107 Definitions applicable to this subpart.

Subpart F -- Fire Protection and Prevention

1926.150 Fire protection.
 1926.151 Fire prevention.
 1926.152 Flammable and combustible liquids.
 1926.153 Liquefied petroleum gas (LP-Gas).
 1926.154 Temporary heating devices.
 1926.155 Definitions applicable to this subpart.
 1926.156 Fixed extinguishing systems, general.
 1926.157 Fixed extinguishing systems, gaseous agent.
 1926.158 Fire detection systems.
 1926.159 Employee alarm systems.

Subpart G -- Signs, Signals, and Barricades

1926.200 Accident prevention signs and tags.
 1926.201 Signaling.
 1926.202 Barricades.
 1926.203 Definitions applicable to this subpart.

Subpart H -- Materials Handling, Storage, Use, and Disposal

1926.250 General requirements for storage.
 1926.251 Rigging equipment for material handling.
 1926.252 Disposal of waste materials.

Subpart I -- Tools -- Hand and Power

1926.300 General requirements.
 1926.301 Hand tools.
 1926.302 Power operated hand tools.
 1926.303 Abrasive wheels and tools.
 1926.304 Woodworking tools.
 1926.305 Jacks - lever and ratchet, screw and hydraulic.
 1926.306 Air Receivers.
 1926.307 Mechanical power-transmission apparatus.

Subpart J -- Welding and Cutting

1926.350 Gas welding and cutting.
 1926.351 Arc welding and cutting.
 1926.352 Fire prevention.
 1926.353 Ventilation and protection in welding, cutting, and heating.
 1926.354 Welding, cutting and heating in way of preservative coatings.

Subpart K -- Electrical

GENERAL

1926.400 Introduction.
 1926.401 [Reserved]

INSTALLATION SAFETY REQUIREMENTS

1926.402 Applicability.
 1926.403 General requirements.
 1926.404 Wiring design and protection.
 1926.405 Wiring methods, components, and equipment for general use.
 1926.406 Specific purpose equipment and installations.
 1926.407 Hazardous (classified) locations.
 1926.408 Special systems.
 1926.409-1926.415 [Reserved]

SAFETY-RELATED WORK PRACTICES

1926.416 General requirements.
 1926.417 Lockout and tagging of circuits.
 1926.418-1926.430 [Reserved]

SAFETY-RELATED MAINTENANCE AND ENVIRONMENTAL CONSIDERATIONS

1926.431 Maintenance of equipment.
 1926.432 Environmental deterioration of equipment.
 1926.433-1926.440 [Reserved]

SAFETY REQUIREMENTS FOR SPECIAL EQUIPMENT

1926.441 Battery locations and battery charging.
 1926.442-1926.448 [Reserved]

DEFINITIONS

1926.449 Definitions applicable to this subpart.

Subpart L -- Scaffolds

1926.450 Scope, application and definitions applicable to this subpart.
 1926.451 General requirements.
 1926.452 Additional requirements applicable to specific types of scaffolds.
 1926.453 Aerial lifts
 1926.454 Training requirements.

APPENDIX A TO SUBPART L -- Scaffolds

APPENDIX B TO SUBPART L -- Scaffolds

APPENDIX C TO SUBPART L -- Scaffolds

APPENDIX D TO SUBPART L -- Scaffolds

APPENDIX E TO SUBPART L -- Scaffolds

Subpart M -- Fall Protection

1926.500 Scope, application, and definitions applicable to this subpart.
 1926.501 Duty to have fall protection.
 1926.502 Fall protection systems criteria and practices.
 1926.503 Training requirements.

APPENDIX A TO SUBPART M -- DETERMINING ROOF WIDTHS

APPENDIX B TO SUBPART M -- GUARDRAIL SYSTEMS

APPENDIX C TO SUBPART M -- PERSONAL FALL ARREST SYSTEMS

APPENDIX D TO SUBPART M -- POSITIONING DEVICE SYSTEMS

APPENDIX E TO SUBPART M -- SAMPLE FALL PROTECTION PLANS

Subpart N -- Cranes, Derricks, Hoists, Elevators, and Conveyors

1926.550 [Reserved].
 1926.551 Helicopters.
 1926.552 Material hoists, personnel hoists and elevators.
 1926.553 Base-mounted drum hoists.
 1926.554 Overhead hoists.
 1926.555 Conveyors.
 1926.556 [Removed].

Subpart O -- Motor Vehicles, Mechanized Equipment, and Marine Operations

1926.600 Equipment.
 1926.601 Motor vehicles.
 1926.602 Material handling equipment.
 1926.603 Pile driving equipment.
 1926.604 Site clearing.
 1926.605 Marine operations and equipment.
 1926.606 Definitions applicable to this subpart.

Subpart P -- Excavations

1926.650 Scope, application, and definitions applicable to this subpart.
 1926.651 Specific Excavation Requirements.
 1926.652 Requirements for protective systems.

APPENDIX A TO SUBPART P -- SOIL CLASSIFICATION

APPENDIX B TO SUBPART P -- SLOPING AND BENCHING

APPENDIX C TO SUBPART P -- TIMBER SHORING FOR TRENCHES

APPENDIX D TO SUBPART P -- ALUMINUM HYDRAULIC SHORING FOR TRENCHES

APPENDIX E TO SUBPART P -- ALTERNATIVES TO TIMBER SHORING

APPENDIX F TO SUBPART P -- SELECTION OF PROTECTIVE SYSTEMS

Subpart Q -- Concrete and Masonry Construction

1926.700 Scope, application, and definitions, applicable to this subpart.
 1926.701 General requirements.
 1926.702 Requirements for equipment and tools.
 1926.703 Requirements for cast-in-place concrete.
 1926.704 Requirements for precast concrete.
 1926.705 Requirements for lift-slab construction operations.
 1926.706 Requirements of masonry construction.

APPENDIX TO SUBPART Q -- REFERENCES TO SUBPART Q OF PART 1926

Subpart R -- Steel Erection

1926.750 Scope.
 1926.751 Definitions.
 1926.752 Site layout, site-specific erection plan and construction sequence.
 1926.753 Hoisting and rigging.
 1926.754 Structural steel assembly.
 1926.755 Column anchorage.
 1926.756 Beams and columns.
 1926.757 Open web steel joists.
 1926.758 Systems-engineered metal buildings.
 1926.759 Falling object protection.
 1926.760 Fall protection.
 1926.761 Training.

APPENDIX A TO SUBPART R -- GUIDELINES FOR ESTABLISHING THE COMPONENTS OF A SITE-SPECIFIC ERECTION PLAN: NON-MANDATORY GUIDELINES FOR COMPLYING WITH § 1926.752(e)

APPENDIX B TO SUBPART R -- [RESERVED]

APPENDIX C TO SUBPART R -- ILLUSTRATIONS OF BRIDGING TERMINUS POINTS: NON-MANDATORY GUIDELINES FOR COMPLYING WITH § 1926.757(a)(10) and § 1926.757(c)(5)

APPENDIX D TO SUBPART R -- ILLUSTRATION OF THE USE OF CONTROL LINES TO DEMARCATE CONTROLLED DECKING ZONES (CDZs): NON-MANDATORY GUIDELINES FOR COMPLYING WITH § 1926.760(c)(3)

APPENDIX E TO SUBPART R -- TRAINING: NON-MANDATORY GUIDELINES FOR COMPLYING WITH § 1926.761

APPENDIX F TO SUBPART R -- PERIMETER COLUMNS: NON-MANDATORY GUIDELINES FOR COMPLYING WITH § 1926.756(e) TO PROTECT THE UNPROTECTED SIDE OR EDGE OF A WALKING/WORKING SURFACE

APPENDIX G TO SUBPART R -- FALL PROTECTION SYSTEMS CRITERIA AND PRACTICES FROM § 1926.502: NON-MANDATORY GUIDELINES FOR COMPLYING WITH § 1926.760(d)

APPENDIX H TO SUBPART R -- DOUBLE CONNECTIONS: ILLUSTRATION OF A CLIPPED END CONNECTION AND A STAGGERED CONNECTION: NON-MANDATORY GUIDELINES FOR COMPLYING WITH § 1926.756(c)(1)

Subpart S -- Tunnels and Shafts, Caissons, Cofferdams, and Compressed Air

1926.800 Underground construction.
 1926.801 Caissons.
 1926.802 Cofferdams.
 1926.803 Compressed air.
 1926.804 Definitions applicable to this subpart.

APPENDIX A TO SUBPART S -- DECOMPRESSION TABLES

Subpart T -- Demolition

1926.850 Preparatory operations.
 1926.851 Stairs, passageways, and ladders.
 1926.852 Chutes.
 1926.853 Removal of materials through floor openings.
 1926.854 Removal of walls, masonry sections, and chimneys.
 1926.855 Manual removal of floors.
 1926.856 Removal of walls, floors, and material with equipment.
 1926.857 Storage.
 1926.858 Removal of steel construction.
 1926.859 Mechanical demolition.
 1926.860 Selective demolition by explosives.

Subpart U -- Blasting and Use of Explosives

1926.900 General provisions.
 1926.901 Blaster qualifications.
 1926.902 Surface transportation of explosives.
 1926.903 Underground transportation of explosives.
 1926.904 Storage of explosives and blasting agents.
 1926.905 Loading of explosives or blasting agents.
 1926.906 Initiation of explosive charges - electric blasting.
 1926.907 Use of safety fuse.
 1926.908 Use of detonating cord.
 1926.909 Firing the blast.
 1926.910 Inspection after blasting.
 1926.911 Misfires.
 1926.912 Underwater blasting.
 1926.913 Blasting in excavation work under compressed air.
 1926.914 Definitions applicable to this subpart.

Subpart V -- Power Transmission and Distribution

1926.950 General requirements.
 1926.951 Tools and protective equipment.
 1926.952 Mechanical equipment.
 1926.953 Material handling.
 1926.954 Grounding for protection of employees.
 1926.955 Overhead lines.

1926.956 Underground lines.
 1926.957 Construction in energized substations.
 1926.958 External load helicopters.
 1926.959 Lineman's body belts, safety straps, and lanyards.
 1926.960 Definitions applicable to this subpart.

Subpart W -- Rollover Protective Structures; Overhead Protection

1926.1000 Rollover protective structures (ROPS) for material handling equipment.
 1926.1001 Minimum performance criteria for rollover protective structures for designated scrapers, loaders, dozers, graders, and crawler tractors.
 1926.1002 Protective frames (roll-over protective structures, known as ROPS) for wheel-type agricultural and industrial tractors used in construction.
 1926.1003 Overhead protection for operators of agricultural and industrial tractors.

APPENDIX A TO SUBPART W -- Figures W-14 through W-28

Subpart X -- Stairways and Ladders

1926.1050 Scope, application, and definitions applicable to this subpart.
 1926.1051 General Requirements.
 1926.1052 Stairways.
 1926.1053 Ladders.
 1926.1054-1926.1059 [Reserved]
 1926.1060 Training Requirements

APPENDIX A TO SUBPART X -- Ladders

Subpart Y -- Commercial Diving Operations

GENERAL

1926.1071 Scope and application.
 1926.1072 Definitions.

PERSONNEL REQUIREMENTS

1926.1076 Qualifications of dive team.

GENERAL OPERATIONS PROCEDURES

1926.1080 Safe practices manual.
 1926.1081 Pre-dive procedures.
 1926.1082 Procedures during dive.
 1926.1083 Post-dive procedures.

SPECIFIC OPERATIONS PROCEDURES

1926.1084 SCUBA diving.
 1926.1085 Surface-supplied air diving.
 1926.1086 Mixed-gas diving.
 1926.1087 Liveboating.

EQUIPMENT PROCEDURES AND REQUIREMENTS

1926.1090 Equipment

RECORDKEEPING

1926.1091 Recordkeeping requirements.
 1926.1092 [Removed]

APPENDIX A TO SUBPART Y -- EXAMPLES OF CONDITIONS WHICH MAY RESTRICT OR LIMIT EXPOSURE TO HYPERBARIC CONDITIONS

APPENDIX B TO SUBPART Y -- GUIDELINES FOR SCIENTIFIC DIVING

Subpart Z -- Toxic and Hazardous Substances

1926.1100 [Reserved]
 1926.1101 Asbestos
 1926.1102 Coal tar pitch volatiles; interpretation of term.
 1926.1103 13 Carcinogens (4-Nitrobiphenyl, etc.).
 1926.1104 alpha-Naphthylamine.
 1926.1105 [Reserved]
 1926.1106 Methyl chloromethyl ether.
 1926.1107 3,3'-Dichlorobenzidine (and its salts).
 1926.1108 bis-Chloromethyl ether.
 1926.1109 beta-Naphthylamine.
 1926.1110 Benzidine.
 1926.1111 4-Aminodiphenyl.
 1926.1112 Ethyleneimine.
 1926.1113 beta-Propiolactone.
 1926.1114 2-Acetylaminofluorene.
 1926.1115 4-Dimethylaminoazobenzene.
 1926.1116 N-Nitrosodimethylamine.
 1926.1117 Vinyl chloride.
 1926.1118 Inorganic arsenic.
 1926.1127 Cadmium.

1926.1128 Benzene.
 1926.1129 Coke oven emissions.
 1926.1144 1,2-dibromo-3-chloropropane.
 1926.1145 Acrylonitrile.
 1926.1147 Ethylene oxide.
 1926.1148 Formaldehyde.
 1926.1152 Methylene Chloride.

Subpart AA-BB -- [RESERVED]

Subpart CC -- Cranes and Derricks in Construction

1926.1400 Scope.
 1926.1401 Definitions.
 1926.1402 Ground conditions.
 1926.1403 Assembly/Disassembly--selection of manufacturer or employer procedures.
 1926.1404 Assembly/Disassembly--general requirements (applies to all assembly and disassembly operations).
 1926.1405 Disassembly--additional requirements for dismantling of booms and jibs (applies to both the use of manufacturer procedures and employer procedures).
 1926.1406 Assembly/Disassembly--employer procedures--general requirements.
 1926.1407 Power line safety (up to 350 kV)--assembly and disassembly.
 1926.1408 Power line safety (up to 350 kV)--equipment operations.
 1926.1409 Power line safety (over 350 kV).
 1926.1410 Power line safety (all voltages)--equipment operations closer than the Table A zone.
 1926.1411 Power line safety--while traveling.
 1926.1412 Inspections.
 1926.1413 Wire rope--inspection.
 1926.1414 Wire rope--selection and installation criteria.
 1926.1415 Safety devices.br> 1926.1416 Operational aids.
 1926.1417 Operation.
 1926.1418 Authority to stop operation.
 1926.1419 Signals--general requirements.
 1926.1420 Signals--radio, telephone or other electronic transmission of signals.
 1926.1421 Signals--voice signals--additional requirements.
 1926.1422 Signals--hand signal chart.
 1926.1423 Fall protection.
 1926.1424 Work area control.
 1926.1425 Keeping clear of the load.
 1926.1426 Free fall and controlled load lowering.
 1926.1427 Operator qualification and certification.
 1926.1428 Signal person qualifications.
 1926.1429 Qualifications of maintenance & repair employees.
 1926.1430 Training.
 1926.1431 Hoisting personnel.
 1926.1432 Multiple-crane/derrick lifts--supplemental requirements.
 1926.1433 Design, construction and testing.
 1926.1434 Equipment modifications.
 1926.1435 Tower cranes.
 1926.1436 Derricks.
 1926.1437 Floating cranes/derricks and land cranes/derricks on barges.
 1926.1438 Overhead & gantry cranes.
 1926.1439 Dedicated pile drivers.
 1926.1440 Sideboom cranes.
 1926.1441 Equipment with a rated hoisting/lifting capacity of 2,000 pounds or less.
 1926.1442 Severability.

Appendix A to Subpart CC of part 1926--Standard Hand Signals

Appendix B to Subpart CC of part 1926--Assembly/Disassembly--Sample Procedures for Minimizing the Risk of Unintended Dangerous Boom Movement

Appendix C to Subpart CC of part 1926--Operator Certification--Written Examination--Technical Knowledge Criteria


APPENDIX A TO PART 1926 -- DESIGNATIONS FOR GENERAL INDUSTRY STANDARDS INCORPORATED INTO BODY OF CONSTRUCTION STANDARDS.

SOURCE: 44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, unless otherwise noted.

EDITORIAL NOTE: At 44 FR 8577, Feb. 9, 1979, and corrected at 44 FR 20940, Apr. 6, 1979, OSHA reprinted without change the entire text of 29 CFR Part 1926 together with certain General Industry Occupational Safety and Health Standards contained in 29 CFR Part 1910, which have been identified as also applicable to construction work. This republication developed a single set of OSHA regulations for both labor and management forces within the construction industry.

Editorial Note: The Federal Register of August 2, 1995, page 39254 issued a Final Rule; correcting amendment. OSHA will maintain the existing fall protection requirements for steel erection activities pending rulemaking that addresses the steel erection industry. This affected 1926.104, 1926.105, 1926.107, 1926.500, and 1926.753.

[55 FR 42328, Oct. 18, 1990; 55 FR 47687, Nov. 14, 1990; 58 FR 26627, May 4, 1993; 58 FR 35077, June 30, 1993; 59 FR 215, Jan. 3, 1994; 59 FR 36695, July 19, 1994; 59 FR 40729, Aug. 9, 1994; 59 FR 40964, Aug. 10, 1994; 60 FR 5131, Jan. 26, 1995; 60 FR 39254, Aug. 2, 1995; 61 FR 5507; Feb. 13, 1996; 61 FR 9227, March 7, 1996; 61 FR 31427, June 20, 1996; 61 FR 46025, Aug. 30, 1996; 62 FR 1493, Jan. 10, 1997; 63 FR 1152, Jan. 8, 1998; 63 FR 1919, Jan. 13, 1998; 63 FR 3813, Jan. 27, 1998; 63 FR 13338, March 19, 1998; 63 FR 17093, April 8, 1998; 63 FR 20098, April 23, 1998; 63 FR 33450, June 18, 1998; 63 FR 35137, June 29, 1998; 64 FR 18810, April 16, 1999; 66 FR 5265, Jan. 18, 2001; 70 FR 76985, Dec. 29, 2005; 71 FR 2885, Jan. 18, 2006; 71 FR 16675, April 3, 2006; 75 48130, Aug. 9, 2010]

 Next Standard (1926 Subpart A)

DOCUMENT A00815

CSX RAILROAD REQUIRMENTS

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Insurance Requirements for Public Projects

ATTACHMENT A

I. Insurance Policies:

Agency and Contractor, if and to the extent that either is performing work on or about CSXT's property, shall procure and maintain the following insurance policies:

1. Commercial General Liability (CGL) coverage at their sole cost and expense with limits of not less than \$5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.
2. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than \$1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates [if permitted by state law].
3. Commercial Automobile Liability insurance with limits of not less than \$1,000,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional insured.
4. Railroad Protective Liability (RPL) insurance with limits of not less than \$5,000,000 combined single limit for bodily injury and/or property damage per occurrence and an aggregate annual limit of \$10,000,000, which insurance shall satisfy the following additional requirements:
 - a. The Railroad Protective Liability Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance - Insurance Services Office (ISO) Form CG 00 35.
 - b. CSX Transportation must be the named insured on the Railroad Protective Liability Insurance Policy. The named insured's address should be listed as:

CSX Transportation, Inc.
500 Water Street, C-907
Jacksonville, FL 32202
 - c. The name and address of the Contractor and of the Project Sponsor/Involved Governmental Agency must be shown on the Declarations page.
 - d. A description of operations and location must appear on the Declarations page and must match the Project description.
 - e. Terrorism Risk Insurance Act (TRIA) coverage must be included.
 - f. Authorized endorsements must include:
 - (i). Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later
 - g. Authorized endorsements may include:
 - (i). Broad Form Nuclear Exclusion - IL 00 21
 - (ii). Notice of Non-renewal or cancellation
 - (iii). Required State Cancellation Endorsement
 - (iv). Quick Reference or Index - CL/IL 240

- h. Authorized endorsements may not include:
 - (i). A Pollution Exclusion Endorsement except CG 28 31
 - (ii). An Endorsement that excludes TRIA coverage
 - (iii). An Endorsement that limits or excludes Professional Liability coverage
 - (iv). A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
 - (v). A Known Injury Endorsement
 - (vi). A Sole Agent Endorsement
 - (vii). A Punitive or Exemplary Damages Exclusion
 - (viii). A "Common Policy Conditions" Endorsement
 - (ix). Policies that contain any type of deductible
 - (x). Any endorsement that is not named in Section 4 (f) or (g) above that CSXT deems unacceptable
- 5. All insurance companies must be A. M. Best rated A- and Class VII or better
- 6. Such additional or different insurance as CSXT may require

II. Additional Terms

- 1. Contractor must submit the complete Railroad Protective Liability policy, Certificates of Insurance and all notices and correspondence regarding the insurance policies in an electronic format to:

insurancedocuments@csx.com

Neither Agency nor Contractor may begin work on or about CSXT property until written approval of the required insurance has been received from CSXT or CSXT's Insurance Compliance vendor, Ebix.

CONSTRUCTION REQUIREMENTS

When performing work on, over or adjacent to CSX Transportation (CSXT) right-of-way or operations, the Contractor must abide by the current CSXT Special Provisions and the following additional requirements.

1. All construction related correspondence will be directed to Bergmann Associates, acting as the Construction Monitoring Representative (CMR) on behalf of CSXT, with the following contact and address:

Michael Cooper
Project Manager
Bergmann Associates
10-B Madison Avenue Ext.
Albany, NY 12203
(518) 862-0325

Upon receipt of notification, the CMR will direct the Contractor to the local CSXT construction contact for the project.

2. The Contractor shall submit, including, but not limited to, the following construction procedures and documents. The Contractor shall obtain written acceptance from CSXT or their representative before proceeding with construction.
 - a. Means and Methods – the Contractor shall develop a detailed submission indicating the progression of work with specific times when tasks will be performed during the project. This submission will include a walkthrough at which time CSXT personnel will be present. Work will not be permitted to commence until the Contractor has provided CSXT with a satisfactory plan that the project will be undertaken without scheduling, performance or safety related issues. Provide a listing of the anticipated equipment to be used, the location of all equipment to be used and insure a contingency plan of action is in place should a primary piece of equipment malfunction. All work in the vicinity of CSXT property that has the potential of affecting CSXT train operations must be submitted and approved by CSXT prior to work being performed. This submission will also include a detailed narrative discussing the coordination of project safety issues between the sponsor, Contractor, CSXT and the CMR. The narrative shall address project level coordination and day to day, specific work operations including equipment operations and temporary works.
 - b. Erection Plans – Submittals must include detailed plans and procedures for all erection activities. The submission shall indicate the location and capacity of any proposed cranes, the estimated lifting loads and the connection devices (i.e. slings, shackles, etc.). All lifting equipment and connection devices shall have capacity for 150% of the actual lifting load. The factor of safety provided by the manufacturer in the lifting capacity charts shall not be considered in the 150% requirement. A registered Professional Engineer in the Commonwealth of Massachusetts must seal all erection plans, calculations and procedures.
 - c. Excavation and Shoring Procedures and Track Monitoring Procedures are required to be submitted to CSXT or the CMR in accordance with the CSXT Construction Submission Criteria. The CSXT Construction Submission Criteria should be referred to and complied with prior to the preparation of submissions, as it contains specific requirements that could impact the Contractor's material selection and methods or operations for work near the railroad. ***Revisions to approved procedures may not be field approved. Any deviation(s) from a previously accepted plan will***

require a formal submission of the procedure for review and acceptance prior to performing any work. A Professional Engineer in the Commonwealth of Massachusetts must sign and seal the plans.

- d. **Sheeting and Shoring Plans** – If excavation within the live load influence zone (a 1.5H to 1V slope line starting at 1.5 feet below top of rail and 12' from the centerline of track) is necessary, the contractor shall submit three (3) sets of detailed drawings and one (1) set of calculations in accordance with CSXT Design & Construction Standard Specifications. Shoring shall be designed to resist a vertical live load surcharge of 1,882 lbs. per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, 8'-6" wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in AREMA Manual for Railway Engineering, Chapter 8, Part 20. Allowable stresses in materials shall be in accordance with AREMA Manual for Railway Engineering, Chapter 7, 8, and 15. A Registered Professional Engineer in the Commonwealth of Massachusetts must seal all sheeting and shoring plans.
- e. **Ballast Protection** – A ballast protection system may be required at the sole discretion of CSXT depending on the contractor's proposed methods to perform the work. The system shall use filter fabric and indicate the anchorage system. The ballast protection is to extend a minimum of 25' beyond the proposed limit of work or greater as determined by CSXT and be continuously maintained to prevent all contaminants from entering the ballast section of all tracks for the entire duration of the project.
- f. **Construction Schedule** – Submit a detailed construction schedule for the duration of the project clearly indicating the time periods while working on and around CSXT right-of-way. As the work progresses, this schedule shall be updated and resubmitted as necessary to reflect changes in work sequence, duration and method, etc.
- g. **Insurance** – Submit all necessary insurance information in accordance with the current CSXT Insurance Requirements listed in "Attachment A" for approval. The complete insurance policies should be submitted by email to insurancedocuments@csx.com with a copy sent to the CMR.

The subject line of the email shall include the following:

CSXT OP# and the contractor's name

The body of the email shall include the following information:

CSXT PUBLIC PROJECT: <INSERT PROJECT TITLE HERE, CSXT OP# XX0000>

The Contractor shall provide their name and contact information in all correspondence.

The insurance policies will be required to be in place and approved prior to any work commencing on or that could potentially impact CSXT right-of-way.

- h. **Emergency Action Plan** – Submit an emergency action plan indicating the location of the site, contact numbers, access to the site, instructions for emergency response and location of nearest hospitals. This plan should cover all items required in the event of an emergency at the site including fire suppression. Coordinate the Emergency Action Plan with the safety related discussion of the Means and Methods submission discussed above. The plan should also include a method to provide this information to each project worker for each day on site.

3. Up to thirty (30) days will be required to review all construction submissions. Up to an additional thirty (30) days will be required to review any subsequent submissions returned not approved.
4. No storm water from the project may discharge onto the CSXT right-of-way at any time during construction.
5. The Contractor must ensure that proper erosion control is implemented on and adjacent to CSXT right-of-way during construction. The Contractor may be required to submit a detailed erosion control plan for review and acceptance by CSXT or the CMR prior to performing any work.
6. The Contractor must not use CSXT right-of-way for storage of materials or equipment during construction. The CSXT right-of-way must remain clear for railroad use at all times. Equipment may not be positioned to block the railroad access road, track area, or any part of the CSXT right-of-way without CSXT approval.
7. The Contractor will be required to abide by the provisions of the MassDOT/CSXT Construction Agreement. Periodically, throughout the project duration, the Contractor will be required to meet, discuss and, if necessary, take immediate action at the discretion of CSXT personnel and/or the CMR to comply with provisions of that agreement and these specifications.
8. This project will require extensive use of CSXT Flagmen to protect train operations from project activity in the area of the tracks. While CSXT cannot guarantee the availability of flagmen at all requested times, every accommodation will be extended to the Contractor when forces are available. Flagging requests should be made to Bergmann Associates at least thirty (30) days in advance. Termination or cancellation of a flagman requires ten (10) days notice to avoid incurring costs.
9. All crane and equipment operations that could potentially impact CSXT right-of-way must be coordinated with the CSXT Flagman.
10. For sheeting/shoring within eighteen (18') feet of centerline of track, the live load influence zone, and in slopes, the contractor shall use sheet pile. No sheet pile in slopes or within eighteen (18') feet of centerline of track shall be removed. Sheet piles shall be cutoff three (3') feet below the ground line after backfilling to that point. The remaining three (3') shall be backfilled immediately after cutoff.
11. Contractor access will be limited to the immediate project area only. The CSXT right-of-way may not be used for contractor access to the project site and no temporary at-grade crossings will be allowed.
12. The Contractor or the Agency shall be responsible to have painted on the structure the DOT Number assigned to the grade separation. This number shall be affixed at a location on either side of the CSXT tracks or property and in a manner such that it can be readily discerned and visible from track level. The font size of the DOT numbers and letters should be at least four inches (4 ") tall and shall be black on a light-colored background or white on a dark-colored background of the grade separation component.\
13. At project completion, submit a set of "As-Built" plans for the proposed bridge construction and any work performed on the CSXT right-of-way. Please forward the plans to:

Mr. Ed Sparks

Assistant Chief Engineer Structures
CSX Transportation
500 Water Street, J350
Jacksonville, FL 32202

APPENDIX

CSX Transportation

CONSTRUCTION SUBMISSION CRITERIA

Public Projects Group

Jacksonville, FL

Date Issued: February 23, 2015

TABLE OF CONTENTS

INTRODUCTION

SECTION I:	Definitions
SECTION II:	Construction Submissions
SECTION III:	Hoisting Operations
SECTION IV:	Demolition Procedure
SECTION V:	Erection Procedure
SECTION VI:	Temporary Excavation and Shoring
SECTION VII:	Track Monitoring

INTRODUCTION

The intent of this document is to guide outside agencies and their Contractors when performing work on, over, or with potential to impact CSXT property (ROW). Work plans shall be submitted for review to the designated CSXT Engineering Representative for all work which presents the potential to affect CSXT property or operations; this document shall serve as a guide in preparing these work plans. All work shall be performed in a manner that does not adversely impact CSXT operations or safety; as such, the requirements of this document shall be strictly adhered to, in addition to all other applicable standards associated with the construction. Applicable standards include, but are not limited to, CSXT Standards and Special Provisions, CSXT Insurance Requirements, CSXT Pipeline Occupancy Criteria, as well as the governing local, county, state and federal requirements. It shall be noted that this document and all other CSXT standards are subject to change without notice, and future revisions will be made available at the CSXT website: www.csx.com.

I. DEFINITIONS

1. *Agency* – The project sponsor (i.e., State DOT, Local Agencies, Private Developer, etc.)
2. *AREMA* – American Railway Engineering and Maintenance-of-Way Association – the North American railroad industry standards group. The use of this term shall be in specific reference to the AREMA Manual for Railway Engineering.
3. *Construction Submission* – The Agency or its representative shall submit six (6) sets of plans, supporting calculations, and detailed means and methods procedures for the specific proposed activity. All plans, specifications, and supporting calculations shall be signed/sealed by a Professional Engineer as defined below.
4. *Controlled Demolition* – Removal of an existing structure or subcomponents in a manner that positively prevents any debris or material from falling, impacting, or otherwise affecting CSXT employees, equipment or property. Provisions shall be made to ensure that there is no impairment of railroad operations or CSXT's ability to access its property at all times.
5. *Contractor* – The Agency's representative retained to perform the project work.
6. *Engineer* – CSXT Engineering Representative or a GEC authorized to act on the behalf of CSXT.
7. *Flagman* – A qualified CSXT employee with the sole responsibility to direct or restrict movement of trains, at or through a specific location, to provide protection for workers.
8. *GEC* – General Engineering Consultant who has been authorized to act on the behalf of CSXT.
9. *Horizontal Clearance* – Distance measured perpendicularly from centerline of any track to the nearest obstruction at any elevation between TOR and the maximum vertical clearance of the track.
10. *Professional Engineer* – An engineer who is licensed in State or Commonwealth in which the project is to occur. All plans, specifications, and supporting calculations shall be prepared by the Licensed Professional Engineer and shall bear his/her seal and signature.
11. *Potential to Foul* – Work having the possibility of impacting CSXT property or operations; defined as one or more of the following:
 - a. Any activity where access onto CSXT property is required.
 - b. Any activity where work is being performed on CSXT ROW.
 - c. Any excavation work adjacent to CSXT tracks or facilities, within the Theoretical Railroad Live Load Influence Zone, or where the active earth pressure zone extends within the CSXT property limits.
 - d. The use of any equipment where, if tipped and laid flat in any direction (360 degrees) about its center pin, can encroach within twenty five feet (25'-0") of the nearest track centerline. This is based upon the proposed location of

- the equipment during use, and may be a function of the equipment boom length. Note that hoisting equipment with the potential to foul must satisfy the 150% factor of safety requirement for lifting capacities.
- e. Any work where the scatter of debris, or other materials has the potential to encroach within twenty five feet (25'-0") of the nearest track centerline.
 - f. Any work where significant vibration forces may be induced upon the track structure or existing structures located under, over, or adjacent to the track structure.
 - g. Any other work which poses the potential to disrupt rail operations, threaten the safety of railroad employees, or otherwise negatively impact railroad property, as determined by CSXT.
12. *ROW – Right of Way*; Refers to CSXT Right-of-Way as well as all CSXT property and facilities. This includes all aerial space within the property limits, and any underground facilities.
13. *Submission Review Period* - a minimum of thirty (30) days in advance of start of work. Up to thirty (30) days will be required for the initial review response. Up to an additional thirty (30) days may be required to review any/all subsequent submissions or resubmission.
14. *Theoretical Railroad Live Load Influence Zone* – A 1½ horizontal to 1 vertical theoretical slope line starting 18 inches (1'-6") below top of tie elevation and twelve feet (12'-0") from the centerline of the nearest track.
15. *TOR – Top of Rail*. This is the base point for clearance measurements. It refers to the crown (top) of the steel rail; the point where train wheels bear on the steel rails.
16. *Track Structure* – All load bearing elements which support the train. This includes, but is not limited to, the rail, ties, appurtenances, ballast, sub-ballast, embankment, retaining walls, and bridge structures.
17. *Vertical Clearance* – Distance measured from TOR to the lowest obstruction within six feet (6'-0") of the track centerline, in either direction.

II. GENERAL SUBMISSION REQUIREMENTS

- A. A construction work plan is required to be submitted by the Agency or its Contractor, for review and acceptance, prior to accessing or performing any work with Potential to Foul.
- B. The Agency or its representative shall submit six (6) sets of plans, specifications, supporting calculations, and detailed means and methods procedures for the specific proposed work activity.
- C. Construction submissions shall include all information relevant to the work activity, and shall clearly and concisely explain the nature of the work, how it is being performed, and what measures are being taken to ensure that railroad property and operations are continuously maintained.
- D. All construction plans shall include a map of the work site, depicting the CSXT tracks, the CSXT right of way, proposed means of access, proposed locations for equipment and material staging (dimensioned from nearest track centerline), as well as all other relevant project information. An elevation drawing may also be necessary in order to depict clearances or other components of the work.
- E. Please note that CSXT will not provide pricing to individual contractors involved in bidding projects. Bidding contractors shall request information from the agency and not CSXT.
- F. The Contractor shall install a geotextile fabric ballast protection system to prevent construction or demolition debris and fines from fouling ballast. The geotextile ballast protection system shall be installed and maintained by the Contractor to the satisfaction of the Engineer.
- G. The Engineer shall be kept aware of the construction schedule. The Contractor shall provide timely communication to the Engineer when scheduling the work such that the Engineer may be present during the work. The Contractor's schedule shall not dictate the work plan review schedule, and flagging shall not be scheduled prior to receipt of an accepted work plan.

H. At any time during construction activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSXT facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSXT and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

I. Blasting will not be permitted to demolish a structure over or within CSXT's right-of-way. When blasting off of CSXT property but with Potential to Foul, vibration monitoring, track settlement surveying, and/or other protective measures may be required as determined by the Engineer.

J. Blasting is not permitted adjacent to CSXT right-of-way without written approval from the Chief Engineer, CSXT.

K. Mechanical and chemical means of rock removal must be explored before blasting is considered. If written permission for the use of explosives is granted, the Agency or Contractor must submit a work plan satisfying the following requirements:

1. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of the Agency or Contractor.
2. Electronic detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.
3. No blasting shall be done without the presence of an authorized representative of CSXT. Advance notice to the Engineer is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.
4. Agency or Contractor must have at the project site adequate equipment, labor and materials, and allow sufficient time, to clean up debris resulting from the blasting and correct any misalignment of tracks or other damage to CSXT property resulting from the blasting. Any corrective measures required must be performed as directed by the Engineer at the Agency's or Contractor's expense without any delay to trains. If Agency's or Contractor's actions result in the delay of any trains including passenger trains, the Agency or Contractor shall bear the entire cost thereof.
5. The Agency or Contractor may not store explosives on CSXT property.
6. At any time during blasting activities, the Engineer may require revisions to the previously approved procedures to address weather, site conditions or other circumstances that may create a potential hazard to rail operations or CSXT facilities. Such revisions may require immediate interruption or termination of ongoing activities until such time the issue is resolved to the Engineer's satisfaction. CSXT and its GEC shall not be responsible for any additional costs or time claims associated with such revisions.

III. HOISTING OPERATIONS

A. All proposed hoisting operations with Potential to Foul shall be submitted in accordance with the following:

1. A plan view drawing shall depict the work site, the CSXT track(s), the proposed location(s) of the lifting equipment, as well as the proposed locations for picking, any intermediate staging, and setting the load(s). All locations shall be dimensioned from centerline of the nearest track. Crane locations shall also be dimensioned from a stationary point at the work site for field confirmation.
2. Computations showing the anticipated weight of all picks. Computations shall be made based upon the field-verified plans of the existing structure. Pick weights shall account for the weight of concrete rubble or other materials attached to the component being removed; this includes the weight of subsequent rigging devices/components. Rigging components shall be sized for the subsequent pick weight.
3. All lifting equipment, rigging devices, and other load bearing elements shall have a rated (safe lifting) capacity that is greater than or equal to 150% of the load it is carrying, as a factor of safety. Supporting calculations shall be furnished to verify the minimum capacity requirement is maintained for the duration of the hoisting operation.

4. Dynamic hoisting operations are prohibited when carrying a load with the Potential to Foul. Cranes or other lifting equipment shall remain stationary during lifting. (i.e., no moving picks).
5. For lifting equipment, the manufacturer's capacity charts, including crane, counterweight, maximum boom angle, and boom nomenclature is to be submitted.
6. A schematic rigging diagram must be provided to clearly call out each rigging component from crane hook to the material being hoisted. Copies of catalog or information sheets shall be provided to verify rigging weights and capacities.
7. For built-up rigging devices, the contractor shall submit the following:
 - i. Details of the device, calling out material types, sizes, connections and other properties.
 - ii. Load test certification documents and/or design computations bearing the seal and signature of a Professional Engineer. Load test shall be performed in the configuration of its intended use as part of the subject demolition procedure.
 - iii. Copies of the latest inspection reports of the rigging device. The device shall be inspected within one (1) calendar year of the proposed date for use.
8. A detail shall be provided showing the crane outrigger setup, including dimensions from adjacent slopes or facilities. The detail shall indicate requirements for bearing surface preparation, including material requirements and compaction efforts. As a minimum, outriggers and/or tracks shall bear on mats, positioned on level material with adequate bearing capacity.
9. A complete written narrative that describes the sequence of events, indicating the order of lifts and any repositioning or re-hitching of the crane(s).

IV. DEMOLITION PROCEDURE

- A. The Agency or its Contractor shall submit a detailed procedure for a controlled demolition of any structure on, over, or adjacent to the ROW. The controlled demolition procedure must be approved by the Engineer prior to beginning work on the project.
- B. Existing Condition of structure being demolished:
 1. The Contractor shall submit as-built plans for the structure(s) being demolished.
 2. If as-built plans are unavailable, the Contractor shall perform an investigation of the structure, including any foundations, substructures, etc. The field measurements are to be made under the supervision of the Professional Engineer submitting the demolition procedure. Findings shall be submitted as part of the demolition means and methods submittal for review by the Engineer.
 3. Any proposed method for temporary stabilization of the structure during the demolition shall be based on the existing plans or investigative findings, and submitted as part of the demolition means and methods for review by the Engineer.
- C. Demolition work plans shall include a schematic plan depicting the proposed locations of the following, at various stages of the demolition:
 1. All cranes and equipment, calling out the operating radii.
 2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
 3. Proposed locations for stockpiling material or locations for truck loading.
 4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.
 5. Note that no crane or equipment may be set on the CSXT rails or track structure and no material may be dropped on CSXT property.
- D. Demolition submittal shall also include the following information:
 1. All hoisting details, as dictated by Section III of this document.
 2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., torch/saw cutting various portions of the superstructure or

substructure, dismantling splices, installing temporary bracing, etc.) shall be furnished so that the potential impact(s) to CSXT operations may be assessed and eliminated or minimized.

3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
 4. Design and supporting calculations shall be prepared, signed, and sealed by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSXT forces, at the expense of the Agency or its contractor.
- E. Girders or girder systems shall be stable at all times during demolition. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).
- F. Existing, obsolete, bridge piers shall be removed to a minimum of three feet (3'-0") below the finished grade, final ditch line invert, or as directed by the Engineer.
- G. A minimum quantity of twenty five (25) tons of CSXT approved granite track ballast may be required to be furnished and stockpiled on site by the Contractor, or as directed by the Engineer.
- H. The use of acetylene gas is prohibited for use on or over CSXT property. Torch cutting shall be performed utilizing other materials such as propane.
- I. CSXT's tracks, signals, structures, and other facilities shall be protected from damage during demolition of existing structure or replacement of deck slab.
- J. Demolition Debris Shield
1. On-track or ground-level debris shields (such as crane mats) are prohibited for use by CSXT.
 2. Demolition Debris Shield shall be installed prior to the demolition of the bridge deck or other relevant portions of the structure. The demolition debris shield shall be erected from the underside of the bridge over the track area to catch all falling debris. The debris shield shall not be the primary means of debris containment.
 - i. The demolition debris shield design and supporting calculations, all signed/sealed by a Professional Engineer, shall be submitted for review and acceptance.
 - ii. The demolition debris shield shall have a minimum design load of 50 pounds per square foot (50 psf) plus the weight of the equipment, debris, personnel, and all other loads.
 - iii. The Contractor shall verify the maximum particle size and quantity of the demolition debris generated during the procedure does not exceed the shield design loads. Shield design shall account for loads induced by particle impact; however the demolition procedure shall be such that impact forces are minimized. The debris shield shall not be the primary means of debris containment.
 - iv. The Contractor shall include installation/removal means and methods for the demolition debris shield as part of the proposed Controlled Demolition procedure submission.
 - v. The demolition debris shield shall provide twenty three feet (23'-0") minimum vertical clearance, or maintain the existing vertical clearance if the existing clearance is less than twenty three feet (23'-0").
 - vi. Horizontal clearance to the centerline of the track should not be reduced unless approved by the Engineer.
 - vii. The Contractor shall clean the demolition debris shield daily or more frequently as dictated either by the approved design parameters or as directed by the Engineer.
- K. Vertical Demolition Debris Shield
1. This type of shield may be required for substructure removals in close proximity to CSXT track and other facilities, as determined by the Engineer.
 2. The Agency or its Contractor shall submit detailed plans with detailed calculations, prepared, signed, and sealed by a Professional Engineer, of the protection shield.

V. ERECTION PROCEDURE

- A. The Agency or its Contractor shall submit a detailed procedure for erection of a structure with Potential to Foul. The erection procedure must be approved by the Engineer prior to beginning work on the project.
- B. Erection work plans shall include a schematic plan depicting the following, at all stages of the construction:
 1. All proposed locations of all cranes and equipment, calling out the operating radii.
 2. All proposed access and staging locations with all dimensions referenced from the center line of the nearest track.
 3. All proposed locations for stockpiling material or locations for truck loading.
 4. The location, with relevant dimensions, of all tracks, other railroad facilities; wires, poles, adjacent structures, or buried utilities that could be affected, showing that the proposed lifts are clear of these obstructions.
- C. No crane or equipment may be set on the CSXT rails or track structure and no material may be dropped on CSXT property.
- D. For erection of a structure over the tracks, the following information shall be submitted for review and acceptance by the Engineer, at least thirty (30) days prior to erection:
 1. As-built beam seat elevations – field surveyed upon completion of pier/abutment construction.
 2. Current Top of Rail (TOR) elevations – field measured at the time of as-built elevation collection.
 3. Computations verifying the anticipated minimum vertical clearance in the final condition which accounts for all deflection and camber, based upon the current TOR and as-built beam seat elevations. The anticipated minimum vertical clearance shall be greater than or equal to that which is indicated by the approved plans. Vertical clearance (see definitions) is measured from TOR to the lowest point on the overhead structure at any point within six feet (6'-0") from centerline of the track. Calculations shall be signed and sealed by a Professional Engineer.
- E. Girders or girder systems shall be stable at all times during erection. No crane may unhook prior to stabilizing the beam or girder.
 1. Lateral wind forces for the temporary conditions shall be considered in accordance with AREMA, Chapter 8, Section 28.6.2. The minimum lateral wind pressure shall be fifteen pounds per square foot (15 psf).
 2. Temporary bracing shall be provided at the piers, abutments, or other locations to resist overturning and/or buckling of the member(s). The agency shall submit a design and details of the proposed temporary bracing system, for review by the Engineer.
 3. Temporary bracing shall not be removed until sufficient lateral bracing or diaphragm members have been installed to establish a stable condition. Supporting calculations, furnished by the Professional Engineer, shall confirm the stable condition.
- F. Erection procedure submissions shall also include the following information:
 1. All hoisting details, as dictated by Section III of this document.
 2. A time schedule for each of the various stages must be shown as well as a schedule for the entire lifting procedure. The proposed time frames for all critical subtasks (i.e., performing aerial splices, installing temporary bracing, installation of diaphragm members, etc.) shall be furnished so that the potential impact(s) to CSXT operations may be assessed and eliminated or minimized.
 3. The names and experience of the key Contractor personnel involved in the operation shall be included in the Contractor's means and methods submission.
 4. A guardrail will be required to be installed in a track in the proximity of temporary bents or shoring towers, when located within twelve feet (12'-0") from the centerline of the track. The guardrail will be installed by CSXT forces, at the expense of the Agency or its Contractor.
 5. Design and supporting calculations prepared by the Professional Engineer for items including the temporary support of components or intermediate stages shall be submitted for review.

VI. TEMPORARY EXCAVATION AND SHORING

- A. The Agency or its Contractor shall submit a detailed design and procedure for the installation of a sheeting/shoring system adjacent to the tracks. Shoring protection shall be provided when excavating with Potential to Foul, or as otherwise determined by CSXT. Shoring shall be provided in accordance with the AREMA, except as noted below.
- B. Shoring may not be required if all of the following conditions are satisfied:
 1. The excavation does not encroach within the Theoretical Live Load Influence Zone. Please refer to Figure 1.
 2. The track structure is situated on level ground, or in a cut section, and on stable soil.
 3. The excavation does not adversely impact the stability of a CSXT facility (i.e. signal bungalow, drainage facility,

undergrade bridge, building, etc), or the stability of any structure on, over, or adjacent to CSXT property with potential to foul.

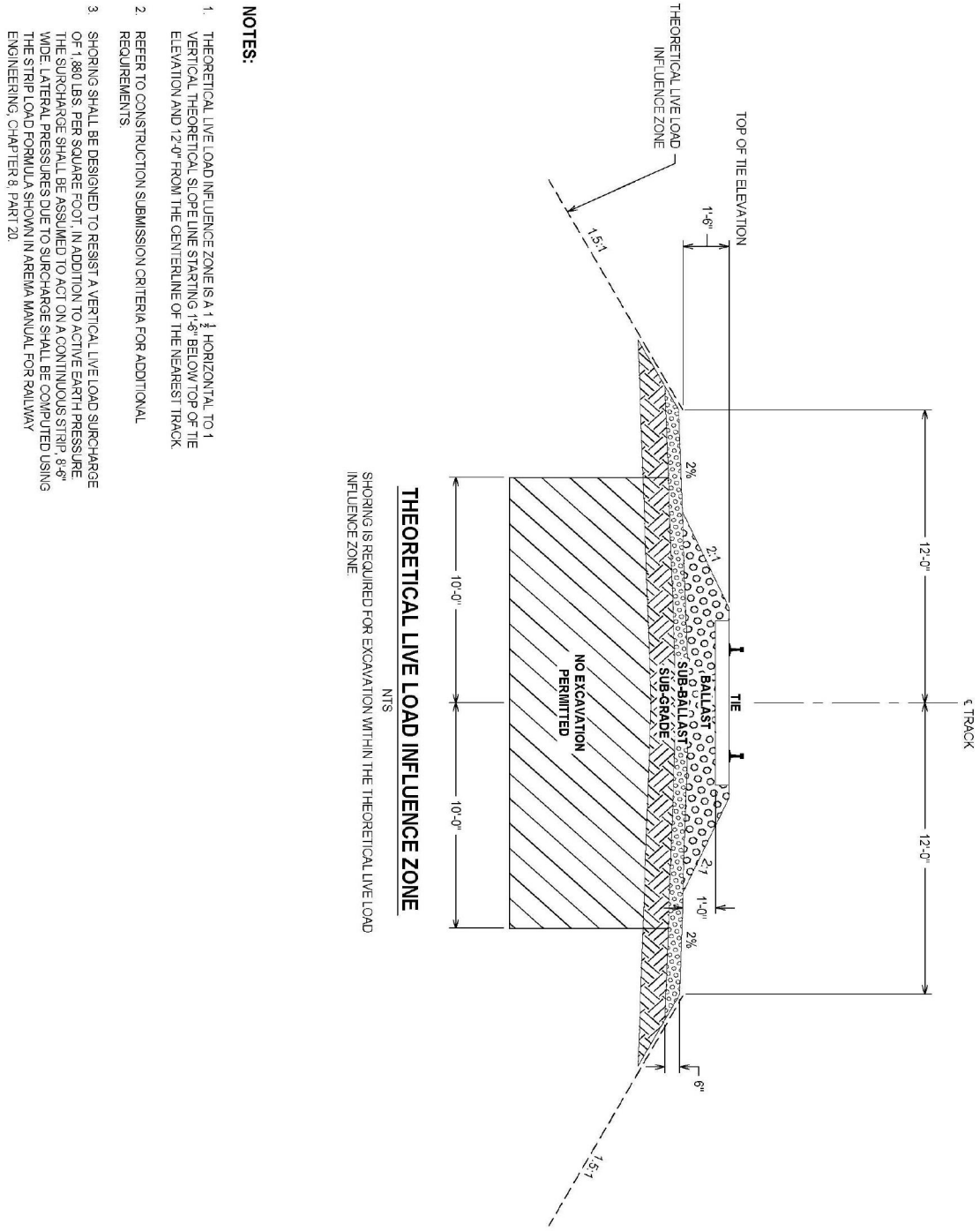
4. Shoring is not required by any governing federal, state, local or other construction code.

- C. Shoring is required when excavating the toe of an embankment. Excavation of any embankment which supports an active CSXT track structure without shoring will not be permitted.
- D. Trench boxes are not an acceptable means of shoring. Trench boxes are prohibited for use on CSXT property or within the Theoretical Railroad Live Load Influence Zone.
- E. Shoring shall be a cofferdam-type, which completely encloses the excavation. However, where justified by site or work conditions, partial cofferdams with open sides away from the track may be permissible, as determined by the Engineer.
- F. Cofferdams shall be constructed using interlocking steel sheet piles, or when approved by the Engineer, steel soldier piles with timber lagging. Wales and struts shall be included when dictated by the design.
- G. The use of tiebacks can be permissible for temporary shoring systems, when conditions warrant. Tiebacks shall have a minimum clear cover of 6'-0", measured from the bottom of the rail. Upon completion of the work, tiebacks shall be grouted, cut off, and remain in place.
- H. All shoring systems on, or adjacent to CSXT right-of-way, shall be equipped with railings or other fall protection, compliant with the governing federal, state or local requirements. Area around pits shall be graded to eliminate all potential tripping hazards.
- I. Interlocking steel sheet piles shall be used for shoring systems qualifying one or more of the following conditions:
 - 1. Within 18'-0" of the nearest track centerline
 - 2. Within the live load influence zone
 - 3. Within slopes supporting the track structure
 - 4. As otherwise deemed necessary by the Engineer.
- J. Sheet piles qualifying for one or more of the requirements listed in Section VI.I (above) of this document shall not be removed. Sheet piles shall be left in place and cut off a minimum of 3'-0" below the finished grade, the ditch line invert, or as otherwise directed by the Engineer. The ground shall be backfilled and compacted immediately after sheet pile is cut off.
- K. The following design considerations shall be considered when preparing the shoring design package:
 - 1. Shoring shall be designed to resist a vertical live load surcharge of 1,880 lbs. per square foot, in addition to active earth pressure. The surcharge shall be assumed to act on a continuous strip, eight feet six inches (8'-6") wide. Lateral pressures due to surcharge shall be computed using the strip load formula shown in *AREMA Manual for Railway Engineering*, Chapter 8, Part 20.
 - 2. Allowable stresses in materials shall be in accordance with AREMA Chapter 7, 8, and 15.3.
 - 3. A minimum horizontal clearance of ten feet (10'-0") from centerline of the track to face of nearest point of shoring shall be maintained, provided a twelve feet (12'-0") roadbed is maintained with a temporary walkway and handrail system.
 - 4. For temporary shoring systems with Potential to Foul, piles shall be plumb under full dead load. Maximum deflection at the top of wall, under full live load, shall be as follows:
 - i. One-half (1/2) inch for walls within twelve feet (12'-0") of track centerline (Measured from centerline of the nearest track to the nearest point of the supporting structure).
 - ii. One (1) inch for walls located greater than twelve feet (12'-0") from track centerline
- L. Shoring work plans shall be submitted in accordance with Section II of this document, as well as the following additional requirements:
 - 1. The work plan shall include detailed drawings of the shoring systems calling out the sizes of all structural members, details of all connections. Both plan and elevation drawings shall be provided, calling out dimensions from the face of shoring relative to the nearest track centerline. The elevation drawing shall also show the height of shoring, and track elevation in relation to bottom of excavation.
 - 2. Full design calculations for the shoring system shall be furnished.
 - 3. A procedure for cutting off the sheet pile, backfilling and restoring the embankment.

VII. TRACK MONITORING

- A. When work being performed has the potential to disrupt the track structure, a work plan must be submitted detailing a track monitoring program which will serve to monitor and detect both horizontal and vertical movement of the CSXT track and roadbed.
- B. The program shall specify the survey locations, the distance between the location points, and frequency of monitoring before, during, and after construction. CSXT reserves to the right to modify the survey locations and monitoring frequency as necessary during the project.
- C. The survey data shall be collected in accordance with the approved frequency and immediately furnished to the Engineer for analysis.
- D. If any movement has occurred as determined by the Engineer, CSXT will be immediately notified. CSXT, at its sole discretion, shall have the right to immediately require all contractor operations to be ceased, have the excavated area immediately backfilled and/or determine what corrective action is required. Any corrective action required by CSXT or performed by CSXT including the monitoring of corrective action of the contractor will be at project expense.

FIGURE 1: Theoretical Live Load Influence Zone



APPENDIX

CSX Transportation

CSXT SPECIAL PROVISIONS

**Public Projects Group
Jacksonville, FL
Date Issued: May 9, 2011**

CSXT SPECIAL PROVISIONS

AUTHORITY OF CSXT ENGINEER

The CSXT Representative shall have final authority in all matters affecting the safe maintenance of CSXT operations and CSXT property, and his or her approval shall be obtained by the Agency or its Contractor for methods of construction to avoid interference with CSXT operations and CSXT property and all other matters contemplated by the Agreement and these Special Provisions.

II. INTERFERENCE WITH CSXT OPERATIONS

A. Agency or its Contractor shall arrange and conduct its work so that there will be no interference with CSXT operations, including train, signal, telephone and telegraphic services, or damage to CSXT's property, or to poles, wires, and other facilities of tenants on CSXT's Property or right-of-way. Agency or its Contractor shall store materials so as to prevent trespassers from causing damage to trains, or CSXT Property. Whenever Work is likely to affect the operations or safety of trains, the method of doing such Work shall first be submitted to the CSXT Representative for approval, but such approval shall not relieve Agency or its Contractor from liability in connection with such Work.

B. If conditions arising from or in connection with the Project require that immediate and unusual provisions be made to protect train operation or CSXT's property, Agency or its Contractor shall make such provision. If the CSXT Representative determines that such provision is insufficient, CSXT may, at the expense of Agency or its Contractor, require or provide such provision as may be deemed necessary, or cause the Work to cease immediately.

III. NOTICE OF STARTING WORK. Agency or its Contractor shall not commence any work on CSXT Property or rights of-way until it has complied with the following conditions:

A. Notify CSXT in writing of the date that it intends to commence Work on the Project. Such notice must be received by CSXT at least ten business days in advance of the date Agency or its Contractor proposes to begin Work on CSXT property. The notice must refer to this Agreement by date. If flagging service is required, such notice shall be submitted at least thirty (30) business days in advance of the date scheduled to commence the Work.

B. Obtain authorization from the CSXT Representative to begin Work on CSXT property, such authorization to include an outline of specific conditions with which it must comply.

C. Obtain from CSXT the names, addresses and telephone numbers of CSXT's personnel who must receive notice under provisions in the Agreement. Where more than one individual is designated, the area of responsibility of each shall be specified.

IV. WORK FOR THE BENEFIT OF THE CONTRACTOR

A. No temporary or permanent changes to wire lines or other facilities (other than third party fiber optic cable transmission systems) on CSXT property that are considered necessary to the Work are anticipated or shown on the Plans. If any such changes are, or become, necessary in the opinion of CSXT or Agency, such changes will be covered by appropriate revisions to the Plans and by preparation of a force account estimate. Such force account estimate may be initiated by either CSXT or Agency, but must be approved by both CSXT and Agency. Agency or Contractor shall be responsible for arranging for the relocation of the third party fiber optic cable transmission systems, at no cost or expense to CSXT.

B. Should Agency or Contractor desire any changes in addition to the above, then it shall make separate arrangements with CSXT for such changes to be accomplished at the Agency or Contractor's expense.

V. HAUL ACROSS RAILROAD

A. If Agency or Contractor desires access across CSXT property or tracks at other than an existing and open public road crossing in or incident to construction of the Project, the Agency or Contractor must first obtain the permission of CSXT and shall execute a license agreement or right of entry satisfactory to CSXT, wherein Agency or Contractor agrees to bear all costs and liabilities related to such access.

B. Agency and Contractor shall not cross CSXT's property and tracks with vehicles or equipment of any kind or character, except at such crossing or crossings as may be permitted pursuant to this section.

VI. COOPERATION AND DELAYS

A. Agency or Contractor shall arrange a schedule with CSXT for accomplishing stage construction involving work by CSXT. In arranging its schedule, Agency or Contractor shall ascertain, from CSXT, the lead time required for assembling crews and materials and shall make due allowance therefor

B. Agency or Contractor may not charge any costs or submit any claims against CSXT for hindrance or delay caused by railroad traffic; work done by CSXT or other delay incident to or necessary for safe maintenance of railroad traffic; or for any delays due to compliance with these Special Provisions.

C. Agency and Contractor shall cooperate with others participating in the construction of the Project to the end that all work may be carried on to the best advantage.

D. Agency and Contractor understand and agree that CSXT does not assume any responsibility for work performed by others in connection the Project. Agency and Contractor further understand and agree that they shall have no claim whatsoever against CSXT for any inconvenience, delay or additional cost incurred by Agency or Contractor on account of operations by others.

VII. STORAGE OF MATERIALS AND EQUIPMENT

Agency and Contractor shall not store their materials or equipment on CSXT's property or where they may potentially interfere with CSXT's operations, unless Agency or Contractor has received CSXT Representative's prior written permission. Agency and Contractor understand and agree that CSXT will not be liable for any damage to such materials and equipment from any cause and that CSXT may move, or require Agency or Contractor to move, such material and equipment at Agency's or Contractor's sole expense. To minimize the possibility of damage to the railroad tracks resulting from the unauthorized use of equipment, all grading or other construction equipment that is left parked near the tracks unattended by watchmen shall be immobilized to the extent feasible so that it cannot be moved by unauthorized persons.

VIII. CONSTRUCTION PROCEDURES

A. General

1. Construction work on CSXT property shall be subject to CSXT's inspection and approval.
2. Construction work on CSXT property shall be in accord with CSXT's written outline of specific conditions and with these Special Provisions.
3. Contractor shall observe the terms and rules of the CSXT Safe Way manual, which Agency and Contractor shall be required to obtain from CSXT, and in accord with any other instructions furnished by CSXT or CSXT's Representative.

B. Blasting

1. Agency or Contractor shall obtain CSXT Representative's and Agency Representative's prior written approval for use of explosives on or adjacent to CSXT property. If permission for use of explosives is granted, Agency or Contractor must comply with the following:
 - a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of Agency or Contractor.
 - b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.
 - c. No blasting shall be done without the presence of an authorized representative of CSXT. At least 30 days' advance notice to CSXT Representative is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.

d. Agency or Contractor must have at the Project site adequate equipment, labor and materials, and allow sufficient time, to (i) clean up (at Agency's expense) debris resulting from the blasting without any delay to trains; and (ii) correct (at Agency's expense) any track misalignment or other damage to CSXT's property resulting from the blasting, as directed by CSXT Representative, without delay to trains. If Agency's or Contractor's actions result in delay of any trains, including Amtrak passenger trains, Agency shall bear the entire cost thereof.

e. Agency and Contractor shall not store explosives on CSXT property.

2. CSXT Representative will:

a. Determine the approximate location of trains and advise Agency or Contractor of the approximate amount of time available for the blasting operation and clean-up.

b. Have the authority to order discontinuance of blasting if, in his or her opinion, blasting is too hazardous or is not in accord with these Special Provisions.

IX. MAINTENANCE OF DITCHES ADJACENT TO CSXT TRACKS

Agency or Contractor shall maintain all ditches and drainage structures free of silt or other obstructions that may result from their operations. Agency or Contractor shall provide erosion control measures during construction and use methods that accord with applicable state standard specifications for road and bridge construction, including either (1) silt fence; (2) hay or straw barrier; (3) berm or temporary ditches; (4) sediment basin; (5) aggregate checks; and (6) channel lining. All such maintenance and repair of damages due to Agency's or Contractor's operations shall be performed at Agency's expense.

X. FLAGGING / INSPECTION SERVICE

A. CSXT has sole authority to determine the need for flagging required to protect its operations and property. In general, flagging protection will be required whenever Agency or Contractor or their equipment are, or are likely to be, working within fifty (50) feet of live track or other track clearances specified by CSXT, or over tracks.

B. Agency shall reimburse CSXT directly for all costs of flagging that is required on account of construction within CSXT property shown in the Plans, or that is covered by an approved plan revision, supplemental agreement or change order.

C. Agency or Contractor shall give a minimum of 30 days' advance notice to CSXT Representative for anticipated need for flagging service. No work shall be undertaken until the flag person(s) is/are at the job site. If it is necessary for CSXT to advertise a flagging job for bid, it may take up to 90-days to obtain this service, and CSXT shall not be liable for the cost of delays attributable to obtaining such service.

D. CSXT shall have the right to assign an individual to the site of the Project to perform inspection service whenever, in the opinion of CSXT Representative, such inspection may be necessary. Agency shall reimburse CSXT for the costs incurred by CSXT for such inspection service. Inspection service shall not relieve Agency or Contractor from liability for its Work.

E. CSXT shall render invoices for, and Agency shall pay for, the actual pay rate of the flagpersons and inspectors used, plus standard additives, whether that amount is above or below the rate provided in the Estimate. If the rate of pay that is to be used for inspector or flagging service is changed before the work is started or during the progress of the work, whether by law or agreement between CSXT and its employees, or if the tax rates on labor are changed, bills will be rendered by CSXT and paid by Agency using the new rates. Agency and Contractor shall perform their operations that require flagging protection or inspection service in such a manner and sequence that the cost of such will be as economical as possible.

XI. UTILITY FACILITIES ON CSXT PROPERTY

Agency shall arrange, upon approval from CSXT, to have any utility facilities on or over CSXT Property changed as may be necessary to provide clearances for the proposed trackage.

XII. CLEAN-UP

Agency or Contractor, upon completion of the Project, shall remove from CSXT's Property any temporary grade crossings, any temporary erosion control measures used to control drainage, all machinery, equipment, surplus materials, falsework, rubbish, or temporary buildings belonging to Agency or Contractor. Agency or Contractor, upon completion of the Project, shall leave CSXT Property in neat condition, satisfactory to CSXT Representative.

XIII. FAILURE TO COMPLY

If Agency or Contractor violate or fail to comply with any of the requirements of these Special Provisions, (a) CSXT may require Agency and/or Contractor to vacate CSXT Property; and (b) CSXT may withhold monies due Agency and/or Contractor; (c) CSXT may require Agency to withhold monies due Contractor; and (d) CSXT may cure such failure and the Agency shall reimburse CSXT for the cost of curing such failure.

MASSDOT/CSXT AGREEMENT PROVISIONS

The contractor will be required to enter into a Right-of-Entry Agreement (ROE) with CSXT. The contractor must include an outline of the proposed construction schedule; and approximate duration of work including the anticipated amount of flagging days that will be required.

No work may commence on or adjacent to CSXT right of way or that could potentially impact CSXT operations until the following have occurred:

- Final plans have been reviewed with no exceptions taken;
- A fully executed Right-of-Entry Agreement is in place with the appropriate parties;
- The necessary construction submissions have been submitted with no exceptions taken by CSXT or its representative;
- The contractor's insurance has been approved in writing by CSXT;
- A pre-construction meeting has been held with a CSXT representative present;
- Proper notification to proceed has been given to CSXT;
- A CSXT flagman is scheduled and on site.

DOCUMENT A00820

**Massachusetts Department of Transportation
Conditions of Custody****REQUEST FOR RELEASE OF MASSDOT AUTOCAD FILES FORM**

(Only to be used following award of contract)

City/Town: DISTRICT 3Project File Number: 614101Contract Number: 133051Project Description: Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at
Various Locations along I-90

All AutoCAD files are provided solely as a courtesy to facilitate public access to information. MassDOT attempts to provide current and accurate information but cannot guarantee so. MassDOT provides such documents, files or other data "as is" without any warranty of any kind, either expressed or implied, including but not limited to, accuracy, reliability, omissions, completeness and currentness. The Commonwealth of Massachusetts and its Consultants shall not be liable for any claim for damages, including lost profits or other consequential, exemplary, incidental, indirect or special damages, relating in any way to the documents, files or other data accessible from this file, including, but not limited to, claims arising out of or related to electronic access or transmission of data or viruses. Because data stored on electronic media can deteriorate undetected or be modified without our knowledge, MassDOT cannot be held liable for its completeness or correctness. MassDOT makes no representation as to the compatibility of these files beyond the version of the stated CAD software.

By signing this form, I agree that it shall be my responsibility to reconcile this electronic data with the conformed contract documents, and that only the conformed contract documents shall be regarded as legal documents for this Project. I understand that this authorization does not give me the right to distribute the files. I agree to the terms above and wish to receive the AutoCAD files.

This signed form shall be emailed to the Highway Design Engineer at the MassDOT -Highway Division at the following email address:

DOTHighwayDesign@dot.state.ma.us

Attn: AutoCAD Files

Name of person requesting AutoCAD files: _____

Affiliation/Company: _____

Address: _____

Telephone number: _____

Email address: _____

Signature/Date: _____

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DOCUMENT A00875

**POLICY DIRECTIVE P-22-001
AND
POLICY DIRECTIVE P-22-002**

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Number: P-22-001Date: 9/23/22

POLICY DIRECTIVE

Jonathan Gulliver (signature on original)

HIGHWAY ADMINISTRATOR

Off-Site Stockpiling of Soil from MassDOT Construction Projects

Purpose

The purpose of this Policy Directive is to formally establish a policy and procedures for managing and stockpiling soil generated and transported from MassDOT construction projects. This Policy Directive does not supersede any Federal, State, or Local regulations.

Date of Effect

This Policy Directive is effective immediately for all projects, including active construction projects.

For active construction projects and for other projects advertised prior to October 15, 2022, changes to the contract documents needed to implement the requirements of this Policy Directive will be considered on a case-by-case basis and shall be approved by the District Highway Director, as necessary.

For projects advertised on or after October 15, 2022, MassDOT will include the requirements and implementation procedures of this Policy Directive in the construction contract documents.

Policy Requirements

This policy is intended to prevent the off-site relocation of excavated soil generated from MassDOT projects to areas near residential receptors and to control potential fugitive dusts and/or contaminants. To that end, excavated soil may not be moved from the project site without knowledge of the content of the material. Knowledge may include visual field observations for presence of staining, odor, and/or debris, screening with a photoionization detector (PID), laboratory analysis, and/or site history. Pavement millings and other non-soil materials are not subject to the requirements of this Policy Directive.

Moving soil from a MassDOT project site to a temporary off-site storage location must be approved in writing by the District Highway Director.

The Contractor must select a storage location that is at least 500 feet away from residential receptors, as defined herein to include, but not be limited to, residential dwellings, residentially

zoned property, schools, daycare facilities, playgrounds, parks, recreational areas, hospitals, elderly housing and convalescent facilities.

Temporary off-site storage of excavated soil from a MassDOT project is only permissible at a location approved and permitted by MassDOT. The temporary storage location should be located within the same municipality where the soil was excavated, where possible. Stockpiled soil must be securely covered, and appropriate measures must be taken to minimize fugitive dust and erosion.

Signs indicating the source of the soil, the date the soil was generated, and contact information must be erected and maintained until the stockpiled soils are transported to a disposal facility or reused on the project site.

Implementation Procedures

To ensure that off-site storage of excavated soils is managed properly on MassDOT projects, this policy requires the following:

1. Off-Site Stockpile Storage Locations

- a. The Contractor shall provide proposed off-site storage locations to the Engineer for approval at least 30 days prior to transporting soil off site. Off-site storage locations should be in the same municipality as the work site.
- b. The Contractor shall keep excavated soil on site until adequately characterized to the satisfaction of the Engineer.
- c. The Contractor shall provide notification of the approved off-site storage location to the local Board of Health and the Town Manager's/Mayor's Office at least 7-days prior to transporting soil off site.
- d. The Contractor shall provide the Engineer with at least 3-days' notice prior to transporting soil off site.
- e. For off-site storage locations on MassDOT property, the Contractor is required to obtain an Access Permit through the District Permits Office prior to storage of soil or other materials. MassDOT will issue these permits at no cost to the Contractor. Information to be submitted by the Contractor as part of the permit application shall include:
 - i. A description of material to be stored off-site, including available analytical data;
 - ii. A figure of the location with distances to residences and residential receptors; and
 - iii. Anticipated duration of temporary storage.
- f. Stockpile locations should not be within 500 feet of residential receptors (e.g., residential dwellings, residentially zoned property, schools, daycare facilities, playgrounds, parks, recreational areas, hospitals, elderly housing and convalescent facilities).
 - i. If the stockpile location must be within 500 feet of residential receptors, then soil must be less than RCS-1 (per 310 CMR 40.1600) and free of potentially hazardous or regulated items.

- g. For off-site storage locations on non-MassDOT property, the Contractor must notify the property owner(s) at least 7 days prior to transporting material.
- h. Exceptions to these rules will be reviewed by MassDOT and may be approved by the District Highway Director on a case-by-case basis.

2. Off-Site Stockpile Management

- a. The Contractor shall keep soil stockpiles on impermeable surfaces (e.g., asphalt or concrete) or on 10-mil polyethylene sheeting.
- b. The Contractor shall cover soil stockpiles with 10-mil polyethylene sheeting and surround with a berm made of hay bales, straw wattles, or similar.
 - i. Piles that are actively being worked on must be covered and re-secured at the end of the work shift.
- c. The Contractor shall label stockpiles with signs, including:
 - i. Location of origin (including any Release Tracking Numbers)
 - ii. Stockpile ID number (including MassDOT District office-assigned tracking ID, if different)
 - iii. Date of initial accumulation
 - iv. Applicable telephone numbers for the Contractor and MassDOT.
- d. The Contractor shall mitigate fugitive dust at storage locations under the direction of an appropriately trained/certified environmental professional.
- e. The Contractor shall remedy noncompliance with this policy within 48 hours.
- f. The Contractor shall remedy noncompliance with this policy on the SAME DAY for potentially hazardous material, as determined by the Engineer.
- g. The Contractor shall handle excavated soil according to federal, state, and local regulations.
- h. The Contractor shall use appropriate shipping documents for all movements of excavated soil on public roadways (e.g., Bill of Lading, Material Shipping Record, Manifest, Asbestos Waste Shipment Record, etc.).

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Number: P-22-002Date: 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 A00881

STRUCTURES INSPECTION FIELD REPORT

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2-DIST 03	B.I.N. 4P0	STRUCTURES INSPECTION FIELD REPORT ROUTINE & SPECIAL MEMBER INSPECTION	BR. DEPT. NO. F-07-060
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CITY/TOWN FRAMINGHAM	8-STRUCTURE NO. F07060-4P0-DOT-NBI	11-Kilo. POINT 187.644	41-STATUS A:OPEN	90-ROUTINE INSP. DATE FEB 20, 2024
07-FACILITY CARRIED I 90 EX 117 IN 13	MEMORIAL NAME/LOCAL NAME	27-YR BUILT 1957	106-YR REBUILT 1993	YR REHAB'D (NON 106) 1994
06-FEATURES INTERSECTED I 90	26-FUNCTIONAL CLASS Freeway/Expressway	DIST. BRIDGE INSPECTION ENGINEER M. Azizi		
43-STRUCTURE TYPE 302 : Steel Stringer/Girder	22-OWNER State Highway Agency	21-MAINTAINER State Highway Agency	TEAM LEADER I. Abermagger	
107-DECK TYPE 1 : Concrete Cast-in-Place	WEATHER Clear	TEMP. (air) -2°C	TEAM MEMBERS N. GAINES	

<div style="border: 1px solid black; padding: 5px;"> ITEM 58 <div style="float: right; border: 1px solid black; padding: 2px 10px;">6</div> <div style="clear: both;"></div> <div style="border-bottom: 1px solid black; padding: 5px;"> DECK <div style="float: right; text-align: right;"><i>DEF</i></div> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>1.Wearing surface</td><td style="text-align: center;">7</td><td style="text-align: center;">M-P</td></tr> <tr><td>2.Deck Condition</td><td style="text-align: center;">6</td><td style="text-align: center;">M-P</td></tr> <tr><td>3.Stay in Place Forms</td><td style="text-align: center;">N</td><td style="text-align: center;">-</td></tr> <tr><td>4.Curbs</td><td style="text-align: center;">7</td><td style="text-align: center;">-</td></tr> <tr><td>5.Median</td><td style="text-align: center;">7</td><td style="text-align: center;">M-P</td></tr> <tr><td>6.Sidewalks</td><td style="text-align: center;">N</td><td style="text-align: center;">-</td></tr> <tr><td>7.Parapets</td><td style="text-align: center;">5</td><td style="text-align: center;">S-A</td></tr> <tr><td>8.Railing</td><td style="text-align: center;">N</td><td style="text-align: center;">-</td></tr> <tr><td>9.Anti Missile Fence</td><td style="text-align: center;">N</td><td style="text-align: center;">-</td></tr> <tr><td>10.Drainage System</td><td style="text-align: center;">N</td><td style="text-align: center;">-</td></tr> <tr><td>11.Lighting Standards</td><td style="text-align: center;">N</td><td style="text-align: center;">-</td></tr> <tr><td>12.Utilities</td><td style="text-align: center;">N</td><td style="text-align: center;">-</td></tr> <tr><td>13.Deck Joints</td><td style="text-align: center;">4</td><td style="text-align: center;">S-A</td></tr> <tr><td>14.Shielding</td><td style="text-align: center;">7</td><td style="text-align: center;">-</td></tr> <tr><td>15.</td><td style="text-align: center;">N</td><td style="text-align: center;">-</td></tr> <tr><td>16.Deck weeps</td><td style="text-align: center;">4</td><td style="text-align: center;">S-A</td></tr> </table> <div style="margin-top: 10px;"> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">E CURB REVEAL (In millimeters)</div> <div style="border: 1px solid black; padding: 2px 10px;">100</div> <div style="text-align: center;">W CURB REVEAL (In millimeters)</div> <div style="border: 1px solid black; padding: 2px 10px;">100</div> </div> </div> <div style="border-top: 1px solid black; padding: 5px;"> APPROACHES <div style="float: right; text-align: right;"><i>DEF</i></div> <table border="1" style="width:100%; border-collapse: collapse;"> <tr><td>a. 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CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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ITEM 61 CHANNEL & CHANNEL PROTECTION <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <tr> <th></th> <th>Dive</th> <th>Cur</th> <th>DEF</th> </tr> <tr><td>1.Channel Scour</td><td>N</td><td>N</td><td>-</td></tr> <tr><td>2.Embankment Erosion</td><td>N</td><td>N</td><td>-</td></tr> <tr><td>3.Debris</td><td>N</td><td>N</td><td>-</td></tr> <tr><td>4.Vegetation</td><td>N</td><td>N</td><td>-</td></tr> <tr><td>5.Utilities</td><td>N</td><td>N</td><td>-</td></tr> <tr><td>6.Rip-Rap/Slope Protection</td><td>N</td><td>N</td><td>-</td></tr> <tr><td>7.Aggradation</td><td>N</td><td>N</td><td>-</td></tr> <tr><td>8.Fender System</td><td>N</td><td>N</td><td>-</td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </table> <div style="margin-top: 10px;"> STREAM FLOW VELOCITY: Tidal () High () Moderate () Low () None (X) </div> <div style="margin-top: 10px;"> ITEM 61 (Dive Report): <input type="checkbox"/> N ITEM 61 (This Report): <input type="checkbox"/> N </div> <div style="margin-top: 10px;"> 93b-U/W INSP. DATE: <input type="text" value="00/00/0000"/> </div>		Dive	Cur	DEF	1.Channel Scour	N	N	-	2.Embankment Erosion	N	N	-	3.Debris	N	N	-	4.Vegetation	N	N	-	5.Utilities	N	N	-	6.Rip-Rap/Slope Protection	N	N	-	7.Aggradation	N	N	-	8.Fender System	N	N	-													ITEM 36 TRAFFIC SAFETY <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <th></th> <th>36</th> <th>COND</th> <th>DEF</th> </tr> <tr><td>A. Bridge Railing</td><td>1</td><td>5</td><td>S-A</td></tr> <tr><td>B. Transitions</td><td>1</td><td>6</td><td>M-P</td></tr> <tr><td>C. Approach Guardrail</td><td>1</td><td>4</td><td>S-A</td></tr> <tr><td>D. 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CONDITION RATING GUIDE			(For Items 58, 59, 60 and 61)
CODE	CONDITION	DEFECTS	
N	NOT APPLICABLE		
G 9	EXCELLENT	Excellent condition.	
G 8	VERY GOOD	No problem noted.	
G 7	GOOD	Some minor problems.	
F 6	SATISFACTORY	Structural elements show some minor deterioration.	
F 5	FAIR	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.	
P 4	POOR	Advanced section loss, deterioration, spalling or scour.	
P 3	SERIOUS	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.	
C 2	CRITICAL	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.	
C 1	"IMMINENT" FAILURE	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put it back in light service.	
0	FAILED	Out of service - beyond corrective action.	

DEFICIENCY REPORTING GUIDE	
DEFICIENCY:	A defect in a structure that requires corrective action.
CATEGORIES OF DEFICIENCIES:	
M= Minor Deficiency	Deficiencies which are minor in nature, generally do not impact the structural integrity of the bridge and could easily be repaired. Examples include but are not limited to: Spalled concrete, Minor pot holes, Minor corrosion of steel, Minor scouring, Clogged drainage, etc.
S= Severe/Major Deficiency	Deficiencies which are more extensive in nature and need more planning and effort to repair. Examples include but are not limited to: Moderate to major deterioration in concrete, Exposed and corroded rebars, Considerable settlement, Considerable scouring or undermining, Moderate to extensive corrosion to structural steel with measurable loss of section, etc.
C-S= Critical Structural Deficiency	A deficiency in a structural element of a bridge that poses an extreme unsafe condition due to the failure or imminent failure of the element which will affect the structural integrity of the bridge.
C-H= Critical Hazard Deficiency	A deficiency in a component or element of a bridge that poses an extreme hazard or unsafe condition to the public, but does not impair the structural integrity of the bridge. Examples include but are not limited to: Loose concrete hanging down over traffic or pedestrians, A hole in a sidewalk that may cause injuries to pedestrians, Missing section of bridge railing, etc.
URGENCY OF REPAIR:	
I = Immediate-	[Inspector(s) immediately contact District Bridge Inspection Engineer (DBIE) to report the Deficiency and to receive further instruction from him/her].
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2-DIST 03	B.I.N. 4P0	STRUCTURES INSPECTION FIELD REPORT ROUTINE & SPECIAL MEMBER INSPECTION	BR. DEPT. NO. F-07-060
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CITY/TOWN FRAMINGHAM	8-STRUCTURE NO. F07060-4P0-DOT-NBI	11-Kilo. POINT 187.644	90-ROUTINE INSP. DATE Feb 20, 2024	93*-SPEC. MEMB. INSP. DATE Feb 20, 2024
07-FACILITY CARRIED I 90 EX 117 IN 13	MEMORIAL NAME/LOCAL NAME	27-YR BUILT 1957	106-YR REBUILT 1993	*YR REHAB'D (NON 106) 1994
06-FEATURES INTERSECTED I 90	26-FUNCTIONAL CLASS Freeway/Expressway	DIST. BRIDGE INSPECTION ENGINEER M. Azizi		
43-STRUCTURE TYPE 302 : Steel Stringer/Girder	22-OWNER State Highway Agency	21-MAINTAINER State Highway Agency	TEAM LEADER I. Abermagger	
107-DECK TYPE 1 : Concrete Cast-in-Place	WEATHER Clear	TEMP. (air) -2°C	TEAM MEMBERS N. GAINES	

WEIGHT POSTING Not Applicable <input checked="" type="checkbox"/> X Actual Posting: <table border="1" style="display: inline-table; text-align: center;"> <tr><td>H</td><td>3</td><td>3S2</td><td>Single</td></tr> <tr><td>N</td><td>N</td><td>N</td><td>N</td></tr> </table> Recommended Posting: <table border="1" style="display: inline-table; text-align: center;"> <tr><td>N</td><td>N</td><td>N</td><td>N</td></tr> </table> Waived Date: 00/00/0000 EJDMT Date: 00/00/0000	H	3	3S2	Single	N	N	N	N	N	N	N	N	Signs In Place (Y=Yes, N=No, NR=Not Required) Legibility/Visibility	At bridge: <table border="1" style="display: inline-table; text-align: center;"> <tr><td>N</td><td>S</td></tr> <tr><td></td><td></td></tr> </table> Advance: <table border="1" style="display: inline-table; text-align: center;"> <tr><td>N</td><td>S</td></tr> <tr><td></td><td></td></tr> </table>	N	S			N	S			PLANS (Y/N): <input checked="" type="checkbox"/> Y (V.C.R.) (Y/N): <input checked="" type="checkbox"/> N TAPE#: _____
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Inspection data at time of existing rating I 58: 6 I 59: 6 I 60: 6 I 62: - Date :02/22/2016		
REASON: <div style="border: 1px solid black; height: 40px; width: 100%;"></div>		

SPECIAL MEMBER(S):										
	MEMBER	CRACK (Y/N):	WELD'S CONDITION (0-9)	LOCATION OF CORROSION, SECTION LOSS (%), CRACKS, COLLISION DAMAGE, STRESS CONCENTRATION, ETC.	CONDITION		INV. RATING OF MEMBER FROM RATING ANALYSIS			Deficiencies
					PREVIOUS	PRESENT	H-20	3	3S2	
					(0-9)	(0-9)				
A	Item 60.2.b - Caps	N		See remarks in comments section.	5	4	Not Rated			S-A
B										
C										
D										
E										

List of field tests performed: None	<table border="1" style="display: inline-table;"> <tr> <td>1-58</td> <td>1-59</td> <td>1-60</td> <td>1-62</td> </tr> <tr> <td>6</td> <td>6</td> <td>5</td> <td>-</td> </tr> <tr> <td colspan="4">(Overall Previous Condition)</td> </tr> <tr> <td>6</td> <td>6</td> <td>4</td> <td>-</td> </tr> <tr> <td colspan="4">(Overall Current Condition)</td> </tr> </table>	1-58	1-59	1-60	1-62	6	6	5	-	(Overall Previous Condition)				6	6	4	-	(Overall Current Condition)			
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CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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REMARKS

BRIDGE ORIENTATION

According to the plans, the approaches are north and south and the elevations are east and west. This a four span steel beam bridge with eight beams (1-32) and seven bays in each span. The beams and bays are numbered west to east and the spans are numbered south to north. There are three piers numbered south to north. Each pier has four columns numbered west to east. **See Sketch 1-2.**

GENERAL REMARKS

The lowest under clearance is under beam 17 in span 3 (I-90WB) over the crown of the roadway between the high speed and middle lanes.

Since the previous *Routine Inspection on 2/6/22*, repairs in span 3 for beams 23 and 24 and the 2nd diaphragms from pier 3 in bays 6 and 7 have been completed.

ITEM 58 - DECK

Item 58.1 - Wearing surface

The wearing surface in the both lanes has minor wheel wear throughout that extends into the approaches.

Item 58.2 - Deck Condition

There are transverse hairline cracks with light efflorescence in many areas throughout all spans. There are many areas throughout spans 2 and 3, over traffic, with rust staining between the beam flanges and the deck. All haunches have been removed above all travel lanes in spans 2 and 3, besides above timber shielding in span 2, bay 6.

Span 2

- West deck fascia - spall, 2' diameter x 5" deep with moisture, efflorescence/rust staining, and exposed rusted rebar at the joint over pier 2. **See photo 1**
- Beam 10, deflection joint - spall, 6" diameter x 1.5" deep
- Bays 2 and 6, cold joint - moisture and efflorescence staining, full length. **See photo 2**
- Bay 6, all travel lanes - timber shielding; at the time of this inspection, large pieces of haunch on top of the shielding. **See photo 3**

Span 3

- West deck fascia - spalls, up to 1' high x 8" wide x up to 5" deep with moisture, efflorescence/rust staining, and exposed rusted rebar over piers 2 and 3. **See photos 1 and 4**

Item 58.5 - Median

There is minor hairline vertical and map cracking throughout both faces of the concrete Jersey shaped median barrier.

Item 58.7 - Parapets

The parapets have many minor hairline map cracks throughout.

There are intermittent areas of spalling along the base of both Jersey shaped parapets on the inside face that extends up to 1.5' high and 2.5" deep at the joints. **See photo 5.**

Item 58.13 - Deck Joints

Both deck joint seals are covered with sand/bituminous and torn in many areas throughout.

The northbound section of the north joint is paved over.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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REMARKS

The south deck joint has minor plow gouges in the southbound section, and there is a cracked weld at a splice point. **See photo 6.**

Item 58.14 - Shielding
There is timber shielding in span 2 bay 6, above all travel lanes.

Item 58.16 - Deck weeps
There are deck weeps at all four abutment corners of the bridge that have not been properly extended. **See photo 7.**

APPROACHES

Approaches a - Appr. pavement condition
See Item 58.1 for additional comments.

ITEM 59 - SUPERSTRUCTURE

Item 59.4 - Girders or Beams
Since the previous *Routine Inspection on 2/6/22* span 3 beams 23 and 24 have been repaired and painted. **See photos 8-10.**

There is previous pitting to the bottom of the web and the top of the bottom flange at the abutment and pier ends of the fascia beams.

The worst areas of pitting are to beam 17 and 25 in spans 3 and 4 at pier 3, beam 24 and 32 in spans 3 and 4 at pier 3. **See photos 11-12.**
There is 0.4" remaining to the bottom of the web behind the bearing to beam 32 at pier 3, on the span 4 side.

There are isolated areas of pitting to the bottom 3" to the vertical stiffeners on the fascia beams at the piers.

The bearing stiffener on the west side of the beam 24 in span 3 at pier 3, and the bearing stiffener on the east side of beam 16 in span 2 at pier 2, have up to 1" long x 0.5" high areas of 100% section loss. **See photos 13-14.**

There are several minor collision scrapes to the beam 9 and 17 cover plates in spans 2 and 3 above the center lanes.

Item 59.7 - Conn Plt's, Gussets & Angles
At the north abutment, there is a small area of 100% section loss to the bottom of the bay 7 end diaphragm connection plate to beam 32.

Several of the beam link plates at piers 1 and 3 have moderate surface rusting and rust flaking. **See photo 12.**

See Item 59.4 - Girders or Beams and Item 59.10 - Diaphragms/Cross Frames.

Item 59.8 - Cover Plates
See Item 59.4 - Girders or Beams.

Item 59.9 - Bearing Devices
There are isolated bearing devices that have their sole plates welded to the bottom flange rather than bolted.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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REMARKS

During bearing replacement, this detail allowed for welding when bolt holes were misaligned to properly locate the bearing device.

All of the bearings over the south abutment have heavy paint peel.

The bearings over all of the piers have heavy surface rusting and minor rust flaking throughout. **See photo 11-14.**

There is moderate rusting and minor pitting to the masonry plates of bearings 29-32 over the north abutment.

Item 59.10 - Diaphragms/Cross Frames
 At the north abutment, there is moderate rusting to the bay 5 end diaphragm and connection plate to beam 29.

Since the previous *Routine Inspection on 2/6/22* the span 3 bays 6 and 7 2nd diaphragms from pier 3 have been repaired. **See photos 9-10.**

Item 59.12 - Welds
 See Item 59.4 - Girders or Beams comments.

Item 59.14 - Paint/Coating
 There are many areas of spot paint peeling and surface rusting throughout all spans. **See photo 2.**

ITEM 60 - SUBSTRUCTURE

Item 60.1 - Abutments
Item 60.1.b - Bridge Seats
 See Item 60.1.d - Breastwalls.

There is a buildup of debris on top of the north bridge seat under bays 6 and 7. **See photo 15.**

Item 60.1.c - Backwalls
South backwall
 There are spalls and areas of concrete deterioration with heavy efflorescence and rust staining, along the cold joints at the interface with the wingwalls, up to full height x 2.5" wide x 2" deep with exposed rusted rebar. **See photos 16-17.**

North backwall
 There are minor intermittent hairline cracks with minor rust staining and efflorescence throughout. There is a full height x 3' wide x up to 3" deep area of concrete deterioration along a cold joint at the east end at the interface with the northeast wingwall. **See photo 18.**

Item 60.1.d - Breastwalls
South breastwall
 Under bays 1 and 2, there is a 10' long x 1/8" wide horizontal crack to the top seat area.
 Under bay 4, there is a 1.5' diameter x 1" deep spall.
 The remainder has isolated minor horizontal and map cracking and areas of scaling.

North breastwall
 There is hairline horizontal, vertical, and map cracking in many areas throughout.
 There is full height delamination cracking at the west end of the breastwall. **See photo 19.**

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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REMARKS

Item 60.1.e - Wingwalls

Southwest wingwall
There is a 2' high x 1' wide x up to 3' deep spall with exposed rusted rebar at the breastwall interface. **See photo 20.**

Southeast wingwall
There is a 2' diameter x up to 3" deep spall with exposed rusted rebar at the breastwall interface. **See photo 21.**

Northeast wingwall
There are two spalls, 3' long x 1' high x 2" deep, and 1' long x 4" high x 1" deep, along the parapet construction joint.

Item 60.2 - Piers or Bents

Item 60.2.a - Pedestals

Pier 1 cap
There is a 3' long x up to 2.5' wide x up to 2" deep area of moderate delamination/spalling to the pedestal to beam 1 and 9 in spans 1 and 2. **See photos 22.**

Pier 2 cap
There is an up to full length x up to full height x 2.5" deep area of spalling to the pier cap at the southwest corner that extends into the pedestal of beam 9 and 17 in spans 2 and 3. **See photo 23.**

There is a 2.5' long x 6" high x 2" deep spall under beam 10 in span 2. **See photo 24.**

There is a 1.5' long x 4' high x up to 2.5" deep area of spalling to the pier cap under bay 4 that extends into the pedestal of beam 13 in span 2. **See photo 25.**

There is a full length x 2.5' high x 2.5" deep area of spalling at the east end of the pier cap that extends into the pedestal to beam 16 and 24 of spans 2 and 3. **See photo 26.**

Item 60.2.b - Caps

There are many repair patches throughout the pier caps and columns. Many of these patches have moderate to heavy delamination cracking, spalling, and heaving. **See photo 27.**

Pier 1 cap
The west and east ends have heavy delamination cracking with efflorescence and spalling with exposed rusted rebar, up to 1' diameter. **See photos 28-29.**

North face, under bay 1 has a spall, 6" high x 1' wide x 2" deep at the top with exposed rusted rebar. **See photo 30.**

Pier 2 cap
The underside of both noses have moderate delamination, map cracking and several spalls with exposed rebar up to 2' diameter. **See photo 31.**

Underside, between columns 1 and 2, there is a spall, 1' diameter x up to 3" deep with exposed rusted rebar.

There is concrete deterioration, and spalling to the east end of the cap with exposed rusted rebar, 1' high x full width x up to 3.5" deep with exposed rusted rebar. **See photo 23.** This spall is encroaching on the pedestals to beam 16 in span 2 bearing assemblies.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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REMARKS

There is a 1.5' high x 3' wide x 3.5" deep spall at the southwest corner of the cap adjacent to the pedestal to beam 9 in span 2. **See photo 26.** This area has been previously repaired and the deterioration appears to be due to water infiltration and separation of the original and repair material.

Pier 3 cap
There is a 1' high x 1' wide x 6" deep spall adjacent to the pedestal to bearing 20 in span 3 on the south face. **See photo 32.**

North face, between column 1 and 2, and above column 3 there are delaminations, up to 2' diameter.

There is delamination cracking up to 1/8" wide along the top south face under bay 6. **See photo 33.**

The east end of the cap has spalls along the bottom corners of the cantilevered section of the cap, up to full height x 1' wide x 4" deep, exposing heavily rusted rebar. **See photo 34.** There is evidence of water infiltration through the deflection/parapet joint above.

Item 60.2.c - Columns

Pier 1
All columns have vertical delamination cracks and map cap cracking with light efflorescence and rust staining throughout.

Column 1 has full width x near full height delamination cracking and scaling to the north face.

Column 2 has a 5" high x 16" wide x 1" deep spall to the bottom north face with an adjacent vertical delamination crack 3" high x 1/8" wide.

Column 3 has delamination cracks and shallow spalls on the north and west faces.

Pier 2
Column 1 has delamination cracking to the south and west face with areas of shallow spalling with exposed rusted rebar along the southwest and southeast corners.

Column 2 has a full height x up to 1/4" wide delamination cracks along the northwest and southwest corners with moisture, efflorescence, and rust staining.

Column 3 has a full height delamination cracking to the northeast corner with rust staining.

Column 4 has an areas of scale/spalling at the top of the northeast corner exposing the rebar cage, 10" high x 6" wide x 1" deep. The deterioration extends into the bottom north corner of the pier cap. There is also an area of scaling at the southeast corner, 1' high x 4" wide x up to 2" deep. **See photo 31.**

Pier 3
Column 1 has a 2' high x 6" wide x 1.5" deep spall with exposed rusted rebar to the southeast corner at mid-height and another 6" diameter x 1/2" deep spall near the top on the east face. The west face of the column has heavy discoloration with delamination cracking and a 1' diameter x 1" deep spall near the base. **See photo 35.** There is a 2.5' high x up to 1' wide area of delamination cracking to the top of the column on the north face at the north east corner and cracking with discoloration along the northwest corner.

Column 2 has a 3" high x 1' wide x 1" deep spall at the southeast corner, mid-height. There is a 1.5' high x 2.5' wide delamination to the top north face. The remainder has up to 1/8" wide vertical delamination cracks.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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REMARKS

Column 3 has a 3' high x full width x 2" deep spall with exposed rusted rebar and adjacent delamination cracking to the south face. **See photo 36.** The east face has a 3' diameter x 1" deep spall with exposed rusted rebar.

Column 4 has a 6" high x 1' wide x 1/2" deep spall to the east face. The northeast corner has a 5' high x 1/4" wide vertical delamination crack.

TRAFFIC SAFETY

Item 36a - Bridge Railing
See Item 58.7 - Parapets.

Item 36b - Transitions
There is an area of minor collision damage to the northeast transition.

Item 36c - Approach Guardrail
All approach guardrails have minor to moderate collision damage throughout, worst at the northeast corner. **See photo 37.**

Item 36d - Approach Guardrail Ends
The northwest approach guardrail end has moderate to heavy collision damage. **See photo 38.**

Sketch / Photo Log

- Sketch 1 : Location map.
- Sketch 2 : Framing plan.
- Photo 1 : West deck fascia over pier 2.
- Photo 2 : Span 2 bay 6 cold joint.
- Photo 3 : Span 2 bay 6, spalled haunch of timber shielding.
- Photo 4 : West deck fascia over pier 3.
- Photo 5 : East jersey barrier south end inside face.
- Photo 6 : South deck joint.
- Photo 7 : Typical deck weep condition. Northwest corner shown.
- Photo 8 : Span 3 beams 23-24 and diaphragm repairs.
- Photo 9 : Span 3 bay 6 2nd diaphragm from pier 3 repair.
- Photo 10 : Span 3 beam 23 repair.
- Photo 11 : Beams 17 and 25 at pier 3.
- Photo 12 : Beam 24 and 32 at pier 3.
- Photo 13 : Beam 24 at pier 3, 100% section loss to stiffener.
- Photo 14 : Beam 16 and 24 at pier 2. Note 100% section loss area to beam 16.
- Photo 15 : North abutment, bay 6 debris accumulation
- Photo 16 : South backwall, west end.
- Photo 17 : South backwall, east end.
- Photo 18 : North backwall, east end.
- Photo 19 : North breastwall, west end.
- Photo 20 : Southwest wingwall.
- Photo 21 : Southeast wingwall.
- Photo 22 : Pier 1, west nose/pedestal area.
- Photo 23 : Pier 2 west nose/pedestal area.
- Photo 24 : Pier 2 south face under beam 10.
- Photo 25 : Pier 2 south face under bay 4.

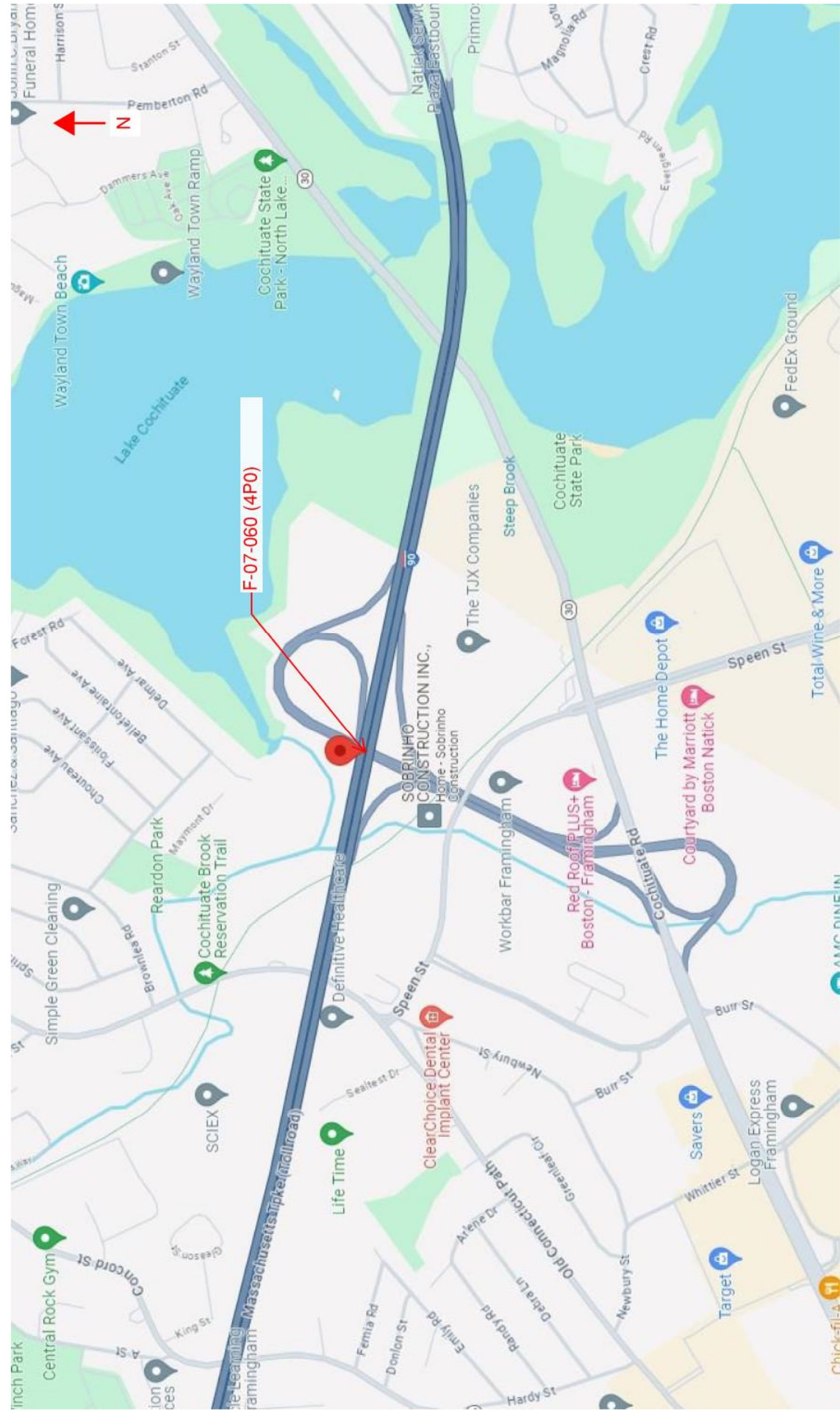
CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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REMARKS

Photo 26 : Pier 2 east nose/pedestal area.
 Photo 27 : Typical delamination cracking in repaired areas. Pier 2 south face under beam 10.
 Photo 28 : Pier 1 west nose.
 Photo 29 : Pier 1 east nose.
 Photo 30 : Pier 1 north face bay 1.
 Photo 31 : Pier 2 east nose.
 Photo 32 : Pier 3 adjacent to bearing 20 south face.
 Photo 33 : Pier 3 bay 6 south face.
 Photo 34 : Pier 3 east nose.
 Photo 35 : Pier 3 column 1.
 Photo 36 : Pier 3 column 3.
 Photo 37 : Northeast approach guardrail.
 Photo 38 : Northwest approach guardrail end.

CITY/TOWN	BR. DEPT. NO.	8.-STRUCTURE NO.	INSPECTION DATE
FRAMINGHAM	4P0	F-07-060	FEB 20, 2024

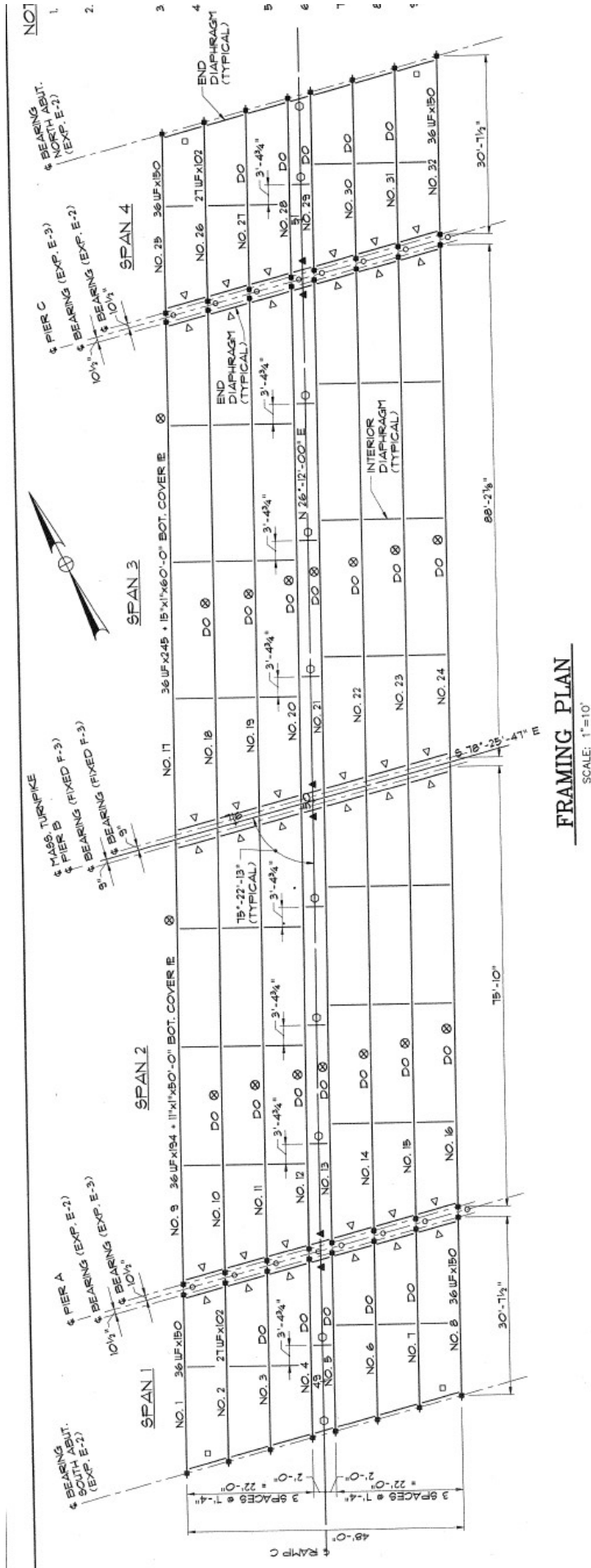
SKETCHES



Sketch 1: Location map.

CITY/TOWN	BR. DEPT. NO.	8-STRUCTURE NO.	INSPECTION DATE
FRAMINGHAM	F-07-060	F07060-4P0-DOT-NBI	FEB 20, 2024

SKETCHES



Sketch 2: Framing plan.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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PHOTOS

Photo 1: West deck fascia over pier 2.



Photo 2: Span 2 bay 6 cold joint.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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PHOTOS



Photo 3: Span 2 bay 6, spalled haunch of timber shielding.



Photo 4: West deck fascia over pier 3.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	---	--

PHOTOS



Photo 5: East jersey barrier south end inside face.



Photo 6: South deck joint.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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PHOTOS

Photo 7: Typical deck weep condition. Northwest corner shown.



Photo 8: Span 3 beams 23-24 and diaphragm repairs.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	---	--

PHOTOS

Photo 9: Span 3 bay 6 2nd diaphragm from pier 3 repair.



Photo 10: Span 3 beam 23 repair.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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PHOTOS

Photo 11: Beams 17 and 25 at pier 3.



Photo 12: Beam 24 and 32 at pier 3.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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PHOTOS

Photo 13: Beam 24 at pier 3, 100% section loss to stiffener.



Photo 14: Beam 16 and 24 at pier 2. Note 100% section loss area to beam 16.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	--	--

PHOTOS



Photo 15: North abutment, bay 6 debris accumulation



Photo 16: South backwall, west end.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	--	--

PHOTOS



Photo 17: South backwall, east end.



Photo 18: North backwall, east end.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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PHOTOS

Photo 19: North breastwall, west end.



Photo 20: Southwest wingwall.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	--	--

PHOTOS

Photo 21: Southeast wingwall.



Photo 22: Pier 1, west nose/pedestal area.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	--	--

PHOTOS



Photo 23: Pier 2 west nose/pedestal area.



Photo 24: Pier 2 south face under beam 10.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	--	--

PHOTOS



Photo 25: Pier 2 south face under bay 4.



Photo 26: Pier 2 east nose/pedestal area.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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PHOTOS



Photo 27: Typical delamination cracking in repaired areas. Pier 2 south face under beam 10.



Photo 28: Pier 1 west nose.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	---	--

PHOTOS**Photo 29: Pier 1 east nose.****Photo 30: Pier 1 north face bay 1.**

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	--	--

PHOTOS

Photo 31: Pier 2 east nose.



Photo 32: Pier 3 adjacent to bearing 20 south face.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	---	--

PHOTOS

Photo 33: Pier 3 bay 6 south face.



Photo 34: Pier 3 east nose.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
--------------------------------	----------------------	----------------------------------	--	--

PHOTOS



Photo 35: Pier 3 column 1.



Photo 36: Pier 3 column 3.

CITY/TOWN FRAMINGHAM	B.I.N. 4P0	BR. DEPT. NO. F-07-060	8.-STRUCTURE NO. F07060-4P0-DOT-NBI	INSPECTION DATE FEB 20, 2024
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PHOTOS



Photo 37: Northeast approach guardrail.



Photo 38: Northwest approach guardrail end.

National Bridge Element Inspection

BDEPT# **F-07-060**Date **02/20/2024**B.I.N. **4P0**District Bridge Inspection Eng'r **Mahmood Azizi**Item 8 **F07060-4P0-DOT-NBI**Inspecting Agency **Mass. Highway Dept.**Span Group **1**Team Leader **Ivan Abermagger**Town **Framingham**Team **Nathaniel Gaines**District **3**

Member(s)

El #	Element Name	Units	Env.	Total Q.	% or Q	State 1	State 2	State 3	State 4
12	Re Concrete Deck	sq feet	2	8,920.000	<input type="checkbox"/> %	8,028.000	892.000		
Notes :									
> 1130	Cracking (RC and Other)	sq feet	2	8,920.000	<input checked="" type="checkbox"/> %	90.00	10.00		
Notes :									
> 510	Wearing Surfaces	sq feet	2	7,860.000	<input type="checkbox"/> %	7,860.000			
Notes :									
107	Steel Opn Girder/Beam	feet	2	1,664.000	<input type="checkbox"/> %	1,664.000			
Notes :									
> 515	Steel Protective Coating	sq feet	2	14,776.000	<input type="checkbox"/> %	738.800	14,037.200		
Notes :									
> > 3440	Eff (Stl Protect Coat)	sq feet	2	14,776.000	<input checked="" type="checkbox"/> %	5.00	95.00		
Notes :									
107	Steel Opn Girder/Beam	feet	3	120.000	<input type="checkbox"/> %	100.000	20.000		
Notes :									
> 1000	Corrosion	feet	3	20.000	<input type="checkbox"/> %		20.000		
Notes :									
> 515	Steel Protective Coating	sq feet	3	1,056.000	<input type="checkbox"/> %	950.400	105.600		
Notes :									
> > 3440	Eff (Stl Protect Coat)	sq feet	3	1,056.000	<input checked="" type="checkbox"/> %	90.00	10.00		
Notes :									
205	Re Conc Column	each	2	12	<input type="checkbox"/> %	5		7	
Notes :									
> 1080	Delamination/Spall/Patched Area	each	2	7	<input type="checkbox"/> %			7	
Notes :									

National Bridge Element Inspection

BDEPT# **F-07-060**

Date **02/20/2024**

B.I.N. **4P0**

District Bridge Inspection Eng'r **Mahmood Azizi**

Item 8 **F07060-4P0-DOT-NBI**

Inspecting Agency **Mass. Highway Dept.**

Span Group **1**

Team Leader **Ivan Abermagger**

Town **Framingham**

Team **Nathaniel Gaines**

District **3**

Member(s)

El #	Element Name	Units	Env.	Total Q.	% or Q	State 1	State 2	State 3	State 4
215	Re Conc Abutment	feet	3	104.000	<input type="checkbox"/> %	74.000	20.000	10.000	
Notes :									
> 1130	Cracking (RC and Other)	feet	3	30.000	<input type="checkbox"/> %		20.000	10.000	
Notes :									
234	Re Conc Pier Cap	feet	2	156.000	<input type="checkbox"/> %		66.000	90.000	
Notes :									
> 1080	Delamination/Spall/Patched Area	feet	2	20.000	<input type="checkbox"/> %		10.000	10.000	
Notes :									
> 1130	Cracking (RC and Other)	feet	2	136.000	<input type="checkbox"/> %		56.000	80.000	
Notes :									
302	Compressn Joint Seal	feet	2	104.000	<input type="checkbox"/> %		101.000	3.000	
Notes :									
> 2350	Debris Impaction	feet	2	101.000	<input type="checkbox"/> %		101.000		
Notes :									
> 2360	Adjacent Deck or Header	feet	2	3.000	<input type="checkbox"/> %			3.000	
Notes :									
> 7000	Damage	feet	2	3.000	<input type="checkbox"/> %			3.000	
Notes :									
311	Moveable Bearing	each	2	48	<input type="checkbox"/> %	44	4		
Notes :									
> 1000	Corrosion	each	2	4	<input type="checkbox"/> %		4		
Notes :									
> 515	Steel Protective Coating	sq feet	2	96.000	<input type="checkbox"/> %		96.000		
Notes :									

National Bridge Element Inspection

BDEPT# **F-07-060**

Date **02/20/2024**

B.I.N. **4P0**

District Bridge Inspection Eng'r **Mahmood Azizi**

Item 8 **F07060-4P0-DOT-NBI**

Inspecting Agency **Mass. Highway Dept.**

Span Group **1**

Team Leader **Ivan Abermagger**

Town **Framingham**

Team **Nathaniel Gaines**

District **3**

Member(s)

El #	Element Name	Units	Env.	Total Q.	% or Q	State 1	State 2	State 3	State 4
> > 3440	<i>Eff (Stl Protect Coat)</i>	sq feet	2	96.000	<input type="checkbox"/> %		96.000		
Notes :									
313	Fixed Bearing	each	3	16	<input type="checkbox"/> %	16			
Notes :									
> 515	Steel Protective Coating	sq feet	3	32.000	<input type="checkbox"/> %				32.000
Notes :									
> > 3440	<i>Eff (Stl Protect Coat)</i>	sq feet	3	32.000	<input type="checkbox"/> %				32.000
Notes :									
331	Re Conc Bridge Railing	feet	2	530.000	<input type="checkbox"/> %	230.000	300.000		
Notes :									
> 1080	<i>Delamination/Spall/Patched Area</i>	feet	2	200.000	<input type="checkbox"/> %		200.000		
Notes :									
> 1130	<i>Cracking (RC and Other)</i>	feet	2	100.000	<input type="checkbox"/> %		100.000		
Notes :									

DOCUMENT B00420

PROPOSAL

DISTRICT 3

For: **Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at Various Locations along I-90**

COMMONWEALTH OF MASSACHUSETTS

LOCATION

The work referred to herein is in the Cities and Towns of DISTRICT 3 in Middlesex, Norfolk, and Worcester Counties, in the Commonwealth of Massachusetts, and is shown by the locus map (Document 00331) in the Proposal Pamphlet, the work locations extend as follows:

at Various Locations

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 **730 CALENDAR DAYS** upon receipt of a Notice to Proceed.

The Work of this project is described by the following Items and quantities.

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Project # 614101		Contract # 133051		
Location : DISTRICT3				
Description : Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at Various Locations along I-90				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
100.1	1,700	BASE LABOR RATE AT _____ PER HOUR		
106.88	4	JACKING AND SHORING AT _____ EACH		
106.881	3	JACKING AND SHORING REMOVED AND RESEST AT _____ EACH		
120.1	18	UNCLASSIFIED EXCAVATION AT _____ PER CUBIC YARD		
127.12	86	REINFORCED CONCRETE SUBSTRUCTURE EXCVAVATION AT _____ PER CUBIC YARD		
151.	30	GRAVEL BORROW AT _____ PER CUBIC YARD		
170.	40	FINE GRADING AND COMPACTING - SUBGRADE AREA AT _____ PER SQUARE YARD		
628.315	2	TEMPORARY IMPACT ATTENUATOR, REDIRECTIVE, TL-3 AT _____ EACH		
628.4	2	TEMPORARY IMPACT ATTENUATOR, REMOVED AND RESET AT _____ EACH		

Project # 614101		Contract # 133051		
Location : DISTRICT3				
Description : Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at Various Locations along I-90				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
748.1	4	EMERGENCY RESPONSE AT _____ EACH		
851.1	225	TRAFFIC CONES FOR TRAFFIC MANAGEMENT AT _____ PER DAY		
852.	440	SAFETY SIGNING FOR TRAFFIC MANAGEMENT AT _____ PER SQUARE FOOT		
853.21	210	TEMPORARY BARRIER REMOVED AND RESET AT _____ PER FOOT		
853.33	210	TEMPORARY BARRIER - LIMITED DEFLECTION (TL-3) AT _____ PER FOOT		
853.403	400	TRUCK MOUNTED ATTENUATOR AT _____ PER DAY		
853.8	170	TEMPORARY ILLUMINATION FOR WORK ZONE AT _____ PER DAY		
854.6	170	TEMPORARY PORTABLE RUMBLE STRIP AT _____ PER DAY		
856.	450	ARROW BOARD AT _____ PER DAY		

Project # 614101		Contract # 133051		
Location : DISTRICT3				
Description : Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at Various Locations along I-90				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
856.12	50	PORTABLE CHANGEABLE MESSAGE SIGN AT _____ PER DAY		
859.	5,000	REFLECTORIZED DRUM AT _____ PER DAY		
859.1	300	REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS AT _____ PER DAY		
905.	86	4000 PSI, 3/8 INCH, 660 CEMENT CONCRETE AT _____ PER CUBIC YARD		
909.2	120	CEMENTITIOUS MORTAR FOR PATCHING AT _____ PER SQUARE FOOT		
910.1	3,200	STEEL REINFORCEMENT FOR STRUCTURES - EPOXY COATED AT _____ PER POUND		
912.	50	DRILLING AND GROUTING DOWELS AT _____ EACH		
987.01	40	SPECIAL SLOPE PAVING UNDER BRIDGE - REPAIRS AT _____ PER SQUARE YARD		
987.02	40	SPECIAL SLOPE PAVING UNDER BRIDGE REMOVED AND RESET AT _____ PER SQUARE YARD		
Total Qty:		13,050		

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DOCUMENT B00842

SCHEDULE OF PARTICIPATION
BY MINORITY OR WOMEN BUSINESS ENTERPRISES (M/WBE)MASSDOT PROJECT NUMBER: 614101PROJECT LOCATION: DISTRICT 3

DATE OF BID OPENING: _____

NAME OF PRIME BIDDER: _____

Name Address and Phone Number of M/WBE	Name of Activity	(a) M/WBE Contractor Activity Amount	(b) M/WBE Other Business Amount	(c) Total amount eligible for credit under rules in Section VIII of the Special Provisions
Total Bid Amount	TOTALS:	\$		\$
\$	M/WBE Percentage of Total bid:	%		%

Column (a) must be at least one-half of the M/WBE percentage goal.

SIGNATURE: _____ Date: _____ Tel No: _____

NAME AND TITLE (PRINT): _____

BIDDERS ARE CAUTIONED TO REVIEW DOCUMENT 00718 -- SPECIAL PROVISION FOR
PARTICIPATION BY MINORITY OR WOMEN BUSINESS ENTERPRISES AND SERVICE DISABLED
VETERAN OWNED BUSINESS ENTERPRISES.

*** END OF DOCUMENT ***

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DOCUMENT B00843

MINORITY OR WOMEN'S BUSINESS ENTERPRISE PARTICIPATION LETTER OF INTENT
PAGE 1 OF 2MASSDOT PROJECT NUMBER: 614101

PROJECT LOCATION: DISTRICT 3

DATE OF BID OPENING:

FROM

(Minority or Women's Business Enterprise Company)

TO:

(Name of Prime Contractor)

1. My company is currently certified as an MBE or WBE by the Massachusetts Supplier Diversity Office, formerly known as the State Office of Minority and Women Business Assistance (SOMWBA). There have been no changes affecting the ownership, control or independence of my company since my last certification review.
2. If any such change occurs prior to my company's completion of this proposed work, I will give written notification to your firm and to the Massachusetts Department of Transportation (MassDOT).
3. (For contractor activity only.) My firm will provide to you, upon request, for the purpose of obtaining subcontractor approval from MassDOT; (1) a resume stating the qualifications and experience of the superintendent or foreperson who will supervise on site-work; (2) a list of equipment owned or leased by my firm for use on the project; (3) a list of all projects (public or private) which my firm is currently performing, is committed to perform, or intends to make a commitment to perform. I shall include, for each project, the names and telephone number of a contact person for the contracting organization, the dollar value of the work, a description of the work, and my firm's work schedule for the Project.
4. If you are awarded the Contract, my company intends to enter into an agreement with your firm to perform the items of work or other activity described on the following sheet for the prices indicated.
5. My firm has the ability to manage, supervise and perform the activity described on the following page.

M/WBE Authorized Signature

Date

MINORITY OR WOMEN'S BUSINESS ENTERPRISE PARTICIPATION LETTER OF INTENT
PAGE 2 OF 2

MASSDOT PROJECT NUMBER: 614101

PROJECT LOCATION: DISTRICT 3

DATE OF BID OPENING:

NAME OF PRIME BIDDER:

<u>Item number</u> if applicable	<u>Description of Activity</u> with notations such as Installation Only, Material Only, or Complete	<u>Quantity</u>	<u>Unit</u> <u>Price</u>	<u>Amount</u>
TOTAL AMOUNT:				

M/WBE COMPANY NAME:

M/WBE AUTHORIZED SIGNATURE:

NAME AND TITLE (PRINT):

TELEPHONE NUMBER:

FAX NUMBER:

*** END OF DOCUMENT ***

Rev'd 9/20/19

DOCUMENT B00846

M/WBE OR SDVOBE JOINT CHECK ARRANGEMENT APPROVAL FORM

(to be submitted by Prime Contractor)

Contract No: 133051 Project No. 614101Location: DISTRICT 3 Bid Opening Date: _____Project Description: Scheduled & Emergency Bridge Structural & Substructure Repairs and Related Work at Various Locations along I-90

We have received the attached request for the use of a joint check arrangement from _____, a M/WBE or SDVOBE on the above- referenced Contract and _____, a Material Supplier/Vendor for the subject Contract. The M/WBE or SDVOBE has complied with the requirements of Special Provision Document 00718. In particular, the M/WBE or SDVOBE 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 M/WBE or SDVOBE) for payment of sums due pursuant to invoices from the Supplier/Vendor and M/WBE or SDVOBE.

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 B00847

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 M/WBE or SDVOBE, 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 M/WBE or SDVOBE Venturer; (4) the commitment of management, supervisory and operative personnel employed by the M/WBE or SDVOBE 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, M/WBE or SDVOBE firm, or the Joint Venture.

	Firm 1 (number)	Firm 2 (number)	Joint Venture (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 ***