

## COMMONWEALTH OF MASSACHUSETTS



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# CONTRACT DOCUMENTS AND SPECIAL PROVISIONS

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PROPOSAL NO.	613202-129788
P.V. =	\$1,889,000.00
PLANS	NO

FOR

**Federal Aid Project No. HIP(BR)-0035(062)X  
Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over  
Route 6 (Mid-Cape Highway)**

**in the Town of****BARNSTABLE**

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

This Proposal to be opened and read:

**TUESDAY, APRIL 29, 2025 at 2:00 P.M.**

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## DOCUMENT 00010

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



DOCUMENT 00104

**NOTICE TO CONTRACTORS**

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

**TUESDAY, APRIL 29, 2025 at 2:00 P.M. \*\*****BARNSTABLE****Federal Aid Project No. HIP(BR)-0035(062)X****Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over  
Route 6 (Mid-Cape Highway)****\*\*Date Subject to Change****PROJECT VALUE = \$1,889,000.00**

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

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

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

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

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

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

**NOTICE TO CONTRACTORS** (Continued)

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

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

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

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

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

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

**NOTICE TO CONTRACTORS** (Continued)**PRICE ADJUSTMENTS**

This Contract contains price adjustments for hot mix asphalt and Portland cement mixtures, diesel fuel, and gasoline. For reference the base prices are as follows: liquid asphalt \$622.50 per ton, Portland cement \$425.53 per ton, diesel fuel \$2.759 per gallon, and gasoline \$2.346 per gallon, and Steel Base Price Index 356.2. MassDOT posts the **Price Adjustments** on their Highway Division's website at

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

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

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

Prospective bidders and interested parties can access this information and more via the internet at [WWW.COMMBUYS.COM](http://WWW.COMMBUYS.COM).

BY: Monica G. Tibbits-Nutt, Secretary and CEO, MassDOT  
Jonathan L. Gulliver, Administrator, MassDOT Highway Division  
SATURDAY, MARCH 22, 2025

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## DOCUMENT 00210

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

July 1, 1981, updated October 2016

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

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

- (1) "Contractor" means any person, corporation, partnership, joint venture, sole proprietorship, or other entity awarded a contract pursuant to sections thirty-eight A1/2 to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A to forty-four H, inclusive, of chapter one hundred and forty-nine, which is for an amount or estimated amount greater than one hundred thousand dollars.
- (2) "Contract" means any contract awarded or executed pursuant to sections thirty-eight A1/2 to thirty-eight O, inclusive, of chapter seven and any contract awarded or executed pursuant to section eleven C of chapter twenty-five A, section thirty-nine M of chapter thirty, or sections forty-four A through forty-four H, inclusive, of chapter one hundred and forty-nine, which is for amount or estimated amount greater than one hundred thousand dollars.
- (3) "Records" means books of original entry, accounts, checks, bank statements and all other banking documents, correspondence, memoranda, invoices, computer printouts, tapes, discs, papers and other documents or transcribed information of any type, whether expressed in ordinary or machine language.
- (4) "Independent Certified Public Accountant" means a person duly registered in good standing and entitled to practice as a certified public accountant under the laws of the place of his residence or principal office and who is in fact independent. In determining whether an accountant is independent with respect to a particular person, appropriate consideration should be given to all relationships between the accountant and that person or any affiliate thereof. Determination of an accountant's independence shall not be confined to the relationships existing in connection with the filing of reports with the awarding authority.
- (5) "Audit", when used in regard to financial statements, means an examination of records by an independent certified public accountant in accordance with generally accepted accounting principles and auditing standards for the purpose of expressing a certified opinion thereon, or, in the alternative, a qualified opinion or a declination to express an opinion for stated reasons.
- (6) "Accountant's Report", when used in regard to financial statements, means a document in which an independent certified public accountant indicates the scope of the audit which he has made and sets forth his opinion regarding the financial statements taken as a whole with a listing of noted exceptions and qualifications, or an assertion to the effect that an overall opinion cannot be expressed. When an overall opinion cannot be expressed the reason therefor shall be stated. An accountant's report shall include as a part thereof a signed statement by the responsible corporate officer attesting that management has fully disclosed all material facts to the independent certified public accountant, and that the audited financial statement is a true and complete statement of the financial condition of the contractor.
- (7) "Management", when used herein, means the chief executive officers, partners, principals or other person or persons primarily responsible for the financial and operational policies and practices of the contractor.
- (8) Accounting terms, unless otherwise defined herein, shall have a meaning in accordance with generally accepted accounting principles and auditing standards.

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

- (1) The contractor shall make, and keep for at least six years after final payment, books, records, and accounts which in reasonable detail accurately and fairly reflect the transactions and dispositions of the contractor, and
- (2) Until the expiration of six years after final payment, the office of inspector general, and the commissioner of capital asset management and maintenance shall have the right to examine any books, documents, papers or records of the contractor or of his subcontractors that directly pertain to, and involve transactions relating to, the contractor or his subcontractors, and
- (3) If the agreement is a contract as defined herein, the contractor shall describe any change in the method of maintaining records or recording transactions which materially affect any statements filed with the awarding authority, including in his description the date of the change and reasons therefor, and shall accompany said description with a letter from the contractor's independent certified public accountant approving or otherwise commenting on the changes, and
- (4) If the agreement is a contract as defined herein, the contractor has filed a statement of management on internal accounting controls as set forth in paragraph (c) below prior to the execution of the contract, and
- (5) If the agreement is a contract as defined herein, the contractor has filed prior to the execution of the contracts and will continue to file annually, an audited financial statement for the most recent completed fiscal year as set forth in paragraph (d) below.

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

- (1) transactions are executed in accordance with management's general and specific authorization;
- (2) transactions are recorded as necessary
  - i. to permit preparation of financial statements in conformity with generally accepted accounting principles, and
  - ii. to maintain accountability for assets;
- (3) access to assets is permitted only in accordance with management's general or specific authorization; and
- (4) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action was taken with respect to any difference.

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

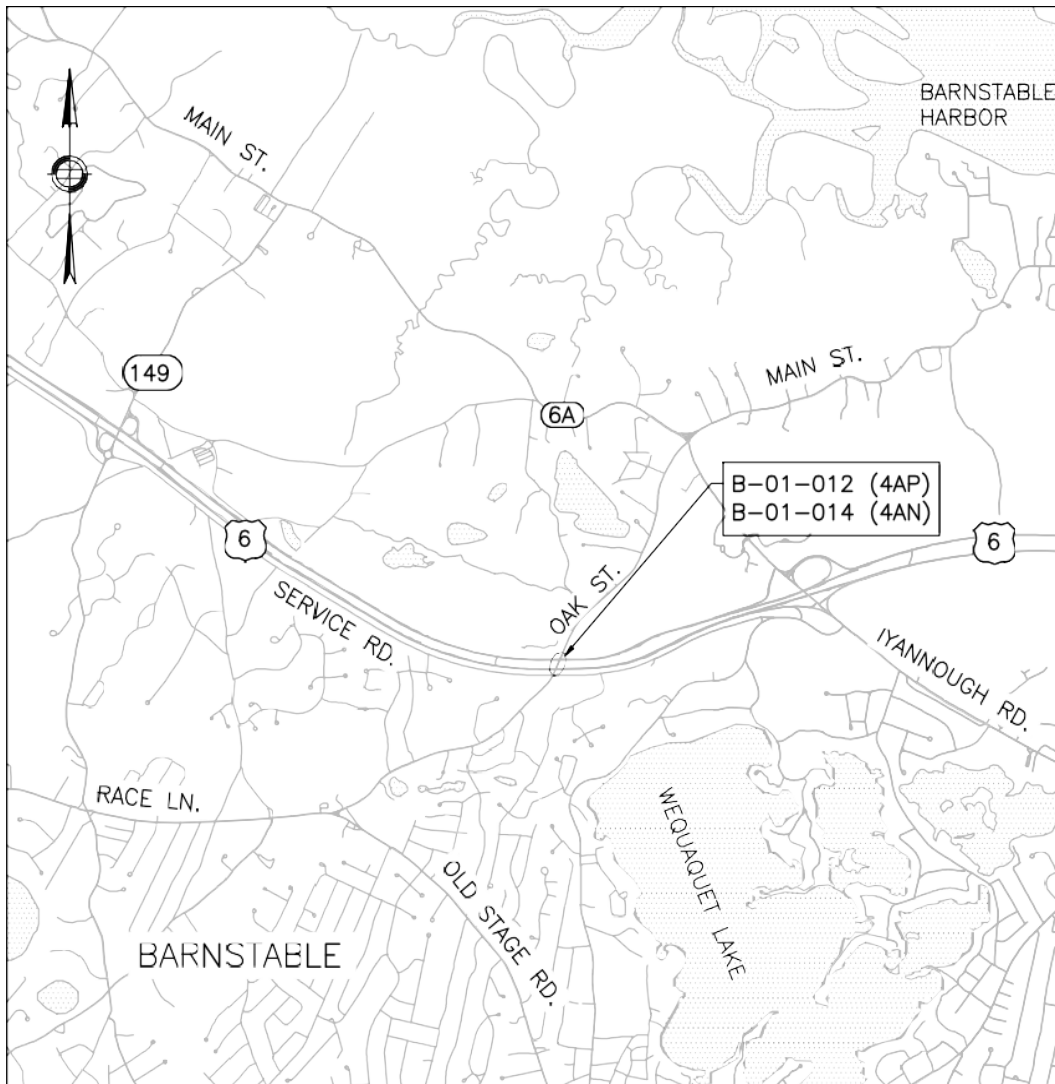
- (1) whether the representations of management in response to this paragraph and paragraph (b) above are consistent with the result of management's evaluation of the system of internal accounting controls; and
- (2) whether such representations of management are, in addition, reasonable with respect to transactions and assets in amounts which would be material when measured in relation to the applicant's financial statements.



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DOCUMENT 00331

**LOCUS MAP****BARNSTABLE****Federal Aid Project No. HIP(BR)-0035(062)X****Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over  
Route 6 (Mid-Cape Highway)**

NOT TO SCALE

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

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

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WORK NOT COMPLETED WITHIN SPECIFIED TIME:

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Revised: 04/28/17

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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)							<b>Overall Rating:</b>	

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

District Construction Engineer's Signature/Date \_\_\_\_\_

Resident Engineer's Signature/Date \_\_\_\_\_

Contractor Signature Acknowledging Report/Date \_\_\_\_\_

Subcontractor Signature Acknowledging Report/Date \_\_\_\_\_

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

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

\_\_\_\_\_

Contractor's Comments: \_\_\_\_\_

\_\_\_\_\_



DOCUMENT 00710  
GENERAL CONTRACT PROVISIONS  
Revised: 05/06/24

NOTICE OF AVAILABILITY

The STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES dated 2024, the SUPPLEMENTAL SPECIFICATIONS, the 1996 METRIC CONSTRUCTION AND TRAFFIC STANDARD DETAILS, the 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; the 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING and the 2017 CONSTRUCTION STANDARD DETAILS are available online at <https://www.mass.gov/massdot-highway-division-manuals-and-publications>

SPECIAL PROVISIONS FOR RIGHT-TO-KNOW ACT REQUIREMENTS

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

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

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

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

ALTERNATIVE DISPUTE RESOLUTION

Forum, Choice of Law and Mediations:

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

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DOCUMENT 00715



## SUPPLEMENTAL SPECIFICATIONS

SEPTEMBER 30, 2024

The 2024 *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 1: DEFINITION OF TERMS

##### Subsection 1.03: Defined Terms

*Under Part of the First Part replace the words Chapter 90 of the General Laws with MGL Chapter 6C, Section 4[b].*

#### SECTION 2: PROPOSAL REQUIREMENTS AND CONDITIONS

##### Subsection 2.01: Proposal Forms and Plans

*Replace the first paragraph under A. Prequalification Prior to Requesting Proposal Forms with the following:*

Subject to the requirements of M.G.L. Chapter 81, Section 8B, each prospective Bidder proposing to bid on any work, excepting the construction, reconstruction, repair or alteration of buildings, to be awarded by the Department or by a municipality under the provisions of M.G.L. Chapter 6C, Section 4(b) must be prequalified in accordance with 700 CMR 14.00 Prequalification of contractors and subcontractors, if the amount of the proposal added to the value of the uncompleted work already under contract with the Department will aggregate \$50,000 or more.

*Replace the second paragraph under B. Issuance of Proposal Forms and Plans with the following:*

For projects to be awarded under the provisions of M.G.L. Chapter 6C, Section 4(b), bidders may obtain plans and specifications from the applicable municipality at the place specified in the Notice to Contractors.

#### SECTION 4: SCOPE OF WORK

##### Subsection 4.04: Changed Conditions

*Replace the last paragraph with the following.*

The provisions of Section 39N of Chapter 30 of the General Laws, as amended, do not apply to construction contracts entered into on behalf of a municipality under the provisions of M.G.L. Chapter 6C, Section 4(b).

**Subsection 4.06: Increased or Decreased Contract Quantities**

*Replace the second paragraph with the following.*

Where the actual quantity of a pay item varies by more than 25% above or below the estimated quantity stated in the Contract, an equitable adjustment in the Contract Price for that pay item shall be negotiated upon demand of either party regardless of the cause of the variation in quantity. A demand for an equitable adjustment must be submitted to the other party within 30 days after beginning the work of the affected item that is greater than 25% above the bid quantity or within 30 days after completing the work when the actual quantity is 25% less than the bid quantity.

**SECTION 9: MEASUREMENT AND PAYMENT****Subsection 9.03: Payment for Extra Work**

*Replace paragraph B., (2) with the following.*

- (2) Plus 13 percent of direct labor, for the actual 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, ~~and~~ 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.

**Subsection 9.04: Partial Payments**

*Replace the last sentence of the first paragraph with the following;*

No such estimates or payment shall be required to be made when, in the Engineer's judgment, the work is not proceeding in accordance with the provisions of the Contract, or when in their judgment the total value of the work completed since the last estimate amounts to less than \$5,000.00.

## **DIVISION II**

### **CONSTRUCTION DETAILS**

#### DIVISION II: Construction Details

*Replace M4.02.15 Cement Mortar with M4.04.0 Grout, Mortar, and Concrete Products where encountered, including in Subsections 230.40, 485.40, 501.40, 685.40, 940.40A and 983.40.*

### **SECTION 100: EARTHWORK, GRADING, DEMOLITION, RODENT CONTROL AND BORINGS**

#### **SUBSECTION 150: EMBANKMENT**

##### Subsection 150.62: Embankment Construction with Materials Other Than Rock

*Replace the fourth paragraph with the following.*

The embankment materials shall be compacted to not less than 95% of the maximum dry density of the embankment material as determined by AASHTO T 99, Method C. If required, a correction for oversized particles shall be in accordance with Annex A of AASHTO T 99. If the material retained on the  $\frac{3}{4}$ -in. sieve is 30% or more of the total sample, this test shall not apply and the material shall be compacted to the target density. The target density shall be established by determining the number of passes of a roller required to produce a constant and uniform density, after conducting a series of tests using either AASHTO T 310, *In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)*, AASHTO T 191, *Density of Soil In-Place by the Sand-Cone Method*, or *ASTM D 8167 Standard Test Method for In-Place Bulk Density of Soil and Soil-Aggregate by a Low-Activity Nuclear Method (Shallow Depth)*. The Contractor shall, without additional compensation, employ whatever measures may be necessary to adjust the natural water content of the suitable embankment material to permit the placement and compaction as hereinbefore specified.

#### **SUBSECTION 160: CONTROLLED LOW-STRENGTH MATERIAL**

##### Subsection 160: Controlled Low-Strength Material

*Add this new subsection.*

#### **DESCRIPTION**

##### **160.20: General**

Controlled Low-Strength Material shall be installed in accordance with the relevant provisions of Subsection 150: Embankment, Section 901: Cement Concrete and in accordance with the procedures described herein.

Controlled Low Strength Materials (CLSM) shall be a self-compacting, self-leveling, flowable, excavatable or non-excavatable, low strength, rigid setting, and unshrinkable material, used as an alternative to compacted granular fills, including backfill, structural fill, utility fill, pavement base, subgrade, subbase, base course, conduit bedding, erosion control, and void filling.

#### **MATERIALS**

##### **160.40: General**

Material for controlled low-strength material shall meet the requirement specified of M4.08.0 Controlled Low-Strength Material. The material shall be specified by the Engineer as one of the following types;

- CLSM – Manual Excavatable ( $\leq 100$  psi)
- CLSM – Mechanical Excavatable (101-300 psi)
- CLSM – Structural Non Excavatable ( $> 300$  psi)

Permeability testing as specified in Table M4.08.0-2 shall be required when the material is placed outside of roadway areas or footings for concrete structures, or as directed by the Engineer.

## CONSTRUCTION METHODS

### 160.60: General

The Contractor shall submit a placement plan for Controlled Low-Strength Material (CLSM). The plan shall include the type of CLSM, detailed descriptions of methods used for placing and containing the controlled density fill and the set time to strength.

The Contractor shall remove all debris prior to placing the fill. Fill shall not be placed against any structural elements or utilities unless approved by the Engineer.

CLSM shall be poured in lifts not exceeding 4 feet to insure stability under the fluid effects of the pour. Care shall be taken to ensure the integrity of the forms or other means of supporting the material until the material sets up.

## COMPENSATION

### 160.80: Method of Measurement

Controlled Low-Strength Material shall be measured by the cubic yard in place to the neat lines established on the plans or specified by the Engineer. When backfilling pipes the horizontal neat lines shall be not greater than 3.0 ft. greater than the rated inside diameter of the pipe and vertically from the top of the crushed stone foundation material, if any, or 6 in. below the pipe invert whichever is less to the specified top elevation. A deduction shall be made for the volume of the pipe or conduit encased.

### 160.81: Basis of Payment

Payment under this item shall constitute full compensation for the placement, testing, and all material, equipment and labor to complete the work.

### 160.82: Payment Items

- |       |  |
|-------|--|
| 160.1 | Controlled Low-Strength Material -..... Cubic Yard               |
|       | Manual Excavatable ( $\leq 100$ PSI)                             |
| 160.2 | Controlled Low-Strength Material -..... Cubic Yard               |
|       | Mechanical Excavatable (101-300 PSI)                             |
| 160.3 | Controlled Low-Strength Material ( $> 300$ PSI) ..... Cubic Yard |

## SECTION 200: DRAINAGE

### SUBSECTION 201: BASINS, MANHOLES AND INLETS

#### Subsection 201.40: General

Replace "Cement Mortar ..... M4.02.15" with "Mortar ..... M4.04.0".

## **SECTION 400: SUB-BASE, BASE COURSES, SHOULDERS, PAVEMENTS AND BERMS**

### **SUBSECTION 401: GRAVEL SUB-BASE**

#### Subsection 401.60: Gravel Sub-base

*Replace the last sentence of the first paragraph with the following.*

The specific density of the Gravel Sub-base shall be maintained by determining the number of passes of a roller required to produce a constant and uniform density, after conducting a series of tests using a nuclear device or the sand/volume method in accordance with AASHTO T310, AASHTO T 191, or ASTM D 8167.

### **SUBSECTION 402: DENSE GRADED CRUSHED STONE FOR SUB-BASE**

#### Subsection 402.61: Spreading and Compacting

*Replace the last sentence of the first paragraph with the following.*

The specified density of the Dense Graded Crushed Stone shall be maintained by determining the number of passes of a roller are required to produce a constant and uniform density, after conducting a series of tests using a nuclear device or the sand/volume method in accordance with AASHTO T310, AASHTO T 191, or ASTM D 8167.

### **SUBSECTION 403: RECLAIMED PAVEMENT FOR BASE COURSE AND/OR SUB-BASE**

#### Subsection 403.64: Compaction and Dust Control

*Replace the second paragraph with the following.*

The reclaimed base course shall be tested for compaction and smoothness and accuracy of grade in accordance with the applicable provisions of 401.60: Gravel Sub-base. The required density shall be measured by using a nuclear device or the sand/volume method in accordance with AASHTO T310, AASHTO T 191, or ASTM D 8167. If any portions are found to be unacceptable by the Engineer, such portions shall be reprocessed, regraded, and recompacted until the required smoothness and accuracy are obtained.

### **SUBSECTION 404: RECLAIMED PAVEMENT BORROW MATERIAL**

#### Subsection 404.60: General

*Replace the second sentence with the following.*

The specified density of the Reclaimed Pavement Borrow Material shall be maintained by determining the number of passes of a roller that are required to produce a constant and uniform density, after conducting a series of tests using a nuclear device or the sand/volume method in accordance with AASHTO T310, AASHTO T 191, or ASTM D 8167

### **SUBSECTION 450: HOT MIX ASPHALT PAVEMENT**

#### Subsection 450.40: General

*Add the following paragraph to the end of this subsection.*

Prior to placing hot mix asphalt the contractor shall provide notice to the Engineer at least 48 hours in advance of the work. The notice shall include the anticipated schedule, HMA tonnage, the type of mix, the mix provider and plant location.

### **SUBSECTION 460: HOT MIX ASPHALT PAVEMENT FOR LOCAL ROADS**

#### Subsection 460.40: General

*Add the following paragraph to the end of this subsection.*

Prior to placing hot mix asphalt the contractor shall provide notice to the Engineer at least 48 hours in advance of the work. The notice shall include the anticipated schedule, HMA tonnage, the type of mix, the mix provider and plant location.

## **SUBSECTION 466: STRESS ABSORBING MEMBRANE & STRESS ABSORBING MEMBRANE INTERLAYER**

### Subsection 466.40: General

*Replace this subsection with the following.*

Prior to placing stress absorbing membrane the contractor shall provide notice to the Engineer at least 48 hours in advance of the work. The notice shall include the anticipated schedule, tonnage, the type of mix, the mix provider and plant location. Stress absorbing membrane and stress absorbing membrane interlayer shall be constructed as specified herein.

## **SUBSECTION 470: HOT MIX ASPHALT PAVEMENT BERM**

### Subsection 470.40: General

*Replace this subsection with the following.*

Prior to placing hot mix asphalt the contractor shall provide notice to the Engineer at least 48 hours in advance of the work. The notice shall include the anticipated schedule, HMA tonnage, the type of mix, the mix provider and plant location. The Contractor shall obtain HMA berm material of the type specified.

## **SUBSECTION 472: TEMPORARY ASPHALT PATCHING**

### Subsection 472.40: General

*Add the following paragraph to the beginning of this subsection.*

Prior to placing hot mix asphalt the contractor shall provide notice to the Engineer at least 48 hours in advance of the work. The notice shall include the anticipated schedule, HMA tonnage, the type of mix, the mix provider and plant location.

## **SUBSECTION 486: ULTRATHIN BONDED OVERLAY**

### Subsection 486.40: General

*Add the following paragraph to the end of this subsection.*

Prior to placing ultrathin bonded overlay the contractor shall provide notice to the Engineer at least 48 hours in advance of the work. The notice shall include the anticipated schedule, tonnage, the type of mix, the mix provider and plant location.

## **SECTION 600: HIGHWAY GUARD, FENCES AND WALLS**

### **SUBSECTION 690: WALLS REMOVED AND RESET**

#### Subsection 690.40: General

*Replace the last sentence with the following.*

Mortar shall meet the requirement of M4.04.0: Grout, Mortar, and Concrete Products.

## **SECTION 700: INCIDENTAL WORK**

### **SUBSECTION 702: HOT MIX ASPHALT SIDEWALKS AND DRIVEWAYS**

#### Subsection 702.40: General

*Add the following paragraph to the end of this subsection.*

Prior to placing hot mix asphalt the contractor shall provide notice to the Engineer at least 48 hours in advance of the work. The notice shall include the anticipated schedule, HMA tonnage, the type of mix, the mix provider and plant location.

## SECTION 800: TRAFFIC CONTROL DEVICES

### SUBSECTION 825: RECTANGULAR RAPID FLASHING BEACONS

#### Subsection 825: Rectangular Rapid Flashing Beacons

*Add this new subsection.*

#### DESCRIPTION

##### **825.20: General**

This work shall consist of furnishing and installing a solar-powered, actuated, Rectangular Rapid Flashing Beacon (RRFB) system at the location(s) shown in the Plans.

#### MATERIALS

##### **825.40: General**

Rectangular Rapid-Flashing Beacons shall meet the requirements specified in the following Subsections of Division III, Materials:

Cement Concrete.....	M4.02.00
Signal Posts and Bases .....	M10.05.1
APS Pushbuttons.....	M10.09.1
RRFB Assemblies.....	M10.11.0

An RRFB system shall include the following items (quantities shown in the Major Items List found in the Plans):

- Cement Concrete Foundation
- Signal Post and Pedestal Base
- APS Pushbutton
- Light Bar
- Signage
- Enclosure for Controller, Activation Unit, and Battery System
- Solar Panel
- All mounting and supporting hardware and wiring necessary to complete a working system

The Contractor shall supply cement concrete foundations per the Plans.

The Contractor shall supply Schedule 80 aluminum signal posts with a brushed or spun finish and square, pedestal aluminum bases with a natural finish unless otherwise shown in the Plans or Special Provisions.

Each Light Bar shall have a pair of yellow beacons facing one or both directions of traffic, as shown in the Plans.

All sign designs shall conform to the MUTCD. Sign panel information, including dimensions, shall be per the Plans.

The warning signs (MUTCD code W11-2, W11-15, or S1-1 signs – see Plans for sign type), and the diagonal downward arrow sign (W16-7P) signs shall be on Type A substrate, conforming to 828.42: Panels. The sign sheeting shall be fluorescent yellow-green, conforming to ASTM D4956 Type IX.

An R10-25 sign, conforming to the MUTCD, shall be mounted above the APS Pushbutton on a Type A substrate or may be integral to the button assembly.

The solar panel and battery system may be integrated into a single unit or housed separately, per the manufacturer's design. These may also be co-housed with the Light Bar and/or the Controller and Activation Unit.



The solar panel and battery system shall be sized appropriately to accommodate 300 actuations per day, 365 days a year, for the duration of the repeating flashing sequence shown in the Plans. The sizing calculations shall be based upon solar and temperature conditions for a typical December-January in Massachusetts. The system shall have a minimum autonomy of 5 days.

Each assembly shall be rated for wind speeds of up to 90 mph.

Any proprietary software required for the programming and/or operation of the system during its lifetime shall be included at no additional cost.

#### **825.41: Shop Drawings**

Within 30 days from the Notice to Proceed the Contractor shall submit shop drawings for the RRFB system, including cutsheets for all components to show conformance with M10.05, M10.09.1, and M10.11.0 and these specifications.

Shop drawings shall include all solar and battery sizing calculations. These calculations shall have Contractor- or manufacturer-supplied, site-specific shading factors applied.

#### **825.42: Material Warranties**

All RRFB components shall include a minimum 1-year manufacturer's replacement warranty for manufacturing or installation defects starting at the date of acceptance by the Engineer. A battery shall be considered defective should it not retain 80% of its original capacity within the warranty period.

### **CONSTRUCTION METHODS**

#### **825.60: General**

RRFBs shall be installed on new foundations at the locations as shown in the Plans. Bases shall be secured to the foundation in accordance with the manufacturer's specifications.

All systems shall be installed per the manufacturer's instructions.

The location and orientation of the system shall be per the Plans.

The arrow on each APS pushbutton shall be aligned parallel to the direction of travel of the crosswalk.

The Light Bar(s) shall be oriented towards the incoming lane(s).

Solar panels shall be oriented to maximize sunlight gain.

### **SYSTEM OPERATION**

#### **825.70: APS Pushbuttons**

APS Pushbuttons shall actuate the RRFB system. Upon actuation, an audible speech message shall be broadcast from each pushbutton in the system that says, "Warning lights are flashing," shall be stated twice. This message shall be repeated upon each actuation. No other messages shall be allowed.

While the system is in dark mode, the APS Pushbuttons shall broadcast a locator tone. The locator tone shall have a duration of 0.15 seconds or less and shall repeat at 1-second intervals at all times that the system is in dark mode. The locator tone shall be set 2 to 5 dBA above ambient sound, shall automatically adjust intensity, but cap at a maximum volume of 100 dBA.

APS Pushbuttons shall have all other vibrotactile and percussive indications disabled.

#### **825.71: Light Bar**

The Light Bar shall remain dark until actuated.



Upon actuation, all Light Bars in the system shall be activated simultaneously for a predetermined repeating flash sequence. The flashing rate shall be 75 flashing sequences per minute.

The left and right yellow beacons shall operate using the following sequence:

- A. The yellow beacon on the left-hand side shall be illuminated for approximately 50 milliseconds.
- B. Both yellow beacons shall be dark for approximately 50 milliseconds.
- C. The yellow beacon on the right-hand side shall be illuminated for approximately 50 milliseconds.
- D. Both yellow beacons shall be dark for approximately 50 milliseconds.
- E. The yellow beacon on the left-hand side shall be illuminated for approximately 50 milliseconds.
- F. Both yellow beacons shall be dark for approximately 50 milliseconds.
- G. The yellow beacon on the right-hand side shall be illuminated for approximately 50 milliseconds.
- H. Both yellow beacons shall be dark for approximately 50 milliseconds.
- I. Both yellow beacons shall be illuminated for approximately 50 milliseconds.
- J. Both yellow beacons shall be dark for approximately 50 milliseconds.
- K. Both yellow beacons shall be illuminated for approximately 50 milliseconds.
- L. Both yellow beacons shall be dark for approximately 250 milliseconds.

The flash rate of each individual RRFB indication, as applied over the full flashing sequence, shall not be more than 5 flashes per second, to avoid frequencies that might cause seizures.

The sequence shall then be repeated until the duration time has been met and then all yellow beacons shall return to dark mode simultaneously. The duration time shall be per the Plans.

The predetermined repeating flash sequence shall be immediately initiated every time a pushbutton detector is actuated. If the RRFBs are already flashing and an actuation is received, it shall restart the duration time. There shall be no delay time programmed between actuations.

## COMPENSATION

### 825.80: Method of Measurement

RRFBs will be measured as a single system, 2-Post Assembly or 3-Post Assembly, furnished and installed.

### 825.81: Basis of Payment

The work will be paid for at the contract price each under the respective item for a 2-Post Assembly System or 3-Post Assembly System. Any additional wiring, mounting equipment, or other materials or labor required to for an operating system per the Plans and Specifications shall be considered as incidental to the construction and be included in the contract price.

### 825.82: Payment Item

825.2	RRFB (2-Post Assembly System) .....	Each
825.3	RRFB (3-Post Assembly System) .....	Each

## SECTION 900: STRUCTURES

### Subsection 922: Elastomeric Bearing Pads

*Add this new subsection.*

### SUBSECTION 922: ELASTOMERIC BEARING PADS

#### DESCRIPTION

#### 922.20: General

This specification consists of the construction requirements for elastomeric bearing pads. Elastomeric bearing pads shall consist of plain or laminated bearings consisting of layers of elastomers restrained at their interfaces by bonded steel laminates.

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## MATERIALS

### 922.40: General

Elastomeric bearing pads shall meet the following requirements:

Elastomeric Bearing Pads .....	M9.14.5
Anchor bolts .....	M8.01.5

## CONSTRUCTION METHODS

### 922.50: Submittals

The Contractor shall submit the following to the Engineer for approval:

1. Prior to fabrication:
  - a. Written notification 30 days prior to the start of bearing production. The notification shall include the contract number, quantity, type, and size of bearing being produced, manufacturer's name, and the name of the independent testing lab.
  - b. Shop drawings for approval in accordance with Subsection 5.02, 14 days prior to the start of bearing production.
2. At the time of bearing pad delivery:
  - a. A certificate of compliance (COC) certifying that the elastomeric bearing pads meet the requirements of the contract specifications. The COC shall be accompanied by:
    - A mill certificate for steel laminates used in bearings, where applicable.
    - Fabricator QC test reports.
  - b. Independent test results as required under Subsection 922.62.

### 922.51: Fabricators

Fabricators shall be in accordance with Subsection M9.14.5D.

### 922.52: Fabrication

Fabrication shall be in accordance with Subsection M9.14.5E.

In addition to the number of bearing pads required for the contract the Contractor shall order additional bearing pads as defined in Subsection M9.14.5G, in order to allow the Engineer to randomly select a bearing pad for testing in accordance with 922.72.

### 922.53: Packaging, Handling, & Storage

The bearing pads shall be packaged, handled, and stored in accordance with Subsection M9.14.5F.

All bearing devices and components shall be stored on the project in an area that provides protection from environmental and physical damage. When installed, bearings shall be clean and free of all foreign substances.

### 922.54 Installation

Bearing pads shall be installed only on concrete bridge seat bearing areas that have been prepared in accordance with Subsection 901.65A(3).

Bearing pads shall be installed by qualified personnel to the positions, elevations, and slopes shown on the plans and to the dimensions and offsets prescribed by the manufacturer. The bearing pads shall be adjusted, as necessary, to take into account the ambient temperature at installation and future movements of the bridge due to temperature changes, release of falsework, and shortening due to post-tensioning.

Elastomeric bearings shall be placed directly on the concrete surface provided that it is flat within the bearing area to within a tolerance of 0.005 times the smallest nominal dimension of the bearing as measured by a straight edge from peak to valley. Bearings shall be placed on surfaces that do not deviate from the specified bridge seat slope in any direction by more than 0.01 rad.

Any bearing areas that exceed these tolerances shall be brought into compliance by grouting or use of shims as directed by the Engineer before the weight of the structure acts on the bearing.

Bearings that have an internal tapered load plates shall be marked with an arrow that points up-station in order to properly align the slope of the internal tapered load plate with the centerline of the bridge.

Sole plates that sit on the bearing shall not be welded to the beam flange in the field unless at least 1.5 in. of the steel exists between the weld and the elastomer. In no case shall the elastomer or the bond be subjected to temperatures higher than 400°F.

No beams shall be erected until the bearings have been accepted by the Engineer.

#### CONTRACTOR QUALITY CONTROL

##### **922.60: General**

The Contractor shall provide a Quality Control System (QC System) to ensure that all materials and workmanship meet the required specifications.

##### **922.61: Quality Control Inspection**

The Contractor shall perform QC inspection of all work items addressed under this specification. Inspection activities during placement may be performed by qualified production personnel. The Contractor's QC personnel shall have overall responsibility for the QC inspection. The Contractor shall not rely on the results of the Engineer's Acceptance inspection for QC purposes. The Engineer shall be provided with the opportunity to monitor and witness all QC inspections.

QC inspection activities must address the following three primary components:

- a. Materials
- b. Environmental Conditions
- c. Workmanship

The minimum frequency of QC inspection activity shall be in accordance with the requirements below.

**Table 922.61-1 - Minimum QC Inspection of Elastomeric Bearing Pads**

<b>Inspection Component</b>	<b>Inspection Attribute</b>	<b>Minimum Inspection Frequency</b>	<b>Point of Inspection</b>	<b>Inspection Method</b>
Materials	Bearing Pad	Each Delivery	Bearing Pad	Check COC
	Geometry and Surface	Each Bearing Pad	Bearing Pad Surface	Visual Check & Check Measurement
Environmental Conditions	Temperature of Air	1 per Day	At Project Site	Check Measurement
Workmanship	Bridge Seat	Each Bearing Location	Bearing Pad Location	Visual Check
	Elevation	Each Bearing Pad	Bearing Pad Location	Check Measurement
	Orientation	Each Bearing Pad	Bearing Pad Location	Check Measurement

**922.62: Quality Control Sampling and Testing Requirements**

The Contractor shall have each Lot of bearing pads sampled and tested in accordance with Subsection M9.14.5G. This shall include both QC and compliant independent laboratory test results.

**DEPARTMENT ACCEPTANCE****922.70: General**

The Department shall sample and test bearing pads as part of its Acceptance activities. Independent testing shall also be used to supplement its testing.

**922.71: Acceptance Inspection**

The Engineer will perform Acceptance inspection to ensure that materials and completed work are in conformance with the contract requirements. Acceptance inspection is intended to visually assess the quality of each Lot produced and placed and will address only the inspection components of materials and workmanship in support of the Department's final Acceptance determination. All Acceptance inspection activities by the Department will be performed independent of the Contractor's QC inspection.

**Table 922.71-1 – Department Acceptance Inspection of Elastomeric Bearing Pads**

Inspection Component	Inspection Attribute	Minimum Inspection Frequency	Point of Inspection	Inspection Method
<b>Materials</b>	Bearing Pad	1 Per Bearing Pad	Bearing Pad Surface	Check COC
	Geometry and Surface	1 Per Bearing Pad	Bearing Pad Surface	Visual Check & Check Measurement
<b>Workmanship</b>	Elevation	1 per Bearing Pad	Bearing Pad Location	Check Measurement
	Orientation	1 per Bearing Pad	Bearing Pad Location	Check Measurement

**922.72: Acceptance Sampling and Testing Requirements**

For Acceptance samples taken by the Engineer at the project, the sampling rate shall be in accordance with Subsection M9.14.5G. Bearing pads shall be tested by the Department in accordance with Table M9.14.5-1.

**922.73: Lot Acceptance Determination Based on Inspection Results**

The Engineer's Acceptance inspection results will be used in the final Acceptance determination for all Lots. Prior to final Acceptance of each Lot produced and placed, the Engineer will evaluate all Acceptance inspection information for the Lot. The materials and product workmanship for the completed work will be evaluated for conformance with the plans and the requirements specified in Subsections 922.60, 922.61, and 922.62.

When the Acceptance information identifies deficiencies in either material quality or product workmanship, the location will be isolated and further evaluated by the Engineer through additional Acceptance inspection. Depending upon the findings of the additional Acceptance inspection activity, the Engineer will determine the disposition of the nonconforming work in accordance with Division I, Subsection 5.03, Conformity with Plans and Specifications.

**922.74: Lot Acceptance Determination Based on Testing Data**

Prior to final Acceptance of each Lot, the Engineer will evaluate all available QC, independent, and Acceptance testing data for the Lot to determine conformance with the minimum requirements in Subsection M9.14.5G and Table M9.14.5-1.

If a test result does not meet the minimum requirement, the Contractor and Engineer will further assess the quality to determine whether the material can remain in place.

If the Engineer's assessment determines that the material quality is not sufficient to permit the bearing pad to remain in place, the pad shall be removed and replaced. When a nonconforming bearing pad is corrected or replaced, the Engineer will perform Acceptance testing of the replacement bearing pad and evaluate the test results for conformance with the minimum requirements.

**922.75: Final Lot Acceptance Determination**

For each Lot produced and placed, the Engineer will evaluate all Acceptance inspection and testing data for the Lot. The final review and visual inspection shall be conducted jointly by the Contractor and Engineer. Any items that do not meet the requirements of the specifications and plans shall be addressed at this time, at no additional cost to the Department.

After each Lot is complete, including any corrective action, the Engineer will perform a final evaluation of all Acceptance data for the Lot. The Engineer will accept the Lot if the evaluation of all inspection and testing data for the Lot is in conformance with this specification and the contract documents.

When the above requirements have been met, the Engineer will accept all completed bearing pads.

## COMPENSATION

### 922.80: Method of Measurement

Laminated Elastomeric Bearing Pads will be measured by each pad installed. Plain Elastomeric Bearing Pads will be measured by the square foot installed. The measured quantities do not include the additional bearings required for conformance and destructive testing.

### 922.81: Basis of Payment

Payment under this item shall be at the contract unit price. This price will include all materials, equipment, tools and labor, additional bearing pads for testing and all required testing necessary to complete the work.

### 922.82: Payment Items

921.	Laminated Elastomeric Bearing Pad with Anchor Bolts .....	Each
922.	Laminated Elastomeric Bearing Pad without Anchor Bolts .....	Each
923.	Laminated Sliding Elastomeric Bearing Pad with Anchor Bolts .....	Each
933.	Plain Elastomeric Bearing Pad .....	Square Foot

## SECTION 970: DAMP-PROOFING

### Subsection 970.30: General

*Add the following material to this subsection.*

Mortar..... M4.04.0

### Subsection 970.40: General

*Replace the second sentence in the second paragraph with the following.*

All holes in concrete surfaces shall be satisfactorily filled with mortar before damp-proofing is applied.

## SUBSECTION 983: REVETMENT

### Subsection 983.64 Special Slope Paving Under Bridges

*Replace the last sentence under B. Quarry Stone or Precast Concrete Blocks. with the following.*

Mortar shall then be placed in the joints to the top of the paved surface.

### Subsection 983.65 Channel Paving and Grouted Channel Paving

*Replace the last sentence with the following.*

The grout shall conform to M4.04.0: Grout, Mortar, and Concrete Products.

## DIVISION III

### MATERIALS SPECIFICATIONS

#### SECTION M4: CEMENT AND CEMENT CONCRETE MATERIALS

##### Subsection M4.02.00 Cement Concrete

Add the following to the end of this subsection.

##### **Alkali Silica Reactivity - Resistant Portland Cement Concrete**

All cement concrete and precast/prestressed concrete products shall be alkali silica reactivity-resistant. Proportion Portland cement concrete mixes to include materials that meet either the aggregate requirement or Alkali-Silica Reactivity (ASR) mitigation criteria listed below. Provide cement mill test reports from certified laboratories that show the materials' source, composition and the cement alkali content expressed as sodium oxide equivalent(s) not to exceed 1.4%. Certified test reports according to test procedures as specified in Table A will be required to be submitted with the trial batch submission to RMS for approval every year or whenever the source of material is changed.

Select non-reactive aggregates that meet all the criteria of Table M4.02.00-2. Mitigate the mix as described below when nonreactive aggregates are unavailable. If non-reactive aggregates are used for portland cement concrete mix, 15% by weight of the cementitious content shall be fly ash meeting AASHTO M 295, Type F.

Select a material or a combination of materials that meet the criteria shown in Table M4.02.00-3 to mitigate ASR when concrete mixes must be proportioned with reactive aggregates. Perform verification test according to AASHTO T 303 and ASTM C295 to determine the effectiveness of the resulting mix design against ASR. Use the same proportion of cement and pozzolan for each test mixture as that proposed for the actual mix design. Provide the Department with certified documentation of the mixtures' effectiveness to control ASR.

***Table M4.02.00-2: Tests and Criteria for Proposed Aggregates***

Procedure	Description	Limits
AASHTO T 303: Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction	Mean mortar bar expansion at 14 days. Perform a polynomial fit <sup>(1)</sup> of 4, 7, 11, and 14 days to determine reliability of results	0.08% maximum metamorphic aggregate; 0.10% maximum all other aggregates. Repeat AASHTO T 303 if r <sup>2</sup> is less than 0.95.
ASTM C295: Petrographic Examination of Aggregates for Concrete	Optically strained, microfractured, or microcrystalline quartz	5.0% maximum <sup>(2)</sup>
	Chert or chalcedony	3.0% maximum <sup>(2)</sup>
	Tridymite or cristobolite	1.0% maximum <sup>(2)</sup>
	Opal	0.5% maximum <sup>(2)</sup>
	Natural volcanic glass	3.0% maximum <sup>(2)</sup>
<sup>(1)</sup> Use a second order polynomial of %Exp = A <sup>0</sup> + A <sup>1</sup> SQRT(t) + A <sup>2</sup> t. See publication SD92-04-F.		
<sup>(2)</sup> Based on the total aggregate sample.		



**Table M4.02.00-3: Mitigation Methods for ASR in Portland Cement Concrete**

Material	Specification	Cementitious Material Percentage <sup>(1)</sup>
Low alkali cement <sup>(2)</sup>	AASHTO M 85	100%
Fly ash - Class F	AASHTO M 295	15% minimum to 30% <sup>(4)</sup> maximum
Silica Fume <sup>(5)</sup>	AASHTO M 307	6% ± 1% <sup>(6)</sup>
Slag Grade 100 and 120	AASHTO M 302	25% minimum to 50% maximum
<sup>(1)</sup> Measure this minimum content of cementitious material as percent by weight of cement plus pozzolan. <sup>(2)</sup> This single criterion is not effective in all cases in remediating ASR. Low alkali cement (0.60% maximum <sup>(3)</sup> ) must be used in combination with other pozzolanic materials in Table B. <sup>(3)</sup> Na <sub>2</sub> O equivalent = %Na <sub>2</sub> O + 0.658 (%K <sub>2</sub> O) <sup>(4)</sup> Fly ash, Type F, shall replace 15% by weight of the design cement content, and any additional fly ash will be considered as fine aggregate. <sup>(5)</sup> Silica fume shall only be used in silica fume cement concrete. <sup>(6)</sup> The total amount of Type F fly ash and silica fume shall constitute 20% by weight of the design cement content, and any additional fly ash shall be considered as fine aggregate.		

**Subsection M4.02.15 Cement Mortar**

Delete this subsection.

**Subsection M4.04.0: Grout, Mortar and Concrete Products**

Replace this subsection with the following.

**M4.04.0: Grout, Mortar, and Concrete Products**

Grout, cementitious mortar, and concrete products shall be packaged, dry, and preblended with preformulated constituent materials (excluding mixing water) to produce a material with acceptable quality characteristics and material properties, including time of set, compressive strength, flexural strength, slant shear bond strength, resistance to alkali silica reaction, freezing/thawing, and de-icing cycles, shrinkage, expansion, and sulfate reaction.

Mortar products shall be defined as products containing aggregate of which less than 5% by mass of the total mixture is retained on the 3/8 in. sieve. Mortar products for concrete repairs shall be used only on repair depths of 2 in. or less. Concrete products shall be defined as products containing aggregate of which 5% or more by mass of the total mixture is retained on the 3/8 in. sieve. Concrete products for concrete repairs shall be used only on repair depths greater than 2 in.

The aggregate sources included in the prepackaged product or extended into the product shall meet Section M4.02.02: Aggregates. Grout, cementitious mortar, and concrete products shall only be applied per the requirements provided on the product's technical data sheet. Grout, cementitious mortar, and concrete products shall maintain valid listing on the MassDOT Qualified Construction Materials List (QCML). Grout, cementitious mortar, and concrete products shall meet requirements specified herein.

**A. Technical Data Sheet.**

The Manufacturer shall submit the product's technical data sheet to the Department for review. At a minimum, the product's technical data sheets shall include:

- (a) Product Name
- (b) Manufacturer, including address and contact information
- (c) Packaging
- (d) Yield
- (e) Product Description, including an overview of the product and its intended application(s) and use(s).



- (f) Technical Data, including quality characteristics and corresponding performance criteria with the AASHTO and/or ASTM standard test methods identified.
- (g) Recommended Equipment
- (h) Instructions, including surface preparation, mixing, forming, placing, finishing, curing, and protection from adverse conditions, such as precipitation, cold conditions, and hot conditions.
- (i) Limitations
- (j) Storage and Shelf Life
- (k) Safety

**B. Mix Design Formulation.**

Products that are extended with aggregate not included in the original product packaging shall be formulated per the product's technical data sheet and evaluated through Department mix design evaluation and verification testing. Producers shall report and submit proposed mix design formulations onto the Department issued mix design sheet. The Producer shall select an AASHTO accredited independent laboratory to conduct verification testing. The sampling and testing conducted by the independent laboratory shall be witnessed by the Department.

**C. Product Verification Testing.**

Verification test results shall be within the limits specified herein.

**M4.04.1: Conventional Grout, Cementitious Mortar, and Concrete Products**

Conventional grout, cementitious mortar, and concrete products shall meet the requirements of Section M4: Cement and Cement Concrete Materials, performance criteria of the product's technical data sheet, and the requirements specified herein.

**M4.04.2: Rapid Hardening Cementitious Mortar and Concrete Products**

Rapid hardening cementitious mortar and concrete products shall meet the requirements and performance criteria of the product's technical data sheet, ASTM C928 Standard Specification for Packaged, Dry, Rapid-Hardening Cementitious Materials for Concrete Repairs, and Table M4.04.2-2.

***Table M4.04.2-1: Types of Rapid Hardening Cementitious Products for Concrete Repairs***

Type	Description	Application
R1	General Rapid Hardening	Vertical and Overhead Repairs
R2	Medium Rapid Hardening	Vertical and Overhead Repairs
R3	Very Rapid Hardening	Horizontal, Vertical, and Overhead Repairs

**Table M4.04.2-2: Verification Testing Requirements**

Property	Method	Quality Characteristic		Limits					
				R1		R2		R3	
				Min.	Max.	Min.	Max.	Min.	Max.
Setting	T 197	Initial Set (min.)		Technical Data Sheet					
		Final Set (min.)		Technical Data Sheet					
Strength	T 97 <sup>[1]</sup>	Flexural Strength (psi)	24 Hours	–	–	–	–	650	–
			7 Days	–	–	–	–	–	–
Durability	T 358	Surface Chloride Ion Penetration Resistance (kΩ-cm)	28 Days	21	–	21	–	21	–
	T 161 (A)	Relative Durability Factor		90	–	90	–	90	–
Mass Loss (%)		–	6.0	–	6.0	–	6.0		
[1] Not applicable to vertical and overhead repair applications.									

**M4.04.3: Mortar Products for Unit Masonry**

Mortar products for unit masonry shall meet the requirements and performance criteria of the product's technical data sheet and Type M specified in ASTM C270 Standard Specification for Mortar for Unit Masonry. Field proportioned cement mortar for laying brick and block shall be composed of 1 part Portland cement and 2 parts of fine aggregate by volume with a sufficient amount of water to form a workable mixture, while still achieving the properties specified herein.

**M4.04.4: Grout Products for Unit Masonry**

Grout products for unit masonry shall meet the requirements and performance criteria of the product's technical data sheet and ASTM C476 Standard Specification for Grout for Masonry.

**M4.04.5: Non-Shrink Grout Products**

Non-shrink grout products are intended for use under applied load, including supporting a structure, transfer medium between load-bearing members, shear keys, and other non-shrink applications, where a change in height below initial placement height is to be avoided. Non-shrink grout products shall meet the requirements and performance criteria of the product's technical data sheet and ASTM C1107 Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).

**SECTION M5: PIPE, CULVERT SECTIONS AND CONDUIT**Subsection M5.01.0: Joint Material for Pipe

Replace M4.02.15 Cement Mortar with M4.04.0 Grout, Mortar, and Concrete Products in paragraph B.

**SECTION M8: METALS AND RELATED MATERIALS**Subsection M8.18.1: Traffic Signal Supports

Delete the heading Posts and the two paragraphs under it. Delete the heading Bases and the three paragraphs under it.

**SECTION M9: MISCELLANEOUS MATERIALS**Subsection M9.14.5: Elastomeric Bridge Bearing Pads

Replace this subsection with the following:

**M9.14.5: Elastomeric Bearing Pads****A. General Requirements**

Elastomeric bearing pads shall be plain or laminated. They shall meet the applicable requirements of AASHTO M 251, the MassDOT Bridge Manual, and the AASHTO LRFD Bridge Design and Construction Specifications. The type of bearing will be specified on the plans.

Laminated elastomeric bearing pads consist of layers of elastomers restrained at their interfaces by bonded metal laminates.

**B. Material Requirements**

Plain elastomeric bearing pads shall consist of elastomer.

Laminated elastomeric bearing pad shall consist of:

- Elastomer
- Internal Steel Laminates
- Tapered Internal Load Plates (if used)

The components of the elastomeric bearing pad shall conform to AASHTO M 251 and the following:

- The elastomer compound shall be 100% virgin neoprene and classified as being of low-temperature grade 3.
- The steel laminates shall meet the requirements of ASTM A 1011 Grade 36 or higher

**C. Material Qualification**

Elastomeric bearing pads shall be approved on a project basis. The Contractor shall furnish to the Research and Materials Section certified independent test reports demonstrating conformance. All testing shall be performed by the same independent lab in accordance with Subsection M9.14.5G.

**D. Fabricators**

Bearing shall be fabricated by a fabricator listed on the MassDOT Qualified Construction Materials List (QCML).

**E. Fabrication**

Fabrication shall not begin until the shop drawings have been approved and the Department has an inspector at the fabricator's facility.

The shop drawings shall specify bearing dimensions as shown on the plans and, where applicable, shall include:

- Elastomer thickness and edge cover,
- Number and thickness of steel reinforcing laminates,
- Dimensions of load plates (if any),
- Design shear modulus of the elastomer shall be as shown on the Plans.

Plain elastomeric bearing pads shall be fabricated and tested in accordance with the "Method A" design outlined in the AASHTO LRFD Bridge Design Specifications.

Laminated elastomeric bearing pads shall be fabricated and tested in accordance with the "Method B" design outlined in the AASHTO LRFD Bridge Design Specifications.

The manufacturer shall designate the bearings in each Lot, as described in Subsection M9.14.5G, and certify that each bearing in the Lot was manufactured in a reasonably continuous manner from the same batch of elastomer and cured under the same conditions. In addition, the manufacturer shall certify that each bearing in the Lot satisfies the requirements of this specification, AASHTO M 251, the AASHTO LRFD Bridge Construction Specifications, and the contract plans and documents.

The tolerances on the overall dimensions for the bearings shall be according to Table 2 of AASHTO M 251, except that the tolerance on the overall vertical dimension shall be limited to 0, +1/8" regardless of the design thickness.

All steel included in the final bearing product must conform to Buy America Requirements.

#### **F. Packaging, Handling, & Storage**

The bearing pads shall be packaged, handled, and stored as specified below:

Prior to shipment from the point of manufacture, bearings shall be packaged in such a manner to ensure that during shipment and storage the bearings will be protected against damage from handling, weather, or any normal hazard. Each completed bearing shall have its components clearly identified, be securely bolted, strapped, or otherwise fastened to prevent any relative movement, and be marked on it top as to location and orientation in each structure in the project in conformity with the contract documents.

Each elastomeric bearing shall be marked in indelible ink or flexible paint. The marking shall consist of the order number, lot number, bearing identification number, and elastomer type and grade per AASHTO M 251. For bearing pads fabricated with a tapered internal load plate, a 1/32" deep direction arrow shall be inscribed into the bearing which will allow the bearing to be aligned with the up-station direction. All marks shall be permanent and be visible after the bearing is installed.

#### **G. Testing Requirements**

##### **Quality Control System**

Fabricators shall perform Quality Control (QC) testing in accordance with their quality system. QC test reports shall accompany the bearing pads when delivered to the project.

##### **Acceptance System**

MassDOT will evaluate the fabricator's quality system and QC test reports. It will also perform its own testing and verify the independent laboratory's test reports, if applicable.

##### **Lot Sizes**

Sampling of bearing pads for testing shall be random and performed on a Lot basis. A Lot of bearings shall be a group of 100 or fewer bearings that are:

- For a single contract,
- Cured under the same conditions,
- The same size and configuration,
- Manufactured in a reasonably continuous manner from the same batch of elastomer.

##### **Testing of Plain Bearings**

##### **Testing Laboratory**

Plain elastomeric bearing pads shall be tested by both an independent laboratory and MassDOT:

- Independent testing shall be performed by a nationally recognized third-party laboratory approved by the Research & Materials Section.
- Acceptance testing shall be performed by the Research and Materials.

##### **Sampling Frequency**

Each Lot of plain bearings shall be randomly sampled for testing. The Contractor shall ensure that the fabricator produces the additional bearings required for testing.

Samples for independent testing shall be selected by the fabricator. The sampling rate for the independent

testing shall be as follows:

- Lot sizes less than 10 bearings – One full-size bearing per Lot.
- Lot sizes greater than or equal to 10 bearings – Two full-size bearings per lot.

Samples for Acceptance testing shall be selected by the Engineer. The sampling rate for Acceptance testing shall be one bearing pad per lot.

### ***Testing Requirements***

The laboratory shall test the bearings in accordance with Sections 8 and 9 of AASHTO M 251 as specified below:

1. Dimensions per Section 8.4.
2. Elastomer per Section 8.6.
  - The hardness, tensile strength, and ultimate elongation shall be in accordance with Table 1 of AASHTO M 251.
3. Test procedures per Section 8.9.
  - Heat resistance per Section 8.9.3.

### **Testing of Laminated Bearings**

#### ***Testing Laboratory***

Laminated elastomeric bearing pads shall be tested by both an independent laboratory and MassDOT:

- Independent testing shall be performed by a nationally recognized third-party laboratory approved by the Research & Materials Section.
- Acceptance testing shall be performed by the Research and Materials.

#### ***Sampling Frequency***

Each Lot of laminated bearings shall be randomly sampled for testing. The Contractor shall ensure that the fabricator produces the additional bearings required for testing.

Samples for independent testing shall be selected by the fabricator. The sampling rate for the independent testing shall be as follows:

- Lot sizes less than 10 bearings – One full-size bearing per Lot.
- Lots sizes greater than or equal to 10 bearings:
  - One full-size bearing per every twenty per lot, or a minimum of two bearings.
  - The number of laminated bearings to sample shall be determined by taking the Lot size divided by 20. If the integer part of this calculation is 0 or 1, then two bearings shall be sampled. For example, if the lot size is 58 laminated bearings, two bearings shall be sampled; if the lot size is 65, three bearings shall be sampled; and if the lot size is 22, two bearings shall be sampled.

Samples for Acceptance testing shall be selected by the Engineer. The sampling rate for Acceptance testing shall be one bearing pad per lot.

### ***Testing Requirements***

Testing of the bearings shall be in accordance with Sections 8 and 9 of AASHTO M 251 as specified below:

1. Dimensions per Section 8.4.
2. Elastomer per Section 8.6.
  - The hardness, tensile strength, and ultimate elongation shall be in accordance with Table 1 of AASHTO M 251.
3. Compressive strain at the maximum design dead plus live service compressive load per Section 8.8.1.1.

- The compressive deflection, as determined per Section 9.1., between the two loadings for each bearing tested shall not exceed 10%.
- 4. Bond via Compressive Load per Section 8.8.2.2.
- 5. Shear Modulus of the elastomer per Section 8.8.3.
  - Shear modulus shall meet the requirements on the plans.
- 6. Test procedures per Section 8.9.
  - a. Additional Low Temperature Shear Modulus testing per Section 8.9.1.
  - b. Heat resistance per Section 8.9.3.
  - c. Compression set per Section 8.9.4.
  - d. Creep per Section 8.9.5.
    - The percent creep shall be less than 35%.
  - e. Long Term Compression per Section 8.9.6.

**Table M9.14.5-1: Department Acceptance Testing of Elastomeric Bearing Pads**

Quality Characteristic	Test Method	Requirement
Hardness	ASTM D2240	From Independent Test Results $\pm$ 5 Pts
Tensile Strength	ASTM D412	$\geq$ 2250 psi
Ultimate Elongation	ASTM D412	Minimum Elongation Based on Durometer according to AASHTO M 251 Table 1
Shear Modulus (see Note 1)	ASTM D4014	Specified Value $\pm$ 15%
<b>After Heat Aging for 70 Hours at 100°C (Maximum Change from Unaged Testing)</b>		
Hardness	ASTM D573	Hardness + 15 Pts
Tensile Strength	ASTM D573	Tensile Strength - 15%
Ultimate Elongation	ASTM D573	Ultimate Elongation - 40%
Note 1: Test is only required for laminated elastomeric bearing pads.		

## SECTION M10: TRAFFIC CONTROL DEVICES

### Subsection M10.05.0: Traffic Signal Structures (General)

Add this new subsection.

#### **M10.05.0: Traffic Signal Structures (General)**

The bases of all Traffic Signal Structures shall be supplied with a bonding lug.

### Subsection M10.05.1: Signal Posts and Bases

Add this new subsection.

#### **M10.05.1: Signal Posts and Bases**

All Signal Posts shall be one-piece 4-in. diameter, Schedule 40 or Schedule 80, and machine-threaded.

Signal Posts may be fabricated from aluminum with a brushed or spun finish or from steel with a galvanized finish.

The interior of Signal Posts shall be coated as specified in Underwriters Laboratories UL-6 for enameled conduit, or aluminum conduit conforming to M5.07.1: Electrical Conduit-Rigid Metallic (Type RM), Paragraph C.

Signal Posts Bases shall be fabricated to accept the threads from the Signal Post and locked into place with set screws.



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## DOCUMENT 00719

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

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

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## POLICY

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

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

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

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

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

## 1. DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## 2. DBE PARTICIPATION

### a. Goal

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

☒ Design-Bid-Build Projects: DBE Participation Goal 10 %  
(One half of this goal shall be met in the form of Subcontractor construction activity)

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

### b. Bidders List

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

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

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

### **3. CONTRACTOR ASSURANCES**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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- (2) MassDOT will count the entire amount of fees or commissions charged by a DBE firm for providing bona fide services, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a U.S. DOT assisted Contract, toward DBE participation goals, provided it is determined that the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.
  - (3) When a DBE performs as a participant in a joint venture, MassDOT will count toward DBE participation goals a portion of the total dollar value of the contract that is equal to the distinct, clearly defined portion of the work of the Contract that the DBE performs with its own forces.
  - (4) MassDOT will use the following factors in determining whether a DBE trucking company is performing a commercially useful function:
    - (i) the DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract; there cannot be a contrived arrangement for the purpose of meeting DBE participation goals.
    - (ii) the DBE must itself own and operate at least one fully licensed, insured, and operational truck used on the Contract.
    - (iii) the Contractor will receive DBE credit for the total value of the transportation services the DBE provides on the Contract using trucks owned, insured, and operated by the DBE itself and using drivers the DBE employs alone.
    - (iv) the DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The Contractor who has a contract with a DBE who leases trucks from another DBE will receive credit for the total value of the transportation services of the lease.
    - (v) the DBE may also lease trucks from a non-DBE firm, including an owner-operator. The Contractor who has a Contract with a DBE who leases trucks from a non-DBE is entitled to credit for the total value of the transportation services provided by non-DBE lessees not to exceed the value of transportation services provided by DBE-owned trucks on the Contract. Additional participation by non-DBE lessees receives credit only for the fee or commission it receives as a result of the lease arrangement, fee or commission it receives as a result of the lease arrangement. The DBE does not receive credit for the total value of the transportation services provided by the lessee, since these services are not provided by a DBE.
    - (vi) the lease must indicate that the DBE has exclusive use of, and control over, the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.
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- (5) MassDOT will count the Prime Contractor's expenditures with DBEs for materials or supplies toward DBE participation goals as follows:
- (i) if the materials or supplies are obtained from a DBE manufacturer, as defined in Section 1 above, MassDOT will count one hundred (100%) percent of the cost of the materials or supplies toward DBE participation goals, provided the DBE meets the other requirements of the regulations.
  - (ii) if the materials or supplies are purchased from a DBE regular dealer, as defined in Section 1 above, MassDOT will count sixty (60%) percent of the cost of the materials or supplies toward the Contract participation goal, provided the DBE meets the other requirements of the regulations.
  - (iii) for materials or supplies purchased from a DBE which is neither a manufacturer nor a regular dealer, MassDOT will count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site toward the Contract participation goal, provided that MassDOT determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services; the cost of the materials and supplies themselves will not be counted; and provided the DBE meets the other requirements of the regulations.

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

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

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

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

Other factors MassDOT may consider:

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

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

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

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

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## 7. AWARD DOCUMENTATION AND PROCEDURES

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

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

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

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

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

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

## 8. COMPLIANCE

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

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

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

**n. Prompt Payment.**

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

**9. SANCTIONS**

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

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

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

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



- (1) If you are a firm that does not meet the eligibility criteria of 49 CFR, Parts 26.61 to 26.73 (“subpart D”), that attempts to participate in a DOT- assisted program as a DBE on the basis of false, fraudulent, or deceitful statements or representations or under circumstances indicating a serious lack of business integrity or honesty, MassDOT or FHWA may initiate suspension or debarment proceedings against you under 49 CFR Part 29.
  - (2) If you are a firm that, in order to meet DBE Contract participation goals or other DBE Program requirements, uses or attempts to use, on the basis of false, fraudulent or deceitful statements or representations or under circumstances indicating a serious lack of business integrity or honesty, another firm that does not meet the eligibility criteria of subpart D, FHWA may initiate suspension or debarment proceedings against you under 49 CFR Part 29.
  - (3) In a suspension or debarment proceeding brought either under subparagraph a.(1) or b.(2) of this section, the concerned operating administration may consider the fact that a purported DBE has been certified by a recipient. Such certification does not preclude FHWA from determining that the purported DBE, or another firm that has used or attempted to use it to meet DBE participation goals, should be suspended or debarred.
  - (4) FHWA may take enforcement action under 49 CFR Part 31, Program Fraud and Civil Remedies, against any participant in the DBE Program whose conduct is subject to such action under 49 CFR Part 31.
  - (5) FHWA may refer to the Department of Justice, for prosecution under 18 U.S.C. 1001 or other applicable provisions of law, any person who makes a false or fraudulent statement in connection with participation of a DBE in any DOT-assisted program or otherwise violates applicable Federal statutes.
- b. Pursuant to 49 CFR Part 26.109, the rules governing information, confidentiality, cooperation, and intimidation or retaliation are as follows:
  - (1) Availability of records.
    - (i) In responding to requests for information concerning any aspect of the DBE Program, FHWA complies with provisions of the Federal Freedom of Information and Privacy Acts (5 U.S.C. 552 and 552a). FHWA may make available to the public any information concerning the DBE Program release of which is not prohibited by Federal law.
    - (ii) MassDOT shall safeguard from disclosure to unauthorized persons information that may reasonably be considered as confidential business information, consistent with Federal and Massachusetts General Law (M.G.L. c. 66, § 10, M.G.L. c. 4, §7 (26), 950 CMR 32.00).
  - (2) Confidentiality of information on complainants. Notwithstanding the provisions of subparagraph b.(1) of this section, the identity of complainants shall be kept confidential, at their election. If such confidentiality will hinder the investigation, proceeding or hearing, or result in a denial of appropriate administrative due process to other parties, the complainant must be advised for the purpose of waiving the privilege. Complainants are advised that, in some circumstances, failure to waive the privilege may result in the closure of the investigation or dismissal of the proceeding or hearing.

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

## 11. LIST OF ADDITIONAL DOCUMENTS.

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

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

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

## **ATTACHMENTS**

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

## **I. GENERAL**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### 6. Training and Promotion:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### 10. Assurances Required:

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

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

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

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

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

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



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

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

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

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

### III. NONSEGREGATED FACILITIES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## 2. Withholding (29 CFR 5.5)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

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

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

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

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

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

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

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

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

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

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

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

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

## VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

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

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

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

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

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

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

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

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

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

## VII. SAFETY: ACCIDENT PREVENTION

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

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

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

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

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

## VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

this transaction originated may pursue available remedies, including suspension and/or debarment.

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

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

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

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

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

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

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

\*\*\*\*\*

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

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

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

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

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

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

\*\*\*\*\*

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



## DOCUMENT 00811

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

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

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

**Base Price**

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

**Period Price**

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

**Price Adjustment Determination, Calculation and Payment**

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

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

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

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

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

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

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## DOCUMENT 00812

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

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

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

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

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

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

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

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

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

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

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## DOCUMENT 00813

## SPECIAL PROVISIONS

## PRICE ADJUSTMENTS FOR STRUCTURAL STEEL AND REINFORCING STEEL

March 19, 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	\$0.55
2	ASTM A27 (AASHTO M103) Steel Castings, H-Pile Points & Pipe Pile Shoes (See Note below.)	\$0.77
3	ASTM A668 / A668M (AASHTO M102) Steel Forgings	\$0.77
4	ASTM A108 (AASHTO M169) Steel Forgings for Shear Studs	\$0.79
5	ASTM A709/A709M Grade 36 / AASHTO M270M/M270 Grade 36 or 250 Structural Steel Plate	\$0.83
6	ASTM A709/A709M Grade 36 / AASHTO M270M/M270 Grade 36 or 250 Structural Steel Shapes	\$0.78
7	ASTM A709/A709M Grade 50 / AASHTO M270M/M270 Grade 50 or 345 Structural Steel Plate	\$0.83
8	ASTM A709/A709M Grade 50 / AASHTO M270M/M270 Grade 50 or 345 Structural Steel Shapes	\$0.78
9	ASTM A709/A709M Grade 50WT / AASHTO M270M/M270 Grade 50WT or 345WT Structural Steel Plate	\$0.86
10	ASTM A709/A709M Grade 50WT / AASHTO M270M/M270 Grade 50WT or 345WT Structural Steel Shapes	\$0.79
11	ASTM A709/A709M Grade 50W / AASHTO M270M/M270 Grade 50W 345W Structural Steel Plate	\$0.86
12	ASTM A709/A709M Grade 50W / AASHTO M270M/M270 Grade 50W or 345W Structural Steel Shapes	\$0.79
13	ASTM A709/A709M Grade HPS 50W / AASHTO M270M/M270 Grade HPS 50W or 345W Structural Steel Plate	\$0.90
14	ASTM A709/A709M Grade HPS 70W / AASHTO M270M/M270 Grade HPS 70W or 485W Structural Steel Plate	\$0.97
15	ASTM A514/A514M-05 Grade HPS 100W / AASHTO M270M/M270 Grade HPS 100W or 690W Structural Steel Plate	\$1.48
16	ASTM A992/A992M Grade 50S / AASHTO M270M/M270 Grade 50S or 345S Structural Steel Plate	\$0.86
17	ASTM A992/A992M Grade 50S / AASHTO M270M/M270 Grade 50S or 345S Structural Steel Shapes	\$0.79
18	ASTM A276 Type 316 Stainless Steel	\$4.44
19	ASTM A240 Type 316 Stainless Steel	\$4.44
20	ASTM A148 Grade 80/50 Steel Castings (See Note below.)	\$1.52
21	ASTM A53 Grade B Structural Steel Pipe	\$0.97
22	ASTM A500 Grades A, B, 36 & 50 Structural Steel Pipe	\$0.97
23	ASTM A252, Grades 240 (36 KSI) & 414 (60 KSI) Pipe Pile	\$0.77
24	ASTM 252, Grade 2 Permanent Steel Casing	\$0.77
25	ASTM A36 (AASHTO M183) for H-piles, steel supports and sign supports	\$0.81
26	ASTM A328 / A328M, Grade 50 (AASHTO M202) Steel Sheetpiling	\$1.46
27	ASTM A572 / A572M, Grade 50 Sheetpiling	\$1.46
28	ASTM A36/36M, Grade 50	\$0.83
29	ASTM A570, Grade 50	\$0.81
30	ASTM A572 (AASHTO M223), Grade 50 H-Piles	\$0.83
31	ASTM A1085 Grade A (50 KSI) Steel Hollow Structural Sections (HSS), heat-treated per ASTM A1085 Supplement S1	\$0.97
32	AREA 140 LB Rail and Track Accessories	\$0.50

**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.

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## 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](http://www.ebotraining.com). Click the "Register My Company" button on the login page to begin your training registration. Questions regarding EBO online training should be directed to Gerry Anguilano, IGS at (440) 238-1684.

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

**Vetting of Firms and Designated Firm Individuals**

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

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

**Interim Reporting Requirements**

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

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

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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: 129788 Project No. 613202 Federal Aid No.: HIP(BR)-0035(062)XLocation: BARNSTABLEProject Description: Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)

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

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

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

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

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

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

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

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

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

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

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

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

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

## **PART 2**

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

1. This company recognizes that if this is a Federal-Aid Project, then this Contract is covered by the equal employment opportunity laws administered and enforced by the United States Department of Labor ("USDOL"), Office of Federal Contract Compliance Programs ("OFCCP"). By signing below, we acknowledge that this company has certain reporting obligations to the OFCCP, as specified by 41 CFR Part 60-4.2.
2. This company further acknowledges that any contractor with fifty (50) or more employees on a Federal-aid Contract with a value of fifty-thousand (\$50,000) dollars or more must annually file an EEO-1 Report (SF 100) to the EEOC, Joint Reporting Committee, on or before September 30th, each year, as specified by 41 CFR Part 60-1.7a.
3. For more information regarding the federal reporting requirements, please contact the USDOL, OFCCP Regional Office, at 1-646-264-3170 or EEO-1, Joint Reporting Committee at 1-866-286-6440. You may also find guidance at: <http://www.dol.gov/ofccp/TAGuides/consttag.pdf> or <http://www.wdol.gov/dba.aspx#0>.
4. This company ☐ has, ☐ has not, participated in a previous contract or subcontract subject to the Equal Opportunity clauses set forth in 41 CFR Part 60-4 and Executive Order 11246, and where required, has filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance Programs or the EEO Commission all reports due under the applicable filing requirements.
5. This company is in full compliance with applicable Federal and Commonwealth of Massachusetts laws, rules, and regulations and is not currently debarred or disqualified from bidding on or participating in construction contracts in any jurisdiction of the United States. See : <https://www.mass.gov/service-details/contractors-and-vendors-suspended-or-debarred-by-massdot>
6. This company is properly registered and in good standing with the Office of the Secretary of the Commonwealth.

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

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

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

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

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

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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MAURA HEALEY  
Governor

KIM DRISCOLL  
Lt. Governor

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

**Prevailing Wage Rates**

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

LAUREN JONES  
Secretary

MICHAEL FLANAGAN  
Director

**Awarding Authority:** MassDOT Highway  
**Contract Number:** 129788 **City/Town:** BARNSTABLE  
**Description of Work:** BARNSTABLE – FAP No. HIP(BR)-0035(062)X Bridge Preservation, B-01-012(4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)  
**Job Location:** Oak Street over Route 6 (Mid-Cape Highway)

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**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.

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Construction</b>						
(2 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$39.95	\$15.57	\$20.17	\$0.00	\$75.69
	06/01/2025	\$40.95	\$15.57	\$20.17	\$0.00	\$76.69
	12/01/2025	\$40.95	\$15.57	\$21.78	\$0.00	\$78.30
	01/01/2026	\$40.95	\$16.17	\$21.78	\$0.00	\$78.90
	06/01/2026	\$41.95	\$16.17	\$21.78	\$0.00	\$79.90
	12/01/2026	\$41.95	\$16.17	\$23.52	\$0.00	\$81.64
	01/01/2027	\$41.95	\$16.77	\$23.52	\$0.00	\$82.24
(3 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.02	\$15.57	\$20.17	\$0.00	\$75.76
	06/01/2025	\$41.02	\$15.57	\$20.17	\$0.00	\$76.76
	12/01/2025	\$41.02	\$15.57	\$21.78	\$0.00	\$78.37
	01/01/2026	\$41.02	\$16.17	\$21.78	\$0.00	\$78.97
	06/01/2026	\$42.02	\$16.17	\$21.78	\$0.00	\$79.97
	12/01/2026	\$42.02	\$16.17	\$23.52	\$0.00	\$81.71
	01/01/2027	\$42.02	\$16.77	\$23.52	\$0.00	\$82.31
(4 & 5 AXLE) DRIVER - EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.14	\$15.57	\$20.17	\$0.00	\$75.88
	06/01/2025	\$41.14	\$15.57	\$20.17	\$0.00	\$76.88
	12/01/2025	\$41.14	\$15.57	\$21.78	\$0.00	\$78.49
	01/01/2026	\$41.14	\$16.17	\$21.78	\$0.00	\$79.09
	06/01/2026	\$42.14	\$16.17	\$21.78	\$0.00	\$80.09
	12/01/2026	\$42.14	\$16.17	\$23.52	\$0.00	\$81.83
	01/01/2027	\$42.14	\$16.77	\$23.52	\$0.00	\$82.43
ADS/SUBMERSIBLE PILOT <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"						
AIR TRACK OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
AIR TRACK OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASBESTOS WORKER (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (SOUTHERN MASS)</i>	12/01/2024	\$42.80	\$14.50	\$11.05	\$0.00	\$68.35
	06/01/2025	\$43.80	\$14.50	\$11.05	\$0.00	\$69.35
	12/01/2025	\$44.80	\$14.50	\$11.05	\$0.00	\$70.35

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
ASPHALT RAKER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
ASPHALT RAKER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
ASPHALT/CONCRETE/CRUSHER PLANT-ON SITE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BACKHOE/FRONT-END LOADER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
BARCO-TYPE JUMPING TAMPER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
BLOCK PAVER, RAMMER / CURB SETTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
BLOCK PAVER, RAMMER / CURB SETTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
BOILER MAKER <i>BOILERMAKERS LOCAL 29</i>	01/01/2024	\$48.12	\$7.07	\$20.60	\$0.00	\$75.79

**Apprentice - BOILERMAKER - Local 29****Effective Date - 01/01/2024**

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

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

BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING) <i>BRICKLAYERS LOCAL 3 (NEW BEDFORD)</i>	02/01/2025	\$65.80	\$11.49	\$23.59	\$0.00	\$100.88
	08/01/2025	\$67.95	\$11.49	\$23.59	\$0.00	\$103.03
	02/01/2026	\$69.30	\$11.49	\$23.59	\$0.00	\$104.38
	08/01/2026	\$71.50	\$11.49	\$23.59	\$0.00	\$106.58
	02/01/2027	\$72.90	\$11.49	\$23.59	\$0.00	\$107.98

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 New Bedford****Effective Date - 02/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.90	\$11.49	\$23.59	\$0.00	\$67.98
2	60	\$39.48	\$11.49	\$23.59	\$0.00	\$74.56
3	70	\$46.06	\$11.49	\$23.59	\$0.00	\$81.14
4	80	\$52.64	\$11.49	\$23.59	\$0.00	\$87.72
5	90	\$59.22	\$11.49	\$23.59	\$0.00	\$94.30

**Effective Date - 08/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$33.98	\$11.49	\$23.59	\$0.00	\$69.06
2	60	\$40.77	\$11.49	\$23.59	\$0.00	\$75.85
3	70	\$47.57	\$11.49	\$23.59	\$0.00	\$82.65
4	80	\$54.36	\$11.49	\$23.59	\$0.00	\$89.44
5	90	\$61.16	\$11.49	\$23.59	\$0.00	\$96.24

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

BULLDOZER/GRADER/SCRAPER	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
OPERATING ENGINEERS LOCAL 4	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
CAISSON & UNDERPINNING BOTTOM MAN	12/01/2024	\$47.35	\$9.90	\$19.05	\$0.00	\$76.30
LABORERS - FOUNDATION AND MARINE	06/01/2025	\$48.85	\$9.90	\$19.05	\$0.00	\$77.80
	12/01/2025	\$50.35	\$9.90	\$19.05	\$0.00	\$79.30
	06/01/2026	\$51.90	\$9.90	\$19.05	\$0.00	\$80.85
	12/01/2026	\$53.40	\$9.90	\$19.05	\$0.00	\$82.35
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING LABORER	12/01/2024	\$46.20	\$9.90	\$19.05	\$0.00	\$75.15
LABORERS - FOUNDATION AND MARINE	06/01/2025	\$47.70	\$9.90	\$19.05	\$0.00	\$76.65
	12/01/2025	\$49.20	\$9.90	\$19.05	\$0.00	\$78.15
	06/01/2026	\$50.75	\$9.90	\$19.05	\$0.00	\$79.70
	12/01/2026	\$52.25	\$9.90	\$19.05	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
CAISSON & UNDERPINNING TOP MAN	12/01/2024	\$46.53	\$9.90	\$19.05	\$0.00	\$75.48
LABORERS - FOUNDATION AND MARINE	06/01/2025	\$48.03	\$9.90	\$19.05	\$0.00	\$76.98
	12/01/2025	\$49.53	\$9.90	\$19.05	\$0.00	\$78.48
	06/01/2026	\$51.08	\$9.90	\$19.05	\$0.00	\$80.03
	12/01/2026	\$52.58	\$9.90	\$19.05	\$0.00	\$81.53
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
CARBIDE CORE DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						

CARPENTER <i>CARPENTERS -ZONE 2 (Eastern Massachusetts)</i>	03/01/2025	\$49.62	\$9.83	\$19.97	\$0.00	\$79.42
	09/01/2025	\$50.87	\$9.83	\$19.97	\$0.00	\$80.67
	03/01/2026	\$52.12	\$9.83	\$19.97	\$0.00	\$81.92
	09/01/2026	\$53.37	\$9.83	\$19.97	\$0.00	\$83.17
	03/01/2027	\$54.62	\$9.83	\$19.97	\$0.00	\$84.42

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

**Effective Date - 03/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
2	45	\$22.33	\$9.83	\$1.73	\$0.00	\$33.89
3	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
4	55	\$27.29	\$9.83	\$3.40	\$0.00	\$40.52
5	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
6	70	\$34.73	\$9.83	\$16.51	\$0.00	\$61.07
7	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77
8	80	\$39.70	\$9.83	\$18.24	\$0.00	\$67.77

**Effective Date - 09/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	45	\$22.89	\$9.83	\$1.73	\$0.00	\$34.45
2	45	\$22.89	\$9.83	\$1.73	\$0.00	\$34.45
3	55	\$27.98	\$9.83	\$3.40	\$0.00	\$41.21
4	55	\$27.98	\$9.83	\$3.40	\$0.00	\$41.21
5	70	\$35.61	\$9.83	\$16.51	\$0.00	\$61.95
6	70	\$35.61	\$9.83	\$16.51	\$0.00	\$61.95
7	80	\$40.70	\$9.83	\$18.24	\$0.00	\$68.77
8	80	\$40.70	\$9.83	\$18.24	\$0.00	\$68.77

**Notes:**

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

CARPENTER WOOD FRAME <i>CARPENTERS-ZONE 3 (Wood Frame)</i>	10/01/2024	\$26.65	\$7.02	\$4.80	\$0.00	\$38.47
	10/01/2025	\$27.75	\$7.02	\$4.80	\$0.00	\$39.57
	10/01/2026	\$28.85	\$7.02	\$4.80	\$0.00	\$40.67

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
All Aspects of New Wood Frame Work						
<b>Apprentice - CARPENTER (Wood Frame) - Zone 3</b>						
<b>Effective Date - 10/01/2024</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
2	60	\$15.99	\$7.02	\$0.00	\$0.00	\$23.01
3	65	\$17.32	\$7.02	\$1.00	\$0.00	\$25.34
4	70	\$18.66	\$7.02	\$1.00	\$0.00	\$26.68
5	75	\$19.99	\$7.02	\$4.80	\$0.00	\$31.81
6	80	\$21.32	\$7.02	\$4.80	\$0.00	\$33.14
7	85	\$22.65	\$7.02	\$4.80	\$0.00	\$34.47
8	90	\$23.99	\$7.02	\$4.80	\$0.00	\$35.81
<b>Effective Date - 10/01/2025</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$16.65	\$7.02	\$0.00	\$0.00	\$23.67
2	60	\$16.65	\$7.02	\$0.00	\$0.00	\$23.67
3	65	\$18.04	\$7.02	\$1.00	\$0.00	\$26.06
4	70	\$19.43	\$7.02	\$1.00	\$0.00	\$27.45
5	75	\$20.81	\$7.02	\$4.80	\$0.00	\$32.63
6	80	\$22.20	\$7.02	\$4.80	\$0.00	\$34.02
7	85	\$23.59	\$7.02	\$4.80	\$0.00	\$35.41
8	90	\$24.98	\$7.02	\$4.80	\$0.00	\$36.80
<b>Notes:</b>						
<b>Apprentice to Journeyworker Ratio:1:5</b>						
CEMENT MASONRY/PLASTERING BRICKLAYERS LOCAL 3 (NEW BEDFORD)	07/01/2024	\$49.19	\$13.35	\$24.21	\$1.80	\$88.55

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - CEMENT MASONRY/PLASTERING - Eastern Mass (New Bedford)****Effective Date - 07/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.60	\$13.35	\$16.43	\$0.00	\$54.38
2	60	\$29.51	\$13.35	\$19.21	\$1.80	\$63.87
3	65	\$31.97	\$13.35	\$20.21	\$1.80	\$67.33
4	70	\$34.43	\$13.35	\$21.21	\$1.80	\$70.79
5	75	\$36.89	\$13.35	\$22.21	\$1.80	\$74.25
6	80	\$39.35	\$13.35	\$23.21	\$1.80	\$77.71
7	90	\$44.27	\$13.35	\$24.21	\$1.80	\$83.63

**Notes:**

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

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

CHAIN SAW OPERATOR LABORERS - ZONE 2	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES OPERATING ENGINEERS LOCAL 4	12/01/2024	\$58.18	\$15.55	\$16.50	\$0.00	\$90.23
	06/01/2025	\$59.51	\$15.55	\$16.50	\$0.00	\$91.56
	12/01/2025	\$60.98	\$15.55	\$16.50	\$0.00	\$93.03
	06/01/2026	\$62.31	\$15.55	\$16.50	\$0.00	\$94.36
	12/01/2026	\$63.79	\$15.55	\$16.50	\$0.00	\$95.84
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
COMPRESSOR OPERATOR OPERATING ENGINEERS LOCAL 4	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DELEADER (BRIDGE) PAINTERS LOCAL 35 - ZONE 2	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - PAINTER Local 35 - BRIDGES/TANKS</b>						
<b>Effective Date - 01/01/2025</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30
<div> <b>Notes:</b>  Steps are 750 hrs. </div>						
<b>Apprentice to Journeyworker Ratio:1:1</b>						
<hr/>						
DEMO: ADZEMAN	12/02/2024	\$46.25	\$9.90	\$18.90	\$0.00	\$75.05
LABORERS - ZONE 2	06/02/2025	\$47.75	\$9.90	\$18.90	\$0.00	\$76.55
	12/01/2025	\$49.25	\$9.90	\$18.90	\$0.00	\$78.05
	06/01/2026	\$50.80	\$9.90	\$18.90	\$0.00	\$79.60
	12/07/2026	\$52.30	\$9.90	\$18.90	\$0.00	\$81.10
	06/07/2027	\$53.90	\$9.90	\$18.90	\$0.00	\$82.70
	12/06/2027	\$55.50	\$9.90	\$18.90	\$0.00	\$84.30
	06/05/2028	\$57.18	\$9.90	\$18.90	\$0.00	\$85.98
	12/04/2028	\$58.85	\$9.90	\$18.90	\$0.00	\$87.65
For apprentice rates see "Apprentice- LABORER"						
<hr/>						
DEMO: BACKHOE/LOADER/HAMMER OPERATOR	12/02/2024	\$47.25	\$9.90	\$18.90	\$0.00	\$76.05
LABORERS - ZONE 2	06/02/2025	\$48.75	\$9.90	\$18.90	\$0.00	\$77.55
	12/01/2025	\$50.25	\$9.90	\$18.90	\$0.00	\$79.05
	06/01/2026	\$51.80	\$9.90	\$18.90	\$0.00	\$80.60
	12/07/2026	\$53.30	\$9.90	\$18.90	\$0.00	\$82.10
	06/07/2027	\$54.90	\$9.90	\$18.90	\$0.00	\$83.70
	12/06/2027	\$56.50	\$9.90	\$18.90	\$0.00	\$85.30
	06/05/2028	\$58.18	\$9.90	\$18.90	\$0.00	\$86.98
	12/04/2028	\$59.85	\$9.90	\$18.90	\$0.00	\$88.65
For apprentice rates see "Apprentice- LABORER"						
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DEMO: BURNERS	12/02/2024	\$47.00	\$9.90	\$18.90	\$0.00	\$75.80
LABORERS - ZONE 2	06/02/2025	\$48.50	\$9.90	\$18.90	\$0.00	\$77.30
	12/01/2025	\$50.00	\$9.90	\$18.90	\$0.00	\$78.80
	06/01/2026	\$51.55	\$9.90	\$18.90	\$0.00	\$80.35
	12/07/2026	\$53.05	\$9.90	\$18.90	\$0.00	\$81.85
	06/07/2027	\$54.65	\$9.90	\$18.90	\$0.00	\$83.45
	12/06/2027	\$56.25	\$9.90	\$18.90	\$0.00	\$85.05
	06/05/2028	\$57.93	\$9.90	\$18.90	\$0.00	\$86.73
	12/04/2028	\$59.60	\$9.90	\$18.90	\$0.00	\$88.40

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- LABORER"						
DEMO: CONCRETE CUTTER/SAWYER <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.25	\$9.90	\$18.90	\$0.00	\$76.05
	06/02/2025	\$48.75	\$9.90	\$18.90	\$0.00	\$77.55
	12/01/2025	\$50.25	\$9.90	\$18.90	\$0.00	\$79.05
	06/01/2026	\$51.80	\$9.90	\$18.90	\$0.00	\$80.60
	12/07/2026	\$53.30	\$9.90	\$18.90	\$0.00	\$82.10
	06/07/2027	\$54.90	\$9.90	\$18.90	\$0.00	\$83.70
	12/06/2027	\$56.50	\$9.90	\$18.90	\$0.00	\$85.30
	06/05/2028	\$58.18	\$9.90	\$18.90	\$0.00	\$86.98
	12/04/2028	\$59.85	\$9.90	\$18.90	\$0.00	\$88.65
For apprentice rates see "Apprentice- LABORER"						
DEMO: JACKHAMMER OPERATOR <i>LABORERS - ZONE 2</i>	12/02/2024	\$47.00	\$9.90	\$18.90	\$0.00	\$75.80
	06/02/2025	\$48.50	\$9.90	\$18.90	\$0.00	\$77.30
	12/01/2025	\$50.00	\$9.90	\$18.90	\$0.00	\$78.80
	06/01/2026	\$51.55	\$9.90	\$18.90	\$0.00	\$80.35
	12/07/2026	\$53.05	\$9.90	\$18.90	\$0.00	\$81.85
	06/07/2027	\$54.65	\$9.90	\$18.90	\$0.00	\$83.45
	12/06/2027	\$56.25	\$9.90	\$18.90	\$0.00	\$85.05
	06/05/2028	\$57.93	\$9.90	\$18.90	\$0.00	\$86.73
	12/04/2028	\$59.60	\$9.90	\$18.90	\$0.00	\$88.40
For apprentice rates see "Apprentice- LABORER"						
DEMO: WRECKING LABORER <i>LABORERS - ZONE 2</i>	12/02/2024	\$46.25	\$9.90	\$18.90	\$0.00	\$75.05
	06/02/2025	\$47.75	\$9.90	\$18.90	\$0.00	\$76.55
	12/01/2025	\$49.25	\$9.90	\$18.90	\$0.00	\$78.05
	06/01/2026	\$50.80	\$9.90	\$18.90	\$0.00	\$79.60
	12/07/2026	\$52.30	\$9.90	\$18.90	\$0.00	\$81.10
	06/07/2027	\$53.90	\$9.90	\$18.90	\$0.00	\$82.70
	12/06/2027	\$55.50	\$9.90	\$18.90	\$0.00	\$84.30
	06/05/2028	\$57.18	\$9.90	\$18.90	\$0.00	\$85.98
	12/04/2028	\$58.85	\$9.90	\$18.90	\$0.00	\$87.65
For apprentice rates see "Apprentice- LABORER"						
DIRECTIONAL DRILL MACHINE OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
DIVER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$78.11	\$10.08	\$24.29	\$0.00	\$112.48
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Diver wage 70/80/90 2A \$69.83, 3A \$91.79,4A \$102.14 Total Rate						
DIVER TENDER <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34
as of 8-1-24, Apprentices with diving licenses begin at second year. % of Piledriver wage 70/80/90 2A \$54.20, 3A \$73.93,4A \$82.05 Total Rate						
DIVER TENDER (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$83.69	\$10.08	\$24.29	\$0.00	\$118.06
For apprentice rates see "Apprentice- PILE DRIVER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
DIVER/SLURRY (EFFLUENT) <i>PILE DRIVER LOCAL 56 (ZONE 2)</i>	08/01/2024	\$117.16	\$10.08	\$24.29	\$0.00	\$151.53
For apprentice rates see "Apprentice- PILE DRIVER"						
DRAWBRIDGE OPERATOR (Construction) <i>DRAWBRIDGE - SEIU LOCAL 888</i>	07/01/2020	\$26.77	\$6.67	\$3.93	\$0.16	\$37.53
ELECTRICIAN <i>ELECTRICIANS LOCAL 223</i>	09/01/2024	\$50.02	\$12.00	\$17.72	\$0.00	\$79.74
	09/01/2025	\$52.25	\$12.25	\$18.61	\$0.00	\$83.11
	09/01/2026	\$54.72	\$12.50	\$19.56	\$0.00	\$86.78

**Apprentice -** *ELECTRICIAN - Local 223*

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.01	\$12.00	\$0.60	\$0.00	\$32.61
2	45	\$22.51	\$12.00	\$0.68	\$0.00	\$35.19
3	50	\$25.01	\$12.00	\$0.75	\$0.00	\$37.76
4	55	\$27.51	\$12.00	\$8.59	\$0.00	\$48.10
5	60	\$30.01	\$12.00	\$9.15	\$0.00	\$51.16
6	65	\$32.51	\$12.00	\$9.74	\$0.00	\$54.25
7	70	\$35.01	\$12.00	\$10.30	\$0.00	\$57.31
8	75	\$37.52	\$12.00	\$10.89	\$0.00	\$60.41

**Effective Date -** 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$20.90	\$12.25	\$0.63	\$0.00	\$33.78
2	45	\$23.51	\$12.25	\$0.71	\$0.00	\$36.47
3	50	\$26.13	\$12.25	\$0.78	\$0.00	\$39.16
4	55	\$28.74	\$12.25	\$9.11	\$0.00	\$50.10
5	60	\$31.35	\$12.25	\$9.71	\$0.00	\$53.31
6	65	\$33.96	\$12.25	\$10.32	\$0.00	\$56.53
7	70	\$36.58	\$12.25	\$10.91	\$0.00	\$59.74
8	75	\$39.19	\$12.25	\$11.52	\$0.00	\$62.96

**Notes:**

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

ELEVATOR CONSTRUCTOR <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$65.62	\$16.03	\$20.21	\$0.00	\$101.86
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - ELEVATOR CONSTRUCTOR - Local 4****Effective Date - 01/01/2022**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.81	\$16.03	\$0.00	\$0.00	\$48.84
2	55	\$36.09	\$16.03	\$20.21	\$0.00	\$72.33
3	65	\$42.65	\$16.03	\$20.21	\$0.00	\$78.89
4	70	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
5	80	\$52.50	\$16.03	\$20.21	\$0.00	\$88.74

**Notes:**

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

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

ELEVATOR CONSTRUCTOR HELPER <i>ELEVATOR CONSTRUCTORS LOCAL 4</i>	01/01/2022	\$45.93	\$16.03	\$20.21	\$0.00	\$82.17
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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

FENCE & GUARD RAIL ERECTOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21

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

FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$51.78	\$15.30	\$16.40	\$0.00	\$83.48
	05/01/2025	\$53.22	\$15.30	\$16.40	\$0.00	\$84.92
	11/01/2025	\$54.51	\$15.30	\$16.40	\$0.00	\$86.21
	05/01/2026	\$55.95	\$15.30	\$16.40	\$0.00	\$87.65
	11/01/2026	\$57.24	\$15.30	\$16.40	\$0.00	\$88.94
	05/01/2027	\$58.67	\$15.30	\$16.40	\$0.00	\$90.37

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$53.37	\$15.30	\$16.40	\$0.00	\$85.07
	05/01/2025	\$54.82	\$15.30	\$16.40	\$0.00	\$86.52
	11/01/2025	\$56.12	\$15.30	\$16.40	\$0.00	\$87.82
	05/01/2026	\$57.57	\$15.30	\$16.40	\$0.00	\$89.27
	11/01/2026	\$58.87	\$15.30	\$16.40	\$0.00	\$90.57
	05/01/2027	\$60.32	\$15.30	\$16.40	\$0.00	\$92.02

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY <i>OPERATING ENGINEERS LOCAL 4</i>	11/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
	05/01/2025	\$26.22	\$15.30	\$16.40	\$0.00	\$57.92
	11/01/2025	\$26.98	\$15.30	\$16.40	\$0.00	\$58.68
	05/01/2026	\$27.83	\$15.30	\$16.40	\$0.00	\$59.53
	11/01/2026	\$28.59	\$15.30	\$16.40	\$0.00	\$60.29
	05/01/2027	\$29.44	\$15.30	\$16.40	\$0.00	\$61.14

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

FIRE ALARM INSTALLER <i>ELECTRICIANS LOCAL 223</i>	09/01/2024	\$50.02	\$12.00	\$17.72	\$0.00	\$79.74
	09/01/2025	\$52.25	\$12.25	\$18.61	\$0.00	\$83.11
	09/01/2026	\$54.72	\$12.50	\$19.56	\$0.00	\$86.78

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
For apprentice rates see "Apprentice- ELECTRICIAN"						
FIRE ALARM REPAIR / MAINTENANCE / COMMISSIONING <i>ELECTRICIANS</i>	09/01/2024	\$50.02	\$12.00	\$17.72	\$0.00	\$79.74
<i>LOCAL 223</i>	09/01/2025	\$52.25	\$12.25	\$18.61	\$0.00	\$83.11
	09/01/2026	\$54.72	\$12.50	\$19.56	\$0.00	\$86.78
For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"						
FIREMAN (ASST. ENGINEER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$45.96	\$15.55	\$16.50	\$0.00	\$78.01
	06/01/2025	\$47.02	\$15.55	\$16.50	\$0.00	\$79.07
	12/01/2025	\$48.19	\$15.55	\$16.50	\$0.00	\$80.24
	06/01/2026	\$49.25	\$15.55	\$16.50	\$0.00	\$81.30
	12/01/2026	\$50.43	\$15.55	\$16.50	\$0.00	\$82.48
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
FLAGGER & SIGNALER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$27.01	\$9.90	\$18.46	\$0.00	\$55.37
	06/01/2025	\$28.09	\$9.90	\$18.46	\$0.00	\$56.45
	12/01/2025	\$28.09	\$9.90	\$18.46	\$0.00	\$56.45
	06/01/2026	\$29.21	\$9.90	\$18.46	\$0.00	\$57.57
	12/01/2026	\$29.21	\$9.90	\$18.46	\$0.00	\$57.57
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
FLOORCOVERER <i>FLOORCOVERERS LOCAL 2168 ZONE II</i>	03/01/2024	\$49.47	\$8.83	\$20.27	\$0.00	\$78.57

**Apprentice - FLOORCOVERER - Local 2168 Zone II**

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

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.74	\$8.83	\$1.76	\$0.00	\$35.33
2	55	\$27.21	\$8.83	\$1.76	\$0.00	\$37.80
3	60	\$29.68	\$8.83	\$3.52	\$0.00	\$42.03
4	65	\$32.16	\$8.83	\$3.52	\$0.00	\$44.51
5	70	\$34.63	\$8.83	\$16.75	\$0.00	\$60.21
6	75	\$37.10	\$8.83	\$16.75	\$0.00	\$62.68
7	80	\$39.58	\$8.83	\$18.51	\$0.00	\$66.92
8	85	\$42.05	\$8.83	\$18.51	\$0.00	\$69.39

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

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

FORK LIFT/CHERRY PICKER <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
GENERATOR/LIGHTING PLANT/HEATERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS) <i>GLAZIERS LOCAL 1333</i>	06/01/2020	\$39.18	\$10.80	\$10.45	\$0.00	\$60.43

**Apprentice - GLAZIER - Local 1333****Effective Date - 06/01/2020**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$19.59	\$10.80	\$1.80	\$0.00	\$32.19
2	56	\$22.04	\$10.80	\$1.80	\$0.00	\$34.64
3	63	\$24.49	\$10.80	\$2.45	\$0.00	\$37.74
4	69	\$26.94	\$10.80	\$2.45	\$0.00	\$40.19
5	75	\$29.39	\$10.80	\$3.15	\$0.00	\$43.34
6	81	\$31.83	\$10.80	\$3.15	\$0.00	\$45.78
7	88	\$34.28	\$10.80	\$10.45	\$0.00	\$55.53
8	94	\$36.73	\$10.80	\$10.45	\$0.00	\$57.98

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

HOISTING ENGINEER/CRANES/GRADALLS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58

## Classification

Effective Date

Base Wage

Health

Pension

Supplemental  
Unemployment

Total Rate

**Apprentice - OPERATING ENGINEERS - Local 4****Effective Date - 12/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$31.37	\$0.00	\$0.00	\$0.00	\$31.37
2	60	\$34.22	\$15.55	\$16.50	\$0.00	\$66.27
3	65	\$37.07	\$15.55	\$16.50	\$0.00	\$69.12
4	70	\$39.92	\$15.55	\$16.50	\$0.00	\$71.97
5	75	\$42.77	\$15.55	\$16.50	\$0.00	\$74.82
6	80	\$45.62	\$15.55	\$16.50	\$0.00	\$77.67
7	85	\$48.48	\$15.55	\$16.50	\$0.00	\$80.53
8	90	\$51.33	\$15.55	\$16.50	\$0.00	\$83.38

**Effective Date - 06/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$32.08	\$0.00	\$0.00	\$0.00	\$32.08
2	60	\$35.00	\$15.55	\$16.50	\$0.00	\$67.05
3	65	\$37.91	\$15.55	\$16.50	\$0.00	\$69.96
4	70	\$40.83	\$15.55	\$16.50	\$0.00	\$72.88
5	75	\$43.75	\$15.55	\$16.50	\$0.00	\$75.80
6	80	\$46.66	\$15.55	\$16.50	\$0.00	\$78.71
7	85	\$49.58	\$15.55	\$16.50	\$0.00	\$81.63
8	90	\$52.50	\$15.55	\$16.50	\$0.00	\$84.55

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

HVAC (DUCTWORK) <i>SHEETMETAL WORKERS LOCAL 17 - B</i>	10/01/2024	\$42.33	\$14.59	\$19.04	\$2.24	\$78.20
	04/01/2025	\$43.83	\$14.59	\$19.04	\$2.24	\$79.70
	10/01/2025	\$45.08	\$14.59	\$19.04	\$2.24	\$80.95
	04/01/2026	\$46.58	\$14.59	\$19.04	\$2.24	\$82.45
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (ELECTRICAL CONTROLS) <i>ELECTRICIANS LOCAL 223</i>	09/01/2024	\$50.02	\$12.00	\$17.72	\$0.00	\$79.74
	09/01/2025	\$52.25	\$12.25	\$18.61	\$0.00	\$83.11
	09/01/2026	\$54.72	\$12.50	\$19.56	\$0.00	\$86.78
For apprentice rates see "Apprentice- ELECTRICIAN"						
HVAC (TESTING AND BALANCING - AIR) <i>SHEETMETAL WORKERS LOCAL 17 - B</i>	10/01/2024	\$42.33	\$30.43	\$19.04	\$2.24	\$94.04
	04/01/2025	\$43.83	\$30.43	\$19.04	\$2.24	\$95.54
	10/01/2025	\$45.08	\$30.43	\$19.04	\$2.24	\$96.79
	04/01/2026	\$46.58	\$30.43	\$19.04	\$2.24	\$98.29
For apprentice rates see "Apprentice- SHEET METAL WORKER"						
HVAC (TESTING AND BALANCING - WATER) <i>PLUMBERS &amp; PIPEFITTERS LOCAL 51</i>	08/26/2024	\$52.49	\$10.80	\$21.40	\$0.00	\$84.69
	08/25/2025	\$55.24	\$10.80	\$21.40	\$0.00	\$87.44
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
HVAC MECHANIC <i>PLUMBERS &amp; PIPEFITTERS LOCAL 51</i>	08/26/2024	\$52.49	\$10.80	\$21.40	\$0.00	\$84.69
	08/25/2025	\$55.24	\$10.80	\$21.40	\$0.00	\$87.44
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
HYDRAULIC DRILLS <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.70	\$9.90	\$18.36	\$0.00	\$67.96
	06/01/2025	\$41.09	\$9.90	\$18.36	\$0.00	\$69.35
	12/01/2025	\$42.47	\$9.90	\$18.36	\$0.00	\$70.73
	06/01/2026	\$43.91	\$9.90	\$18.36	\$0.00	\$72.17
	12/01/2026	\$45.35	\$9.90	\$18.36	\$0.00	\$73.61
	06/01/2027	\$46.80	\$9.90	\$18.36	\$0.00	\$75.06
	12/01/2027	\$48.25	\$9.90	\$18.36	\$0.00	\$76.51
	06/01/2028	\$49.75	\$9.90	\$18.36	\$0.00	\$78.01
	12/01/2028	\$51.25	\$9.90	\$18.36	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
HYDRAULIC DRILLS (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.70	\$9.90	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.09	\$9.90	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.47	\$9.90	\$18.46	\$0.00	\$70.83
	06/01/2026	\$43.91	\$9.90	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.35	\$9.90	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
INSULATOR (PIPES & TANKS) <i>HEAT &amp; FROST INSULATORS LOCAL 6 (SOUTHERN MASS)</i>	09/01/2024	\$51.23	\$14.75	\$19.61	\$0.00	\$85.59
	09/01/2025	\$54.31	\$14.75	\$19.61	\$0.00	\$88.67
	09/01/2026	\$57.38	\$14.75	\$19.61	\$0.00	\$91.74

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

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

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

**Effective Date -** 09/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$27.16	\$14.75	\$14.32	\$0.00	\$56.23
2	60	\$32.59	\$14.75	\$15.37	\$0.00	\$62.71
3	70	\$38.02	\$14.75	\$16.43	\$0.00	\$69.20
4	80	\$43.45	\$14.75	\$17.49	\$0.00	\$75.69

**Notes:**

Steps are 1 year

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

IRONWORKER/WELDER <i>IRONWORKERS LOCAL 37</i>	03/16/2021	\$42.46	\$7.70	\$17.10	\$0.00	\$67.26
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## Classification

Effective Date

Base Wage

Health

Pension

Supplemental  
Unemployment

Total Rate

**Apprentice - IRONWORKER - Local 37****Effective Date - 03/16/2021**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	70	\$29.72	\$7.70	\$17.10	\$0.00	\$54.52
2	75	\$31.85	\$7.70	\$17.10	\$0.00	\$56.65
3	80	\$33.97	\$7.70	\$17.10	\$0.00	\$58.77
4	85	\$36.09	\$7.70	\$17.10	\$0.00	\$60.89
5	90	\$38.21	\$7.70	\$17.10	\$0.00	\$63.01
6	95	\$40.34	\$7.70	\$17.10	\$0.00	\$65.14

Notes:

**Apprentice to Journeyworker Ratio:1:4****JACKHAMMER & PAVING BREAKER OPERATOR**

LABORERS - ZONE 2

12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

**LABORER**

LABORERS - ZONE 2

12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76

## Classification

Effective Date

Base Wage

Health

Pension

Supplemental  
Unemployment

Total Rate

**Apprentice - LABORER - Zone 2****Effective Date - 12/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.37	\$9.90	\$18.36	\$0.00	\$51.63
2	70	\$27.27	\$9.90	\$18.36	\$0.00	\$55.53
3	80	\$31.16	\$9.90	\$18.36	\$0.00	\$59.42
4	90	\$35.06	\$9.90	\$18.36	\$0.00	\$63.32

**Effective Date - 06/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.20	\$9.90	\$18.36	\$0.00	\$52.46
2	70	\$28.24	\$9.90	\$18.36	\$0.00	\$56.50
3	80	\$32.27	\$9.90	\$18.36	\$0.00	\$60.53
4	90	\$36.31	\$9.90	\$18.36	\$0.00	\$64.57

**Notes:****Apprentice to Journeyworker Ratio:1:5**LABORER (HEAVY & HIGHWAY)  
LABORERS - ZONE 2 (HEAVY & HIGHWAY)

12/01/2024	\$38.95	\$9.90	\$18.46	\$0.00	\$67.31
06/01/2025	\$40.34	\$9.90	\$18.46	\$0.00	\$68.70
12/01/2025	\$41.72	\$9.90	\$18.46	\$0.00	\$70.08
06/01/2026	\$43.16	\$9.90	\$18.46	\$0.00	\$71.52
12/01/2026	\$44.60	\$9.90	\$18.46	\$0.00	\$72.96

**Apprentice - LABORER (Heavy & Highway) - Zone 2****Effective Date - 12/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$23.37	\$9.90	\$18.46	\$0.00	\$51.73
2	70	\$27.27	\$9.90	\$18.46	\$0.00	\$55.63
3	80	\$31.16	\$9.90	\$18.46	\$0.00	\$59.52
4	90	\$35.06	\$9.90	\$18.46	\$0.00	\$63.42

**Effective Date - 06/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	60	\$24.20	\$9.90	\$18.46	\$0.00	\$52.56
2	70	\$28.24	\$9.90	\$18.46	\$0.00	\$56.60
3	80	\$32.27	\$9.90	\$18.46	\$0.00	\$60.63
4	90	\$36.31	\$9.90	\$18.46	\$0.00	\$64.67

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: CARPENTER TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: CEMENT FINISHER TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER <i>LABORERS - ZONE 2</i>	12/02/2024	\$39.04	\$9.90	\$18.42	\$0.00	\$67.36
	06/02/2025	\$40.43	\$9.90	\$18.42	\$0.00	\$68.75
	12/01/2025	\$41.81	\$9.90	\$18.42	\$0.00	\$70.13
	06/01/2026	\$43.25	\$9.90	\$18.42	\$0.00	\$71.57
	12/07/2026	\$44.69	\$9.90	\$18.42	\$0.00	\$73.01
	06/07/2027	\$46.14	\$9.90	\$18.42	\$0.00	\$74.46
	12/06/2027	\$47.59	\$9.90	\$18.42	\$0.00	\$75.91
	06/05/2028	\$49.09	\$9.90	\$18.42	\$0.00	\$77.41
	12/04/2028	\$50.59	\$9.90	\$18.42	\$0.00	\$78.91
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LABORER: MASON TENDER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
LABORER: MULTI-TRADE TENDER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$0.00	\$78.76
For apprentice rates see "Apprentice- LABORER"						
LABORER: TREE REMOVER <i>LABORERS - ZONE 2</i>	12/01/2024	\$38.95	\$9.90	\$18.36	\$0.00	\$67.21
	06/01/2025	\$40.34	\$9.90	\$18.36	\$0.00	\$68.60
	12/01/2025	\$41.72	\$9.90	\$18.36	\$0.00	\$69.98
	06/01/2026	\$43.16	\$9.90	\$18.36	\$0.00	\$71.42
	12/01/2026	\$44.60	\$9.90	\$18.36	\$0.00	\$72.86
	06/01/2027	\$46.05	\$9.90	\$18.36	\$0.00	\$74.31
	12/01/2027	\$47.50	\$9.90	\$18.36	\$0.00	\$75.76
	06/01/2028	\$49.00	\$9.90	\$18.36	\$0.00	\$77.26
	12/01/2028	\$50.50	\$9.90	\$18.36	\$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 <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
LASER BEAM OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
MARBLE & TILE FINISHERS <i>BRICKLAYERS LOCAL 3 - MARBLE &amp; TILE</i>	02/01/2025	\$50.36	\$11.49	\$21.62	\$0.00	\$83.47
	08/01/2025	\$52.08	\$11.49	\$21.62	\$0.00	\$85.19
	02/01/2026	\$53.16	\$11.49	\$21.62	\$0.00	\$86.27
	08/01/2026	\$54.92	\$11.49	\$21.62	\$0.00	\$88.03
	02/01/2027	\$56.04	\$11.49	\$21.62	\$0.00	\$89.15

## Classification

Effective Date

Base Wage

Health

Pension

Supplemental  
Unemployment

Total Rate

**Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile****Effective Date -** 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$25.18	\$11.49	\$21.62	\$0.00	\$58.29
2	60	\$30.22	\$11.49	\$21.62	\$0.00	\$63.33
3	70	\$35.25	\$11.49	\$21.62	\$0.00	\$68.36
4	80	\$40.29	\$11.49	\$21.62	\$0.00	\$73.40
5	90	\$45.32	\$11.49	\$21.62	\$0.00	\$78.43

**Effective Date -** 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.04	\$11.49	\$21.62	\$0.00	\$59.15
2	60	\$31.25	\$11.49	\$21.62	\$0.00	\$64.36
3	70	\$36.46	\$11.49	\$21.62	\$0.00	\$69.57
4	80	\$41.66	\$11.49	\$21.62	\$0.00	\$74.77
5	90	\$46.87	\$11.49	\$21.62	\$0.00	\$79.98

**Notes:****Apprentice to Journeyworker Ratio:1:3**MARBLE MASONS, TILELAYERS & TERRAZZO MECH  
BRICKLAYERS LOCAL 3 - MARBLE & TILE

02/01/2025	\$65.82	\$11.49	\$23.56	\$0.00	\$100.87
08/01/2025	\$67.97	\$11.49	\$23.56	\$0.00	\$103.02
02/01/2026	\$69.32	\$11.49	\$23.56	\$0.00	\$104.37
08/01/2026	\$71.52	\$11.49	\$23.56	\$0.00	\$106.57
02/01/2027	\$72.92	\$11.49	\$23.56	\$0.00	\$107.97

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - MARBLE-TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile**

**Effective Date -** 02/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.91	\$11.49	\$23.56	\$0.00	\$67.96
2	60	\$39.49	\$11.49	\$23.56	\$0.00	\$74.54
3	70	\$46.07	\$11.49	\$23.56	\$0.00	\$81.12
4	80	\$52.66	\$11.49	\$23.56	\$0.00	\$87.71
5	90	\$59.24	\$11.49	\$23.56	\$0.00	\$94.29

**Effective Date -** 08/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$33.99	\$11.49	\$23.56	\$0.00	\$69.04
2	60	\$40.78	\$11.49	\$23.56	\$0.00	\$75.83
3	70	\$47.58	\$11.49	\$23.56	\$0.00	\$82.63
4	80	\$54.38	\$11.49	\$23.56	\$0.00	\$89.43
5	90	\$61.17	\$11.49	\$23.56	\$0.00	\$96.22

**Notes:**

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

MECH. SWEEPER OPERATOR (ON CONST. SITES)	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
OPERATING ENGINEERS LOCAL 4	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MECHANICS MAINTENANCE	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
OPERATING ENGINEERS LOCAL 4	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
MILLWRIGHT (Zone 2)	01/06/2025	\$45.09	\$10.08	\$21.47	\$0.00	\$76.64
MILLWRIGHTS LOCAL 1121 - Zone 2	01/05/2026	\$47.42	\$10.08	\$21.47	\$0.00	\$78.97

## Classification

Effective Date

Base Wage

Health

Pension

Supplemental  
Unemployment

Total Rate

**Apprentice - MILLWRIGHT - Local 1121 Zone 2****Effective Date - 01/06/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$24.80	\$10.08	\$5.50	\$0.00	\$40.38
2	65	\$29.31	\$10.08	\$6.50	\$0.00	\$45.89
3	75	\$33.82	\$10.08	\$18.97	\$0.00	\$62.87
4	85	\$38.33	\$10.08	\$19.97	\$0.00	\$68.38

**Effective Date - 01/05/2026**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	55	\$26.08	\$10.08	\$5.50	\$0.00	\$41.66
2	65	\$30.82	\$10.08	\$6.50	\$0.00	\$47.40
3	75	\$35.57	\$10.08	\$18.97	\$0.00	\$64.62
4	85	\$40.31	\$10.08	\$19.97	\$0.00	\$70.36

**Notes:** Step 1&2 Appr. indentured after 1/6/2020 receive no pension,  
but do receive annuity. (Step 1 \$5.72, Step 2 \$6.66)  
Steps are 2,000 hours

**Apprentice to Journeyworker Ratio:1:4****MORTAR MIXER***LABORERS - ZONE 2*

12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01

For apprentice rates see "Apprentice- LABORER"

**OILER (OTHER THAN TRUCK CRANES,GRADALLS)***OPERATING ENGINEERS LOCAL 4*

12/01/2024	\$25.37	\$15.30	\$16.40	\$0.00	\$57.07
06/01/2025	\$25.97	\$15.30	\$16.40	\$0.00	\$57.67
12/01/2025	\$26.63	\$15.30	\$16.40	\$0.00	\$58.33
06/01/2026	\$27.22	\$15.30	\$16.40	\$0.00	\$58.92
12/01/2026	\$27.89	\$15.30	\$16.40	\$0.00	\$59.59

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**OILER (TRUCK CRANES, GRADALLS)***OPERATING ENGINEERS LOCAL 4*

12/01/2024	\$31.08	\$15.30	\$16.40	\$0.00	\$62.78
06/01/2025	\$31.80	\$15.30	\$16.40	\$0.00	\$63.50
12/01/2025	\$32.60	\$15.30	\$16.40	\$0.00	\$64.30
06/01/2026	\$33.32	\$15.30	\$16.40	\$0.00	\$65.02
12/01/2026	\$34.12	\$15.30	\$16.40	\$0.00	\$65.82

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
OTHER POWER DRIVEN EQUIPMENT - CLASS II <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PAINTER (BRIDGES/TANKS) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$58.46	\$9.95	\$23.95	\$0.00	\$92.36

**Apprentice - PAINTER Local 35 - BRIDGES/TANKS****Effective Date -** 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$29.23	\$9.95	\$0.00	\$0.00	\$39.18
2	55	\$32.15	\$9.95	\$6.66	\$0.00	\$48.76
3	60	\$35.08	\$9.95	\$7.26	\$0.00	\$52.29
4	65	\$38.00	\$9.95	\$7.87	\$0.00	\$55.82
5	70	\$40.92	\$9.95	\$20.32	\$0.00	\$71.19
6	75	\$43.85	\$9.95	\$20.93	\$0.00	\$74.73
7	80	\$46.77	\$9.95	\$21.53	\$0.00	\$78.25
8	90	\$52.61	\$9.95	\$22.74	\$0.00	\$85.30

**Notes:**

Steps are 750 hrs.

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

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2025	\$49.36	\$9.95	\$23.95	\$0.00	\$83.26
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\* If 30% or more of surfaces to be painted are new construction,

NEW paint rate shall be used.*PAINTERS LOCAL 35 - ZONE 2***Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New****Effective Date -** 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$24.68	\$9.95	\$0.00	\$0.00	\$34.63
2	55	\$27.15	\$9.95	\$6.66	\$0.00	\$43.76
3	60	\$29.62	\$9.95	\$7.26	\$0.00	\$46.83
4	65	\$32.08	\$9.95	\$7.87	\$0.00	\$49.90
5	70	\$34.55	\$9.95	\$20.32	\$0.00	\$64.82
6	75	\$37.02	\$9.95	\$20.93	\$0.00	\$67.90
7	80	\$39.49	\$9.95	\$21.53	\$0.00	\$70.97
8	90	\$44.42	\$9.95	\$22.74	\$0.00	\$77.11

**Notes:**

Steps are 750 hrs.

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



Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
PAINTER (SPRAY OR SANDBLAST, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$47.42	\$9.95	\$23.95	\$0.00	\$81.32

**Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint****Effective Date -** 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.71	\$9.95	\$0.00	\$0.00	\$33.66
2	55	\$26.08	\$9.95	\$6.66	\$0.00	\$42.69
3	60	\$28.45	\$9.95	\$7.26	\$0.00	\$45.66
4	65	\$30.82	\$9.95	\$7.87	\$0.00	\$48.64
5	70	\$33.19	\$9.95	\$20.32	\$0.00	\$63.46
6	75	\$35.57	\$9.95	\$20.93	\$0.00	\$66.45
7	80	\$37.94	\$9.95	\$21.53	\$0.00	\$69.42
8	90	\$42.68	\$9.95	\$22.74	\$0.00	\$75.37

**Notes:**

Steps are 750 hrs.

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

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

**Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW****Effective Date -** 01/01/2025

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.98	\$9.95	\$0.00	\$0.00	\$33.93
2	55	\$26.38	\$9.95	\$6.66	\$0.00	\$42.99
3	60	\$28.78	\$9.95	\$7.26	\$0.00	\$45.99
4	65	\$31.17	\$9.95	\$7.87	\$0.00	\$48.99
5	70	\$33.57	\$9.95	\$20.32	\$0.00	\$63.84
6	75	\$35.97	\$9.95	\$20.93	\$0.00	\$66.85
7	80	\$38.37	\$9.95	\$21.53	\$0.00	\$69.85
8	90	\$43.16	\$9.95	\$22.74	\$0.00	\$75.85

**Notes:**

Steps are 750 hrs.

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

PAINTER / TAPER (BRUSH, REPAINT) <i>PAINTERS LOCAL 35 - ZONE 2</i>	01/01/2025	\$46.02	\$9.95	\$23.95	\$0.00	\$79.92
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Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
<b>Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT</b>						
<b>Effective Date - 01/01/2025</b>						
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$23.01	\$9.95	\$0.00	\$0.00	\$32.96
2	55	\$25.31	\$9.95	\$6.66	\$0.00	\$41.92
3	60	\$27.61	\$9.95	\$7.26	\$0.00	\$44.82
4	65	\$29.91	\$9.95	\$7.87	\$0.00	\$47.73
5	70	\$32.21	\$9.95	\$20.32	\$0.00	\$62.48
6	75	\$34.52	\$9.95	\$20.93	\$0.00	\$65.40
7	80	\$36.82	\$9.95	\$21.53	\$0.00	\$68.30
8	90	\$41.42	\$9.95	\$22.74	\$0.00	\$74.11
<b>Notes:</b> Steps are 750 hrs.						
<b>Apprentice to Journeyworker Ratio:1:1</b>						
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PAINTER TRAFFIC MARKINGS (HEAVY/HIGHWAY)	12/01/2024	\$38.95	\$9.90	\$18.46	\$0.00	\$67.31
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2025	\$40.34	\$9.90	\$18.46	\$0.00	\$68.70
	12/01/2025	\$41.72	\$9.90	\$18.46	\$0.00	\$70.08
	06/01/2026	\$43.16	\$9.90	\$18.46	\$0.00	\$71.52
	12/01/2026	\$44.60	\$9.90	\$18.46	\$0.00	\$72.96
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)						
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PANEL & PICKUP TRUCKS DRIVER	01/01/2025	\$39.78	\$15.57	\$20.17	\$0.00	\$75.52
TEAMSTERS JOINT COUNCIL NO. 10 ZONE B	06/01/2025	\$40.78	\$15.57	\$20.17	\$0.00	\$76.52
	12/01/2025	\$40.78	\$15.57	\$21.78	\$0.00	\$78.13
	01/01/2026	\$40.78	\$16.17	\$21.78	\$0.00	\$78.73
	06/01/2026	\$41.78	\$16.17	\$21.78	\$0.00	\$79.73
	12/01/2026	\$41.78	\$16.17	\$23.52	\$0.00	\$81.47
	01/01/2027	\$41.78	\$16.77	\$23.52	\$0.00	\$82.07
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PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34
PILE DRIVER LOCAL 56 (ZONE 2)						
For apprentice rates see "Apprentice- PILE DRIVER"						
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PILE DRIVER	08/01/2024	\$51.97	\$10.08	\$24.29	\$0.00	\$86.34
PILE DRIVER LOCAL 56 (ZONE 2)						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate	
<b>Apprentice -   PILE DRIVER - Local 56 Zone 2</b>							
<b>Effective Date -   08/01/2024</b>							
Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate	
1	45	\$23.39	\$10.08	\$2.53	\$0.00	\$36.00	
2	55	\$28.58	\$10.08	\$5.07	\$0.00	\$43.73	
3	70	\$36.38	\$10.08	\$19.22	\$0.00	\$65.68	
4	80	\$41.58	\$10.08	\$21.76	\$0.00	\$73.42	
<div><b>Notes:</b> % Indentured BEFORE 8/1/2020, 50/60/70/75/80/80/90/90 Step 1 \$60.36/2 \$65.75/3 \$70.75/4 \$73.35/5&amp;6 \$75.95/7&amp;8 81.14</div>							
<b>Apprentice to Journeyworker Ratio:1:5</b>							
PIPELAYER							
LABORERS - ZONE 2		12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
		06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
		12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
		06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
		12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
		06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
		12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
		06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
		12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"							
PIPELAYER (HEAVY & HIGHWAY)							
LABORERS - ZONE 2 (HEAVY & HIGHWAY)		12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
		06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
		12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
		06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
		12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"							
PLUMBER & PIPEFITTER							
PLUMBERS & PIPEFITTERS LOCAL 51		08/26/2024	\$52.49	\$10.80	\$21.40	\$0.00	\$84.69
		08/25/2025	\$55.24	\$10.80	\$21.40	\$0.00	\$87.44

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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**Apprentice - PLUMBER/PIPEFITTER - Local 51****Effective Date - 08/26/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$21.00	\$10.15	\$2.50	\$0.00	\$33.65
2	50	\$26.25	\$10.15	\$2.50	\$0.00	\$38.90
3	60	\$31.49	\$10.15	\$8.90	\$0.00	\$50.54
4	70	\$36.74	\$10.15	\$14.24	\$0.00	\$61.13
5	80	\$41.99	\$10.15	\$17.80	\$0.00	\$69.94

**Effective Date - 08/25/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$22.10	\$10.15	\$2.50	\$0.00	\$34.75
2	50	\$27.62	\$10.15	\$2.50	\$0.00	\$40.27
3	60	\$33.14	\$10.15	\$8.90	\$0.00	\$52.19
4	70	\$38.67	\$10.15	\$14.24	\$0.00	\$63.06
5	80	\$44.19	\$10.15	\$17.80	\$0.00	\$72.14

**Notes:**

Steps 2000hrs. Prior 9/1/05; 40/40/45/50/55/60/65/75/80/85

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

PNEUMATIC CONTROLS (TEMP.)	08/26/2024	\$52.49	\$10.80	\$21.40	\$0.00	\$84.69
PLUMBERS & PIPEFITTERS LOCAL 51	08/25/2025	\$55.24	\$10.80	\$21.40	\$0.00	\$87.44
For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"						
PNEUMATIC DRILL/TOOL OPERATOR	12/01/2024	\$39.70	\$9.90	\$17.54	\$0.00	\$67.14
LABORERS - ZONE 2	06/01/2025	\$41.09	\$9.90	\$17.54	\$0.00	\$68.53
	12/01/2025	\$42.47	\$9.90	\$17.54	\$0.00	\$69.91
	06/01/2026	\$43.91	\$9.90	\$17.54	\$0.00	\$71.35
	12/01/2026	\$45.35	\$9.90	\$17.54	\$0.00	\$72.79
	06/01/2027	\$46.80	\$9.90	\$17.54	\$0.00	\$74.24
	12/01/2027	\$48.25	\$9.90	\$17.54	\$0.00	\$75.69
	06/01/2028	\$49.75	\$9.90	\$17.54	\$0.00	\$77.19
	12/01/2028	\$51.25	\$9.90	\$17.54	\$0.00	\$78.69
For apprentice rates see "Apprentice- LABORER"						
PNEUMATIC DRILL/TOOL OPERATOR (HEAVY & HIGHWAY)	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
LABORERS - ZONE 2 (HEAVY & HIGHWAY)	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
POWDERMAN & BLASTER <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.95	\$9.90	\$18.36	\$0.00	\$68.21
	06/01/2025	\$41.34	\$9.90	\$18.36	\$0.00	\$69.60
	12/01/2025	\$42.72	\$9.90	\$18.36	\$0.00	\$70.98
	06/01/2026	\$44.16	\$9.90	\$18.36	\$0.00	\$72.42
	12/01/2026	\$45.60	\$9.90	\$18.36	\$0.00	\$73.86
	06/01/2027	\$47.05	\$9.90	\$18.36	\$0.00	\$75.31
	12/01/2027	\$48.50	\$9.90	\$18.36	\$0.00	\$76.76
	06/01/2028	\$50.00	\$9.90	\$18.36	\$0.00	\$78.26
	12/01/2028	\$51.50	\$9.90	\$18.36	\$0.00	\$79.76
For apprentice rates see "Apprentice- LABORER"						
POWDERMAN & BLASTER (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.95	\$9.65	\$18.46	\$0.00	\$68.06
	06/01/2025	\$41.34	\$9.65	\$18.46	\$0.00	\$69.45
	12/01/2025	\$42.72	\$9.65	\$18.46	\$0.00	\$70.83
	06/01/2026	\$44.16	\$9.65	\$18.46	\$0.00	\$72.27
	12/01/2026	\$45.60	\$9.65	\$18.46	\$0.00	\$73.71
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
POWER SHOVEL/DERRICK/TRENCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (CONCRETE) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
PUMP OPERATOR (DEWATERING, OTHER) <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$36.67	\$15.55	\$16.50	\$0.00	\$68.72
	06/01/2025	\$37.52	\$15.55	\$16.50	\$0.00	\$69.57
	12/01/2025	\$38.47	\$15.55	\$16.50	\$0.00	\$70.52
	06/01/2026	\$39.33	\$15.55	\$16.50	\$0.00	\$71.38
	12/01/2026	\$40.28	\$15.55	\$16.50	\$0.00	\$72.33
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
READY-MIX CONCRETE DRIVER <i>TEAMSTERS 653 - Southeastern Concrete (Weymouth)</i>	08/01/2023	\$25.00	\$13.91	\$6.90	\$0.00	\$45.81
RECLAIMERS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
RIDE-ON MOTORIZED BUGGY OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$39.20	\$9.90	\$18.36	\$0.00	\$67.46
	06/01/2025	\$40.59	\$9.90	\$18.36	\$0.00	\$68.85
	12/01/2025	\$41.97	\$9.90	\$18.36	\$0.00	\$70.23
	06/01/2026	\$43.41	\$9.90	\$18.36	\$0.00	\$71.67
	12/01/2026	\$44.85	\$9.90	\$18.36	\$0.00	\$73.11
	06/01/2027	\$46.30	\$9.90	\$18.36	\$0.00	\$74.56
	12/01/2027	\$47.75	\$9.90	\$18.36	\$0.00	\$76.01
	06/01/2028	\$49.25	\$9.90	\$18.36	\$0.00	\$77.51
	12/01/2028	\$50.75	\$9.90	\$18.36	\$0.00	\$79.01
For apprentice rates see "Apprentice- LABORER"						
ROLLER/SPREADER/MULCHING MACHINE <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
ROOFER (Inc.Roofing Waterproofing &Roofing Damproofg) <i>ROOFERS LOCAL 33</i>	02/01/2025	\$52.03	\$13.28	\$21.70	\$0.00	\$87.01
	08/01/2025	\$53.53	\$13.28	\$21.70	\$0.00	\$88.51
	02/01/2026	\$54.78	\$13.28	\$21.70	\$0.00	\$89.76

**Apprentice - ROOFER - Local 33****Effective Date - 02/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.02	\$13.28	\$15.55	\$0.00	\$54.85
2	60	\$31.22	\$13.28	\$21.70	\$0.00	\$66.20
3	65	\$33.82	\$13.28	\$21.70	\$0.00	\$68.80
4	75	\$39.02	\$13.28	\$21.70	\$0.00	\$74.00
5	85	\$44.23	\$13.28	\$21.70	\$0.00	\$79.21

**Effective Date - 08/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$26.77	\$13.28	\$15.55	\$0.00	\$55.60
2	60	\$32.12	\$13.28	\$21.70	\$0.00	\$67.10
3	65	\$34.79	\$13.28	\$21.70	\$0.00	\$69.77
4	75	\$40.15	\$13.28	\$21.70	\$0.00	\$75.13
5	85	\$45.50	\$13.28	\$21.70	\$0.00	\$80.48

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

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

ROOFER SLATE / TILE / PRECAST CONCRETE <i>ROOFERS LOCAL 33</i>	02/01/2025	\$52.28	\$13.28	\$21.70	\$0.00	\$87.26
	08/01/2025	\$53.78	\$13.28	\$21.70	\$0.00	\$88.76
	02/01/2026	\$55.03	\$13.28	\$21.70	\$0.00	\$90.01
For apprentice rates see "Apprentice- ROOFER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SHEETMETAL WORKER	10/01/2024	\$42.33	\$14.59	\$19.04	\$2.24	\$78.20
<i>SHEETMETAL WORKERS LOCAL 17 - B</i>	04/01/2025	\$43.83	\$14.59	\$19.04	\$2.24	\$79.70
	10/01/2025	\$45.08	\$14.59	\$19.04	\$2.24	\$80.95
	04/01/2026	\$46.58	\$14.59	\$19.04	\$2.24	\$82.45

**Apprentice - SHEET METAL WORKER - Local 17-B****Effective Date - 10/01/2024**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$16.93	\$14.59	\$4.18	\$1.09	\$36.79
2	45	\$19.05	\$14.59	\$4.71	\$1.17	\$39.52
3	50	\$21.17	\$14.59	\$11.84	\$1.45	\$49.05
4	55	\$23.28	\$14.59	\$11.84	\$1.52	\$51.23
5	60	\$25.40	\$14.59	\$15.53	\$1.64	\$57.16
6	65	\$27.51	\$14.59	\$15.84	\$1.71	\$59.65
7	70	\$29.63	\$14.59	\$16.15	\$1.78	\$62.15
8	75	\$31.75	\$14.59	\$16.45	\$1.86	\$64.65
9	80	\$33.86	\$14.59	\$16.76	\$1.93	\$67.14
10	85	\$35.98	\$14.59	\$17.07	\$2.00	\$69.64

**Effective Date - 04/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	40	\$17.53	\$14.59	\$4.18	\$1.09	\$37.39
2	45	\$19.72	\$14.59	\$4.71	\$1.17	\$40.19
3	50	\$21.92	\$14.59	\$11.84	\$1.45	\$49.80
4	55	\$24.11	\$14.59	\$11.84	\$1.52	\$52.06
5	60	\$26.30	\$14.59	\$15.53	\$1.64	\$58.06
6	65	\$28.49	\$14.59	\$15.84	\$1.71	\$60.63
7	70	\$30.68	\$14.59	\$16.15	\$1.78	\$63.20
8	75	\$32.87	\$14.59	\$16.45	\$1.86	\$65.77
9	80	\$35.06	\$14.59	\$16.76	\$1.93	\$68.34
10	85	\$37.26	\$14.59	\$17.07	\$2.00	\$70.92

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

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

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
SPECIALIZED EARTH MOVING EQUIP > 35 TONS <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.53	\$15.57	\$20.17	\$0.00	\$76.27
	06/01/2025	\$41.53	\$15.57	\$20.17	\$0.00	\$77.27
	12/01/2025	\$41.53	\$15.57	\$21.78	\$0.00	\$78.88
	01/01/2026	\$41.53	\$16.17	\$21.78	\$0.00	\$79.48
	06/01/2026	\$42.53	\$16.17	\$21.78	\$0.00	\$80.48
	12/01/2026	\$42.53	\$16.17	\$23.52	\$0.00	\$82.22
	01/01/2027	\$42.53	\$16.77	\$23.52	\$0.00	\$82.82
SPRINKLER FITTER <i>SPRINKLER FITTERS LOCAL 550 - (Section B) Zone 2</i>	03/01/2025	\$64.93	\$11.51	\$23.80	\$0.00	\$100.24

**Apprentice - SPRINKLER FITTER - Local 550 (Section B) Zone 2****Effective Date - 03/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	35	\$22.73	\$11.51	\$13.07	\$0.00	\$47.31
2	40	\$25.97	\$11.51	\$13.90	\$0.00	\$51.38
3	45	\$29.22	\$11.51	\$14.72	\$0.00	\$55.45
4	50	\$32.47	\$11.51	\$15.55	\$0.00	\$59.53
5	55	\$35.71	\$11.51	\$16.38	\$0.00	\$63.60
6	60	\$38.96	\$11.51	\$17.20	\$0.00	\$67.67
7	65	\$42.20	\$11.51	\$18.03	\$0.00	\$71.74
8	70	\$45.45	\$11.51	\$18.85	\$0.00	\$75.81
9	75	\$48.70	\$11.51	\$19.68	\$0.00	\$79.89
10	80	\$51.94	\$11.51	\$20.50	\$0.00	\$83.95

Notes: Apprentice entered prior 9/30/10:  
40/45/50/55/60/65/70/75/80/85  
Steps are 850 hours

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

STEAM BOILER OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

TELECOMMUNICATION TECHNICIAN <i>ELECTRICIANS LOCAL 223</i>	09/01/2024	\$40.69	\$11.75	\$14.53	\$0.00	\$66.97
	09/01/2025	\$42.52	\$12.00	\$15.30	\$0.00	\$69.82
	09/01/2026	\$44.41	\$12.25	\$16.09	\$0.00	\$72.75
	09/01/2027	\$46.51	\$12.50	\$16.93	\$0.00	\$75.94



## Classification

Effective Date

Base Wage

Health

Pension

Supplemental  
Unemployment

Total Rate

**Apprentice - TELECOMMUNICATION TECHNICIAN - Local 223****Effective Date - 09/01/2024**

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

**Notes:** See Electrician Apprentice Wages

Telecom Apprentice Wages shall be the same as the Electrician Apprentice Wages

**Apprentice to Journeyworker Ratio:2:3\*\*\*****TERRAZZO FINISHERS***BRICKLAYERS LOCAL 3 - MARBLE & TILE*

02/01/2025	\$64.74	\$11.49	\$23.59	\$0.00	\$99.82
08/01/2025	\$66.89	\$11.49	\$23.59	\$0.00	\$101.97
02/01/2026	\$68.24	\$11.49	\$23.59	\$0.00	\$103.32
08/01/2026	\$70.44	\$11.49	\$23.59	\$0.00	\$105.52
02/01/2027	\$71.84	\$11.49	\$23.59	\$0.00	\$106.92

**Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile****Effective Date - 02/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$32.37	\$11.49	\$23.59	\$0.00	\$67.45
2	60	\$38.84	\$11.49	\$23.59	\$0.00	\$73.92
3	70	\$45.32	\$11.49	\$23.59	\$0.00	\$80.40
4	80	\$51.79	\$11.49	\$23.59	\$0.00	\$86.87
5	90	\$58.27	\$11.49	\$23.59	\$0.00	\$93.35

**Effective Date - 08/01/2025**

Step	percent	Apprentice Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
1	50	\$33.45	\$11.49	\$23.59	\$0.00	\$68.53
2	60	\$40.13	\$11.49	\$23.59	\$0.00	\$75.21
3	70	\$46.82	\$11.49	\$23.59	\$0.00	\$81.90
4	80	\$53.51	\$11.49	\$23.59	\$0.00	\$88.59
5	90	\$60.20	\$11.49	\$23.59	\$0.00	\$95.28

**Notes:****Apprentice to Journeyworker Ratio:1:3****TEST BORING DRILLER***LABORERS - FOUNDATION AND MARINE*

12/01/2024	\$50.20	\$9.90	\$19.05	\$0.00	\$79.15
06/01/2025	\$51.70	\$9.90	\$19.05	\$0.00	\$80.65
12/01/2025	\$53.20	\$9.90	\$19.05	\$0.00	\$82.15
06/01/2026	\$54.75	\$9.90	\$19.05	\$0.00	\$83.70
12/01/2026	\$56.25	\$9.90	\$19.05	\$0.00	\$85.20

For apprentice rates see "Apprentice- LABORER"

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TEST BORING DRILLER HELPER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.32	\$9.90	\$19.05	\$0.00	\$75.27
	06/01/2025	\$47.82	\$9.90	\$19.05	\$0.00	\$76.77
	12/01/2025	\$49.32	\$9.90	\$19.05	\$0.00	\$78.27
	06/01/2026	\$50.87	\$9.90	\$19.05	\$0.00	\$79.82
	12/01/2026	\$52.37	\$9.90	\$19.05	\$0.00	\$81.32
For apprentice rates see "Apprentice- LABORER"						
TEST BORING LABORER <i>LABORERS - FOUNDATION AND MARINE</i>	12/01/2024	\$46.20	\$9.90	\$19.05	\$0.00	\$75.15
	06/01/2025	\$47.70	\$9.90	\$19.05	\$0.00	\$76.65
	12/01/2025	\$49.20	\$9.90	\$19.05	\$0.00	\$78.15
	06/01/2026	\$50.75	\$9.90	\$19.05	\$0.00	\$79.70
	12/01/2026	\$52.25	\$9.90	\$19.05	\$0.00	\$81.20
For apprentice rates see "Apprentice- LABORER"						
TRACTORS/PORTABLE STEAM GENERATORS <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$56.40	\$15.55	\$16.50	\$0.00	\$88.45
	06/01/2025	\$57.68	\$15.55	\$16.50	\$0.00	\$89.73
	12/01/2025	\$59.12	\$15.55	\$16.50	\$0.00	\$91.17
	06/01/2026	\$60.40	\$15.55	\$16.50	\$0.00	\$92.45
	12/01/2026	\$61.84	\$15.55	\$16.50	\$0.00	\$93.89
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
TRAILERS FOR EARTH MOVING EQUIPMENT <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.82	\$15.57	\$20.17	\$0.00	\$76.56
	06/01/2025	\$41.82	\$15.57	\$20.17	\$0.00	\$77.56
	12/01/2025	\$41.82	\$15.57	\$21.78	\$0.00	\$79.17
	01/01/2026	\$41.82	\$16.17	\$21.78	\$0.00	\$79.77
	06/01/2026	\$42.82	\$16.17	\$21.78	\$0.00	\$80.77
	12/01/2026	\$42.82	\$16.17	\$23.52	\$0.00	\$82.51
	01/01/2027	\$42.82	\$16.77	\$23.52	\$0.00	\$83.11
TUNNEL WORK - COMPRESSED AIR <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$58.43	\$9.90	\$19.50	\$0.00	\$87.83
	06/01/2025	\$59.93	\$9.90	\$19.50	\$0.00	\$89.33
	12/01/2025	\$61.43	\$9.90	\$19.50	\$0.00	\$90.83
	06/01/2026	\$62.98	\$9.90	\$19.50	\$0.00	\$92.38
	12/01/2026	\$64.48	\$9.90	\$19.50	\$0.00	\$93.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) <i>LABORERS (COMPRESSED AIR)</i>	12/01/2024	\$60.43	\$9.90	\$19.50	\$0.00	\$89.83
	06/01/2025	\$61.93	\$9.90	\$19.50	\$0.00	\$91.33
	12/01/2025	\$63.43	\$9.90	\$19.50	\$0.00	\$92.83
	06/01/2026	\$64.98	\$9.90	\$19.50	\$0.00	\$94.38
	12/01/2026	\$66.48	\$9.90	\$19.50	\$0.00	\$95.88
For apprentice rates see "Apprentice- LABORER"						
TUNNEL WORK - FREE AIR <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$50.50	\$9.90	\$19.50	\$0.00	\$79.90
	06/01/2025	\$52.00	\$9.90	\$19.50	\$0.00	\$81.40
	12/01/2025	\$53.50	\$9.90	\$19.50	\$0.00	\$82.90
	06/01/2026	\$55.05	\$9.90	\$19.50	\$0.00	\$84.45
	12/01/2026	\$56.55	\$9.90	\$19.50	\$0.00	\$85.95
For apprentice rates see "Apprentice- LABORER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
TUNNEL WORK - FREE AIR (HAZ. WASTE) <i>LABORERS (FREE AIR TUNNEL)</i>	12/01/2024	\$52.50	\$9.90	\$19.50	\$0.00	\$81.90
	06/01/2025	\$54.00	\$9.90	\$19.50	\$0.00	\$83.40
	12/01/2025	\$55.50	\$9.90	\$19.50	\$0.00	\$84.90
	06/01/2026	\$57.05	\$9.90	\$19.50	\$0.00	\$86.45
	12/01/2026	\$58.55	\$9.90	\$19.50	\$0.00	\$87.95
For apprentice rates see "Apprentice- LABORER"						
VAC-HAUL <i>TEAMSTERS JOINT COUNCIL NO. 10 ZONE B</i>	01/01/2025	\$40.24	\$15.57	\$20.17	\$0.00	\$75.98
	06/01/2025	\$41.24	\$15.57	\$20.17	\$0.00	\$76.98
	12/01/2025	\$41.24	\$15.57	\$21.78	\$0.00	\$78.59
	01/01/2026	\$41.24	\$16.17	\$21.78	\$0.00	\$79.19
	06/01/2026	\$42.24	\$16.17	\$21.78	\$0.00	\$80.19
	12/01/2026	\$42.24	\$16.17	\$23.52	\$0.00	\$81.93
	01/01/2027	\$42.24	\$16.77	\$23.52	\$0.00	\$82.53
WAGON DRILL OPERATOR <i>LABORERS - ZONE 2</i>	12/01/2024	\$40.61	\$9.65	\$17.70	\$0.00	\$67.96
	06/01/2025	\$42.00	\$9.65	\$17.70	\$0.00	\$69.35
	12/01/2025	\$43.38	\$9.65	\$17.70	\$0.00	\$70.73
	06/01/2026	\$44.82	\$9.65	\$17.70	\$0.00	\$72.17
	12/01/2026	\$46.26	\$9.65	\$17.70	\$0.00	\$73.61
	06/01/2027	\$47.71	\$9.65	\$17.70	\$0.00	\$75.06
	12/01/2027	\$49.16	\$9.65	\$17.70	\$0.00	\$76.51
	06/01/2028	\$50.66	\$9.65	\$17.70	\$0.00	\$78.01
	12/01/2028	\$52.16	\$9.65	\$17.70	\$0.00	\$79.51
For apprentice rates see "Apprentice- LABORER"						
WAGON DRILL OPERATOR (HEAVY & HIGHWAY) <i>LABORERS - ZONE 2 (HEAVY &amp; HIGHWAY)</i>	12/01/2024	\$39.20	\$9.90	\$18.46	\$0.00	\$67.56
	06/01/2025	\$40.59	\$9.90	\$18.46	\$0.00	\$68.95
	12/01/2025	\$41.97	\$9.90	\$18.46	\$0.00	\$70.33
	06/01/2026	\$43.41	\$9.90	\$18.46	\$0.00	\$71.77
	12/01/2026	\$44.85	\$9.90	\$18.46	\$0.00	\$73.21
For apprentice rates see "Apprentice- LABORER (Heavy and Highway)"						
WASTE WATER PUMP OPERATOR <i>OPERATING ENGINEERS LOCAL 4</i>	12/01/2024	\$57.03	\$15.55	\$16.50	\$0.00	\$89.08
	06/01/2025	\$58.33	\$15.55	\$16.50	\$0.00	\$90.38
	12/01/2025	\$59.78	\$15.55	\$16.50	\$0.00	\$91.83
	06/01/2026	\$61.08	\$15.55	\$16.50	\$0.00	\$93.13
	12/01/2026	\$62.53	\$15.55	\$16.50	\$0.00	\$94.58
For apprentice rates see "Apprentice- OPERATING ENGINEERS"						
WATER METER INSTALLER <i>PLUMBERS &amp; PIPEFITTERS LOCAL 51</i>	08/26/2024	\$52.49	\$10.80	\$21.40	\$0.00	\$84.69
	08/25/2025	\$55.24	\$10.80	\$21.40	\$0.00	\$87.44
For apprentice rates see "Apprentice- PLUMBER/PIPEFITTER" or "PLUMBER/GASFITTER"						

Classification	Effective Date	Base Wage	Health	Pension	Supplemental Unemployment	Total Rate
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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 00870

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

1. As used in these specifications:
  - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted:
  - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.
  - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
  - d. "Minority" includes:
    - (i) Black (all persons having origins in any of the black African racial groups not of Hispanic origin);
    - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
    - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
    - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$ 10,000 the provisions of the specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in Paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
  - a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
  - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
  - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
  - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
  - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.
  - f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
  - g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
  - h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

- i. Direct its recruitment efforts both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
  - j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.
  - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
  - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
  - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
  - n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
  - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
  - p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
  9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).
  10. The Contractor shall not use the goals and timetables of affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.
  11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as many be required by the Government and keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).



## APPENDIX A

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

Area covered: Goal for Women apply nationwide

Goals and TimetablesTimetableGoals (percent)

From Apr. 1, 1980 until further notice

6.9

## APPENDIX B-80

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

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

Economic AreasSTATE:Goals (percent)

## MASSACHUSETTS

004 Boston MA:

SMSA Counties:

1123 Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH

4.0

MA Essex, MA Middlesex, MA Norfolk, MA Plymouth,

MA Suffolk, NH Rockingham.

5403 Fall River- New Bedford MA, Bristol

1.6

9243 Worcester-Fitchburg-Leominster, MA

1.6

6323 Springfield-Chicopee-Holyoke MA-CT

4.8

MA Hampden, MA Hampshire

Non-SMSA Counties: MA Barnstable, MA Dukes, MA Nantucket

3.6

Non-SMSA Counties: MA Franklin

5.9

## APPENDIX C

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin (including limited English proficiency), age, sex, disability, or low-income status in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontractors, including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Acts and the Regulations relative to nondiscrimination on the grounds of race, color, national origin (including limited English proficiency), age, sex, disability, or low-income status.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto, and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Massachusetts Department of Transportation (MassDOT) or FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the contractor will so certify to MassDOT or FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Nondiscrimination provisions of this contract, MassDOT will impose such contract sanctions as it or FHWA may determine to be appropriate, including, but not limited to:
  - a. withholding payments to the contractor under the contract until the contractor complies; and/or
  - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as MassDOT or FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request MassDOT to enter into any litigation to protect the interests of MassDOT. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

## APPENDIX D

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

**PERTINENT NON-DISCRIMINATION AUTHORITIES:**

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252) (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. § 4601) (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-Aid programs and projects)
- Federal-Aid Highway Act of 1973 (23 U.S.C. § 324 *et seq.*) (prohibits discrimination on the basis of sex)
- Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. § 794 *et seq.*), as amended (prohibits discrimination on the basis of disability) and 49 CFR Part 27
- The Age Discrimination Act of 1975, as amended (42 U.S.C. § 6101 *et seq.*) (prohibits discrimination on the basis of age)
- Airport and Airway Improvement Act of 1982 (49 U.S.C. § 471, Section 47123), as amended (prohibits discrimination based on race, creed, color, national origin, or sex)
- The Civil Rights Restoration Act of 1987 (PL 100-209) (broadened the scope, coverage, and applicability of Title VI of the Civil Rights Act of 1964, the Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of Federal-Aid recipients, sub-recipients, and contractors, whether such programs or activities are Federally funded or not)
- Titles II and III of the Americans with Disabilities Act (42 U.S.C. §§ 12131-12189), as implemented by Department of Transportation regulations at 49 CFR parts 37 and 38 (prohibits discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities)
- The Federal Aviation Administration’s Non-Discrimination Statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex)
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations)
- Executive Order 13166, Improving Access to Services for People with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100)
- Title IX of the Education Amendments Act of 1972, as amended (20 U.S.C. 1681 *et seq.*) (prohibits discrimination on the basis of sex in education programs or activities)

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

DOCUMENT 00880

Revised January 12, 2022



# **DEPARTMENT OF LABOR**

**Employment Standards Administration**

## **MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONTRACTS**

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"General Decision Number: MA20250015 03/14/2025

Superseded General Decision Number: MA20240015

State: Massachusetts

Construction Type: Highway

County: Barnstable County in Massachusetts.

#### HIGHWAY CONSTRUCTION PROJECTS

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

If the contract is entered   into on or after January 30,   2022, or the contract is   renewed or extended (e.g., an   option is exercised) on or   after January 30, 2022:             	. Executive Order 14026   generally applies to the   contract.   . The contractor must pay   all covered workers at   least \$17.75 per hour (or   the applicable wage rate   listed on this wage   determination, if it is   higher) for all hours   spent performing on the   contract in 2025. 
If the contract was awarded on   or between January 1, 2015 and   January 29, 2022, and the   contract is not renewed or   extended on or after January   30, 2022:             	. Executive Order 13658   generally applies to the   contract.   . The contractor must pay all   covered workers at least   \$13.30 per hour (or the   applicable wage rate listed   on this wage determination,   if it is higher) for all   hours spent performing on   that contract in 2025. 

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

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

Modification Number	Publication Date
0	01/03/2025
1	03/14/2025

ELEC0223-001 09/01/2024

	Rates	Fringes
ELECTRICIAN (Includes Traffic Signalization) .....	\$ 50.02	31.09%+15.50

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 ENGI0004-032 12/01/2024

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
Group 1 .....	\$ 57.03	33.20
Group 2 .....	\$ 56.40	33.20

FOOTNOTE FOR POWER EQUIPMENT OPERATORS:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Labor Day, Memorial Day, Independence Day, Patriot's Day, Columbus Day, Veteran's Day, Thanksgiving Day, Christmas Day

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

Group 2: Bulldozer; Grader/Blade; Milling Machine; Roller

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IRON0007-026 03/16/2024

	Rates	Fringes
IRONWORKER (ORNAMENTAL AND STRUCTURAL) .....	\$ 54.68	36.48

\* LABO0133-001 12/01/2024

	Rates	Fringes
LABORER (Concrete Surfacers) .....	\$ 46.20	29.85

\* LABO0385-001 12/01/2024

	Rates	Fringes
LABORER		
Common or General .....	\$ 38.95	29.41
Fence Erection .....	\$ 38.95	29.41

\* LABO0385-005 12/01/2024

	Rates	Fringes
LABORER (Landscape) .....	\$ 38.95	29.41

LABO0596-009 12/01/2021

	Rates	Fringes
LABORER		
Guardrail Installation .....	\$ 32.75	23.96

PAIN0035-023 07/01/2024

	Rates	Fringes
PAINTER (Steel) .....	\$ 56.76	36.00

TEAM0059-001 06/01/2024

	Rates	Fringes
TRUCK DRIVER (Dump Truck).....	\$ 39.78	35.24+a+b

## FOOTNOTES:

A. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Patriot's Day, Columbus Day, Veteran's Day, Thanksgiving Day and Christmas Day

B. PAID VACATION: Employees with 4 months to 1 year of service receive 1/2 day's pay per month; 1 week vacation for 1 - 5 years of service; 2 weeks vacation for 5 - 10 years of service; and 3 weeks vacation for more than 10 years of service

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SUMA2014-005 01/11/2017

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 43.64	22.09
CEMENT MASON/CONCRETE FINISHER...	\$ 56.70	21.08
IRONWORKER, REINFORCING.....	\$ 44.52	19.36
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 33.65	17.32
LABORER: Concrete Saw (Hand Held/Walk Behind).....	\$ 44.43	14.18
LABORER: Jack Hammer.....	\$ 38.69	17.33
OPERATOR: Forklift.....	\$ 64.67	0.00
OPERATOR: Mechanic.....	\$ 48.74	11.79
OPERATOR: Piledriver.....	\$ 42.56	17.34

PAINTER: Spray (Linestriping).....\$ 47.30	6.42
TRAFFIC CONTROL:     Flagger.....\$ 23.00	20.44
TRAFFIC CONTROL:	
Laborer-Cones/	
Barricades/Barrels -	
Setter/Mover/Sweeper.....\$ 53.35	12.78
TRUCK DRIVER:   Concrete Truck.....\$ 33.69	15.79
TRUCK DRIVER:   Flatbed Truck.....\$ 48.53	0.00

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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

#### Union Rate Identifiers

A four-letter identifier beginning with characters other than "SU", "UAVG", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

#### Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

#### Survey Rate Identifiers

The ""SU"" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

#### State Adopted Rate Identifiers

The ""SA"" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

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## WAGE DETERMINATION APPEALS PROCESS

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

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to [davisbaconinfo@dol.gov](mailto:davisbaconinfo@dol.gov) or by mail to:

Branch of Wage Surveys  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to [BCWD-Office@dol.gov](mailto:BCWD-Office@dol.gov) or by mail to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to [dba.reconsideration@dol.gov](mailto:dba.reconsideration@dol.gov) or by mail to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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

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END OF GENERAL DECISION"

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DOCUMENT A00801

**SPECIAL PROVISIONS****BARNSTABLE****Federal Aid Project No. HIP(BR)-0035(062)X  
Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over  
Route 6 (Mid-Cape Highway)**

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

All work under this Contract shall be done in conformance with the *2024 Standard Specifications for Highways and Bridges*, the *Supplemental Specifications* contained in this book, the *2017 Construction Standard Details*, the *Traffic Management Plans and Detail Drawings*, *MassDOT Work Zone Safety Temporary Traffic Control*, the *1990 Standard Drawings for Signs and Supports*; the *2015 Overhead Signal Structure and Foundation Standard Drawings*, the *2009 Manual on Uniform Traffic Control Devices (MUTCD) with Revisions 1, 2, and 3* and the *November 2022 Massachusetts Amendments to the MUTCD*; the *1968 Standard Drawings for Traffic Signals and Highway Lighting*; *The American Standard for Nursery Stock*; the Plans and these Special Provisions.

The work under this contract consists of furnishing all necessary labor, materials, and equipment required to perform work as described below:

1. Install Advanced Warning Signs.
2. Selective Clearing and Thinning.
3. Install Temporary Barrier Limited Deflection TL3 for work zone for Stage I.
4. Install Temporary Pavement Markings.
5. Install Temporary Protective Shielding for demolition.
6. Remove and Stockpile Existing End Posts and New England Pink Granite in Stage I.
7. Remove and Dispose granite curb in Stage I.
8. Excavate existing bridge barrier and safety walk.
9. Perform any drainage repairs and upgrades in Stage I.

**SCOPE OF WORK** (Continued)

10. Drill and Dowel for new barrier in Stage I.
11. Form and Pour new CP-MTL3 barrier with safety fence in Stage I.
12. Install Highway Guardrail Transition, TL2 Tangent End Treatment, and Trailing Anchorage per plans in Stage I.
13. Remove Temporary Protective Shielding and install for Stage II.
14. Reset Temporary Barrier to Stage II location.
15. Grind and Install new Temporary Pavement Markings.
16. Remove and Stockpile Existing End Posts and New England Pink Granite in Stage II.
17. Remove and Dispose granite curb in Stage II.
18. Excavate existing bridge barrier and safety walk in Stage II.
19. Perform drainage repairs and upgrades in Stage II.
20. Drill and Dowel for new barrier in Stage II.
21. Form and Pour new CP-MTL3 barrier with Safety Fence in Stage II.
22. Install Highway Guardrail Transition, TL2 Tangent End Treatment, and Trailing Anchorage per plans in Stage II.
23. Perform Substructure repairs.
24. Apply Elastomeric protective coating.
25. Remove Temporary Barrier.
26. Bridge Pavement Milling of the entire bridge wearing surface of 1½”.
27. Replace milled wearing surface with 1 ½” of Superpave Bridge Surface Course – 9.5 Polymer (SSC-B - 9.5 - P).
28. Install new pavement markings

**LOCATION OF WORK**

- Bridge B-01-012 (4AP) Oak Street over Route 6 WB in Barnstable
- Bridge B-01-014 (4AN) Oak Street over Route 6 EB in Barnstable

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

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**SUBSECTION 7.05 INSURANCE REQUIREMENTS****B. Public Liability Insurance**

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

**Paragraphs 1 and 2**

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

**SCHEDULE OF WORK**

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

**Night Time Work**

Night restrictions are for Route 6 only. All work locations requiring night hours, as approved by the Engineer, are restricted as follows:

Sunday: 9:00 PM to 5:30 AM Monday  
Monday: 9:00 PM to 5:30AM Tuesday  
Tuesday: 9:00 PM to 5:30 AM Wednesday  
Wednesday: 9:00 PM to 5:30 AM Thursday  
Thursday: 9:00 PM to 5:30 AM Friday

No work shall be allowed on any roadway between Memorial Day and Labor Day without prior written approval of the Engineer and the Town.

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 prior approval by the Engineer. No additional compensation will be made for work scheduled during nighttime or longer work hours.

No entrance or exit ramp shall be closed to traffic except between the hours of 8:00 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.

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.

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## **CONTRACTOR QUESTIONS AND ADDENDUM ACKNOWLEDGEMENTS**

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

Contractors should email questions and addendum acknowledgements to the following email address [massdotSpecifications@dot.state.ma.us](mailto:massdotSpecifications@dot.state.ma.us). The MassDOT project file number and municipality is to be placed in the subject line.

## **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.

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**HOLIDAY WORK RESTRICTIONS (Continued)****Memorial Day (Federal Holiday)**

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

**Bunker Hill Day (Suffolk County State Holiday)**

No work restrictions due to traffic concerns.

**Juneteenth**

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

**Independence Day (Federal Holiday)**

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

**Labor Day (Federal Holiday)**

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

**Columbus Day (Federal Holiday)**

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

**Veterans' Day (Federal Holiday)**

No work restrictions due to traffic concerns.

**Thanksgiving Day (Federal Holiday)**

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

**Christmas Day (Federal Holiday)**

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

**EQUIVALENT SINGLE AXLE LOADS (ESALS)**

The estimated traffic level to be used for SUPERPAVE HMA mixture designs for this contract, expressed in Equivalent Single Axle Loads (ESALs) for the design travel lane over a 20-year period, is 2.3 Million 18-kip (80-kn) ESALs.

**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.

**2026 FIFA WORLD CUP – BOSTON, MASSACHUSETTS**

The 2026 FIFA World Cup will be held at Gillette Stadium in Foxborough and related events will be held throughout the region. Matches and Fan Fest activities are scheduled from June 11, 2026 through July 19, 2026. MassDOT will impose work restrictions as necessary to minimize traffic impacts during FIFA events when the Contractor's operations could impact vehicular traffic, particularly on interstate highways and major arterials throughout the region and local roads near the event site. No additional compensation will be allowed for work restrictions except as determined under Subsection 8.10.

**EMERALD ASH BORER ADVISORY**

To the extent possible, all trees and brush shall be disposed on site, typically chipped and spread in place. When trees or brush must be removed, such as in urban, or otherwise populated areas, Contractor shall identify proposed location for disposal, and provide written notification to the Engineer for approval. Disposal shall be in city or town of project, or at minimum, within county, of construction operations.

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**DISPOSAL OF EXCAVATED MATERIALS AND SITE CLEANING**

The Contractor is required to broom clean all work site areas after the removal of excavated debris regardless of preexisting conditions. This includes areas under excavated bridge joints such as pier caps, revetment areas, and bridge shielding areas. Removal of debris, site cleaning, and disposal of debris is incidental to the Contract and no additional payment will be made unless otherwise noted or specified on this Contract.

**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.

**ENVIRONMENTAL PERMITTING**

The proposed work does not occur in jurisdictional wetland resources subject to section 401 or section 404 of the Clean Water Act; therefore, the project does not require a Water Quality Certification from the Massachusetts Department of Environmental Protection or authorization from the US Army Corps of Engineers. The proposed work qualifies for the bridge exemption authorized in the Transportation Bond Bill and is therefore not subject to the Massachusetts Wetlands Protection Act, the Massachusetts Public Waterfront Act (Chapter 91), or the Massachusetts Environmental Policy Act. The Contractor is responsible for identifying and avoiding impacts to adjacent wetland resource areas.

**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.

Although soil excavation for this project is expected to be minimal, where excavation work is to be performed, if the soil is deemed to be questionable during the review of the RE/DEE/Project Designee, emergency containment protocols shall take place. Manpower and equipment will be tracked along with any additional site controls needed to keep the workforce and work environment safe. The contractor will be required to safely contain, remove, and dispose of the hazardous materials.

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**PRECAUTIONS FOR PROTECTION OF THE ENVIRONMENT**

During the execution of work under this contract, the Contractor shall exercise care in the placement and storage of equipment, materials and debris as many of the sites are in environmentally sensitive areas. No equipment, materials or debris can be placed or stored in or near a resource or drainage area leading to a resource as directed by the Engineer.

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 straw bales, sedimentation basins, silt fences or other control devices.

The erosion and sediment control features installed by the Contractor shall be satisfactorily maintained by the Contractor until acceptance of work under this Contract. 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. Additional sedimentation and erosion control measures shall be kept on site for emergency use. The erosion and sedimentation control installed by the contractor shall be incidental to this contract when required by the engineer.

**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.

**PROTECTION OF UTILITIES AND PROPERTY**

*(Supplementing Subsection 7.13)*

The bridge plans may indicate the location of existing known utilities in the vicinity of the work. Bidders are cautioned to verify this information, as its accuracy and completeness are not guaranteed in any manner.

The Contractor's attention is directed to the necessity of making his own investigation in order to assure that no damage to existing structures, drainage lines, traffic signal conduits, etcetera, will occur.

The Contractor is responsible for the protection of vehicular and pedestrian areas on and under the bridges being worked on. The Contractor at no additional compensation (unless otherwise, noted in this Contract) shall take all necessary precautions to protect vehicles and pedestrians from debris.



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

District 5 Utility/Constructability Engineer

Christopher Lockett (508) 884-6633

[chris.j.lockett@dot.state.ma.us](mailto:chris.j.lockett@dot.state.ma.us)

The existing 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 their own investigation 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 his/her intention to commence operations affecting such utilities at least one week in advance of the commencement of such operations and the Contractor shall at that time file a copy of such notice with the Engineer.

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 5

Select the Town of Barnstable, and then locate the utility"

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

**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 <http://www.mass.gov> by entering "Troop Boundaries" in the search box and selecting the resulting "Massachusetts State Police Troop Boundaries" link. Select the area of jurisdiction to find the local station.

The Contractor shall inform 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."

**EVERSOURCE EMERGENCY TELEPHONE NUMBERS****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

**NATIONAL GRID EMERGENCY TELEPHONE NUMBERS****GAS:**

Emergency: 1-800-233-5325

New Service: 1- 877-696-4743

Customer Support: 1-800-732-3400

**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 and coated with a zinc-rich primer conforming to MassDOT Standard Specification M7.04.11 before being covered with new concrete.

In bonding new concrete to already set concrete, the surface of the concrete shall be thoroughly cleaned, roughened, and ponded with clean water to achieve Saturated Surface Dry (SSD) condition then it shall then be blown off with oil free compressed air.

**BIDDERS LIST**

Pursuant to the provisions of 49 CFR Part 26.11 all official bidders will be required to report the names, addresses and telephone numbers of all firms that submitted bids or quotes in connection with this project. Failure to comply with a written request for this information within 15 business days may result in a recommendation to the Prequalification Committee that prequalification status be suspended until the information is received.

The Department will survey all firms that have submitted bids or quotes during the previous year prior to setting the annual goal and shall request that each firm report its age and gross receipts for the year.

**BUILD AMERICA BUY AMERICA PREFERENCE**

On Federally-aid projects the Buy America (23.CFR § 635.410) and Build America, Buy America Act. requires the following,

- (1) all iron and steel used in the project are produced in the United States--this means all manufacturing processes, from the initial melting stage through the application of coatings, must occur in the United States. Foreign steel and iron can be used if the cost of the materials does not exceed 0.1% of the total Contract cost or \$2,500, whichever is greater. The action of applying a coating to a covered material (i.e., steel and iron) is deemed a manufacturing process subject to Buy America. Coating includes epoxy coating, galvanizing, painting and any other coating that protects or enhances the value of a material subject to requirements of Build America, Buy America. Steel used for temporary support of excavation, including H piles, soldier piles, and sheeting when the steel is required to be left in place is subject to requirements of Build America, Buy America. Temporary steel, shall remain in place when it falls within the influence zone of the soil supporting any structure or railroad tracks.
- (2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States and
- (3) all construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States. “Construction materials” includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of:
  - non-ferrous metals,
  - plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables),
  - glass (including optic glass),
  - lumber; or
  - drywall.

The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

All articles, materials, and supplies should be classified as an iron or steel product, a manufactured product, or another product as specified by law or in 2 CFR part 184 (such other products specified by law or in 2 CFR part 184 include “excluded materials” and “construction materials”); an article, material, or supply must not be considered to fall into multiple categories.

**NOTE:** The requirements for manufactured products indicated in paragraph (2) above are not in effect for this contract.

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

The U.S. Fish and Wildlife Service (USFWS) has listed the northern long-eared bat (*Myotis septentrionalis*; NLEB) and tricolored bat (*Perimyotis subflavus*; TCB) as federally endangered or proposed endangered, respectfully, under the Endangered Species Act (ESA). USFWS has developed this guidance to address ESA compliance and promote conservation of NLEB and TCB. This project has been consulted with the USFWS through the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and Federal Transit Administration (FTA) Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat revised February 5, 2018 and amended March 31, 2023.

On behalf of FHWA, the lead federal agency for Section 7 consultation, MassDOT submitted a FHWA, FRA, FTA Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat to the USFWS through the Information for Planning and Consultation (IPaC) webpage. Therefore, the project has completed Section 7 consultation through the ESA.

In advance of the uplisting of the TCB to endangered under the ESA, the following Avoidance and Minimization Measures (AMMs) must be strictly adhered to in order to protect NLEB and TCB and to be in compliance with the ESA. Contact MassDOT Environmental Services - Wildlife Unit Supervisor (David Paulson, [david.j.paulson@dot.state.ma.us](mailto:david.j.paulson@dot.state.ma.us), 857-262-3378) for questions about project limits, restrictions, or conservation measures.

### **General AMM**

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

### **Lighting AMMs**

- Direct temporary lighting away from suitable habitat during the active season: **March 15 to November 30.**
- When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

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**NORTHERN LONG-EARED BAT AND TRICOLORED BAT PROTECTION** (Continued)**Tree Removal AMMs**

- *If additional cutting is proposed by the Contractor that is outside the scope of this contract, additional review is required by the MassDOT Highway Division's Environmental Services Section, and additional review and restrictions may be required by the USFWS.*
- 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 female northern long-eared bats and their young during the maternity roosting season, **no tree cutting shall be conducted from March 15 to November 30**. 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.
- The Contractor shall ensure all personnel working in on the project site are aware of all environmental commitments related to NLEB and/or TCB, including the **TOY** restriction. If this restriction needs to be waived at any location(s) the Resident Engineer shall send a locus map of the proposed work to MassDOT Highway Division's Environmental Services Section for review and a determination if the restriction can be waived.

**Bridge AMM**

- On 10/30/2024, the Wildlife and Endangered Species Unit conducted a northern long-eared bat bridge/structure bat assessment, in accordance with the USFWS guidelines. The assessment did not find presence of, or evidence of use by bats, and as stated within the guidelines, the assessment is valid for two years. If bridge work is not complete before 10/30/2026, assessment of the bridge for the presence of, or evidence of use by, bats shall be completed by the MassDOT Wildlife Unit prior to continuing bridge work. The Contractor shall notify the MassDOT Wildlife Unit no later than fourteen (14) days prior to 10/30/2026 to provide adequate time for inspection. If bats are found to be present, or, if there is evidence of bat usage, work at the bridge shall not commence until after the MassDOT Wildlife Unit has completed coordination with the US Fish and Wildlife Service to determine the appropriate follow up or mitigation actions.

**TRAFFIC ACCOMMODATION***(Supplementing Subsection 7.17)*

Traffic control devices shall comply with the relevant provisions of Subsection 850, the applicable sections of 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 *Manual for Assessing Safety Hardware*, and the following:

The order of precedence for the document that governs the positioning, sizing, color(s), shape, design, and operation of temporary traffic control devices shall be as set forth below:

1. Details for a specific location that have been designed by the Contractor and approved by the Engineer.
2. Details included in this contract.
3. MassDOT's *Work Zone Safety Temporary Traffic Control (Document A00815 on this Contract), Typical Details and Massachusetts Guidelines for MassDOT, Municipalities, Utilities, and Contractors*.
4. MassDOT's *Standard Details and Drawings for the Development of Temporary Traffic Control Plans* (<https://www.mass.gov/files/documents/2017/10/24/tcp.pdf>).
5. *2022 Massachusetts Amendments to the MUTCD*  
(<https://www.mass.gov/doc/massachusetts-amendments-to-the-mutcd-2022/download>)"
6. *2009 Manual on Uniform Traffic Control Devices (MUTCD) with Revisions 1, 2, and 3*  
(<https://mutcd.fhwa.dot.gov/>).

During construction, the Contractor shall contact the Engineer for the most recent copy of the *Work Zone Safety Temporary Traffic Control, Typical Details and Massachusetts Guidelines for MassDOT, Municipalities, Utilities, and Contractors*.

Truck Mounted Attenuators (TMAs), when shown in any details, are mandatory. Truck Mounted Attenuators shall shadow Temporary Traffic Control service vehicles during setup and breakdown of all temporary traffic control setups on roadways with speeds greater than 45 mph.

Traffic police, when required, shall be located at a sufficient distance in advance of the work area, so that they can warn oncoming motorists of the work.

MassDOT reserves the right to provide certified Roadway Flaggers, who are MassDOT employees, at the discretion of the Engineer. The Contractor shall not be charged nor compensated for the use of MassDOT employee flaggers.

**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.

## **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.

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## SECTION 722 CONSTRUCTION SCHEDULING DESCRIPTION

### 722.20 General

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

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

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

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

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

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

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

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

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

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

**B. Time Entitlement Analysis**

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

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

**SECTION 722** (Continued)

TEAs shall be submitted:

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

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

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

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

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

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

**C. Recovery Schedules**

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

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

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 |

**ITEM 102.**                      **SELECTIVE CLEARING AND THINNING**                      **ACRE**

The work under this Item shall conform to the relevant provisions of Subsection 101 of the Standard Specifications, and the following:

All areas along the wing walls and abutment of all bridges in this contract shall be cleared a minimum 15 feet wide of small trees, shrubs, and limbs or as directed by the Engineer.

**METHOD OF MEASUREMENT**

Item 102. will be measured for payment by the Acre per Subsection 101.80. If the area cleared is less than a full acre it shall be measured to the nearest square foot and converted to acres.

**BASIS OF PAYMENT**

Item 102. will be paid for at the Contract unit price per Acre per Subsection 101.81, which price shall include all labor, material, equipment, disposal, and all incidental costs required to complete the work.

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<b><u>ITEM 114.11</u></b>	<b><u>PARTIAL DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. B-01-012 (4AP)</u></b>	<b><u>LUMP SUM</u></b>
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<b><u>ITEM 114.12</u></b>	<b><u>PARTIAL DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. B-01-014 (4AN)</u></b>	<b><u>LUMP SUM</u></b>
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The work under these Items shall conform to the relevant provisions of Subsection 112, of the Standard Specifications and the following:

**DESCRIPTION**

The work under Items 114.11 and 114.12 includes, but is not limited to, removal and stockpiling of granite end posts, removal and stockpiling of pink granite, reinforced concrete excavation, removal and discarding of granite curbing, and the removal or demolition of other specified components of Bridge No. B-01-012 (4AP) and Bridge No. B-01-014 (4AN) to the limits shown on the Contract drawings and as required by the Engineer.

**CONSTRUCTION METHODS**

The Contractor shall verify all conditions and materials in the field and shall base the bid on the Contractor's own findings without any additional compensation for variance from the Contract drawings of these special provisions regarding actual conditions for Items to be removed.

During the prosecution of the work under these Items, the Engineer may reject the use of any method or equipment which causes undue vibration or possible damage to the remaining structure or any part thereof. The noise and dust created by demolition operations must be reduced to the maximum extent possible.

The Contractor shall take all precautions necessary so as not to damage those portions of the structure that are to remain including but not limited to the concrete arch frame and steel reinforcing to be retained. Any portions of the existing structure that are to remain which become damaged as a result of the Contractor's operation, as determined by the Engineer, shall be repaired to the satisfaction of the Engineer at no additional cost to the Department.

Additionally, the Contractor shall be responsible for maintaining portions of the existing structures, including but not limited to the underside of the frame and elevation faces of the bridge, throughout all stages of demolition and construction. The cost of any repairs to the existing structures that are required to maintain traffic shall be considered incidental to the respective item.

**ITEMS 114.11 and 114.12** (Continued)

No demolition work shall be started until any and all utility companies involved have been notified (not less than seven (7) days prior to the start of demolition) and the Contractor has received approval from the Engineer as to the equipment, procedures and schedule of operation to be used during the demolition and reconstruction periods. The Contractor shall carry on his work concurrently and in conjunction with the utility companies involved at the project site, so as to provide for all possible cooperation toward the satisfactory completion of the work with a minimum of delay and inconvenience. The Contractor shall be responsible for protecting any existing utility lines during his operations. If any utilities are damaged due to the Contractor's negligence, the Contractor shall make repairs at their own expense.

The Contractor shall take precautions to prevent debris from falling onto the roadways or sidewalks below, or to encroach upon the active lanes and shoulders. The Contractor shall be required to remove any debris which is generated by demolition from the site immediately and to restore portions of the site affected by the operation to their original undisturbed condition or better.

All materials removed under Items 114.11 and 114.12 not indicated to be stockpiled and remain the property of the Department, shall become the property of the Contractor and shall be removed from the job site at no additional expense unless such materials are designated to be reused in the proposed construction.

The Contractor shall make adequate provisions for the protection of traffic, private property and pedestrians from damage and injury during all phases of the demolition process.

**REMOVE AND STOCKPILE GRANITE END POSTS**  
**REMOVE AND STOCKPILE PINK GRANITE**

The work under these headings includes the complete removal and satisfactory stockpiling of all existing granite end posts, horizontal sawed face pink granite, and pink granite coping and shall conform to the relevant provisions of Subsection 112 of the Standard Specifications and the following:

**General**

The end posts are defined as the solid granite structures located at the four corners of the project limits. The Contractor shall remove the existing end posts with care to not damage it beyond its extent of reuse.

The granite coping is defined as the solid granite structures located on top of existing barrier wall at full length of the bridge on both sides of the road. The horizontal sawed face pink granite is defined as a four-inch (4") granite slab located on the outer face of existing barrier wall at full length of the bridge on both sides of the structures. The Contractor shall remove the existing granite with care to not damage it beyond its extent of reuse.



**ITEMS 114.11 and 114.12** (Continued)

The end posts and pink granite shall become the property of the MassDOT. The contractor shall coordinate with the Engineer to drop off all removed granite pieces at the MassDOT Bridge Maintenance Yard located at 251R Faunce Corner Road, Dartmouth, MA 02747.

**REINFORCED CONCRETE EXCAVATION**

The work under this heading shall conform to the relevant provisions of Subsection 120 of the Standard Specifications and the following:

The work includes removing and properly disposing of deteriorated concrete at the existing concrete parapets and safety walk in order to accept the new CP-MTL3 bridge barrier, existing bases as shown on the contract documents.

During the prosecution of work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the structure or any part thereof. In no event shall any pneumatic hammers heavier than the nominal 25 lbs. be used, unless approved by the Engineer. Also, no use of pneumatic or power-driven chipping hammers over the nominal 15 lbs. will be permitted to remove any concrete from below any reinforcing bar.

The Contractor shall take all precautions necessary so as not to damage those portions of the Bridge including reinforcing steel that is to remain.

The Contractor shall carefully remove the concrete around the existing reinforcing steel designated to be reused in the proposed construction. Existing reinforcing steel rendered unsuitable for reuse during construction due to negligence on the part of the Contractor shall be replaced at the Contractor's expense. Any steel that is unsuitable for further use through no fault of the Contractor shall be replaced under Lump Sum Items 992.11 and 992.12 (sub item 910.1). All reinforcing steel that is loose shall be tied tightly together using wire ties.

All excavations shall be squared off by sawcutting. The Contractor shall not remove any concrete beyond the specified limits unless ordered to do so by the Engineer. Any existing concrete designated to be retained during construction that is damaged by the Contractor's operation shall be replaced at the Contractor's expense.

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

**ITEMS 114.11 and 114.12 (Continued)****TEMPORARY PROTECTIVE SHIELDING**

The Contractor shall furnish and install temporary shielding to prevent any debris, materials, tools, or equipment resulting from operations from damaging the State Route 6 highway or other areas. Any material that falls into these areas or any damage to the highway pavement shall be immediately removed/repared at the Contractor's expense.

Shielding shall be in place prior to the start of the demolition and shall extend the full length of the span(s) where demolition is being performed and a sufficient distance beyond the bridge fascias. The shielding shall be installed or removed only upon the approval of the Engineer.

The Contractor shall submit shop drawings for temporary shielding to the Engineer for approval. The protective shields shall remain in position during removal of all specified concrete and remain during the forming of the proposed parapets. The shields shall be installed, removed and relocated to the next stage, or removed only upon approval of the Engineer. The removal and relocation of the shielding is incidental to sub-item 994.11.

**DEMOLITION PLAN SUBMITTALS**

The Contractor shall prepare and submit a demolition plan indicating his/her proposed demolition sequence, procedures and methods to be used including equipment, tools, devices, schedule of operations, methods of utility protection, methods of preventing any debris resulting from demolition, excavation or construction from damaging the roadway below to the Engineer of Record for approval. The demolition plan, including checked calculations sufficient to substantiate the adequacy of the proposed demolition sequencing and methods, shall be stamped by a Professional Structural Engineer registered in Massachusetts. This engineer shall be familiar with these specifications, those of the American Association of State Highway and Transportation Officials (AASHTO), the Work and be experienced in this technical field. Note: Any acceptance or approvals of the above submissions by the Engineer of Record shall not relieve the Contractor from responsibility for all demolition procedures and operations.

The Contractor shall take all measures necessary to protect pedestrian and vehicular traffic from his construction operations. No debris, tools or incidental equipment of any kind will be permitted to fall into areas where vehicular or pedestrian traffic exists. Any material that falls into such areas shall be removed immediately.

Surplus materials obtained from any type of excavation, and not needed for further use, as determined by the Engineer shall become the property of the Contractor and shall be disposed of by the Contractor.

The Contractor shall broom clean all work site areas after the removal of excavated debris regardless of preexisting conditions. This includes areas under the excavated repair area such as pier caps, revetment areas, and bridge shielding areas.

**ITEMS 114.11 and 114.12** (Continued)

The Contractor shall confirm any other limitations the utility has related to the work. If the utility requires complete shutdown of the bridge to complete the work due to unforeseen gas leaks in the vicinity of the Contractor shall submit a full detour plan for approval prior to commencing work.

The design and recommended construction sequences depicted on the Contract drawings and described within these Special Provisions, present one possible sequencing of the work and method of construction for each bridge.

The Contractor may choose to adopt the proposed sequences or develop an approach and propose a method to accomplish construction using sequence other than that which is shown in the contract documents. In either instance the Contractor must carefully study the site, the schedule restraints, and logistical requirements in relation to the selected means and methods and assure that the work can be accomplished.

In the event that the Contractor chooses to develop an alternative approach, the Contractor must re-evaluate the structure and any related appurtenances and ancillary structures for compliance with all applicable design and construction standards. Under this circumstance, the Contractor shall submit plans, detailed drawings, and calculations, which describe and evaluate these changes, to the Engineer for approval. These plans, detailed drawings, and calculations shall be in accordance with Department standards and specifications. Upon acceptance of the changes, the Contractor will be held solely responsible for design of all affected structures.

Regardless of whether the Contractor uses the recommended construction approach or proposes alternative methods, the contractor shall submit for approval, procedures for the actual methods to be used in the work which demonstrate that the construction approach is in accordance with Department standards and specifications.

All calculations, drawings and reports shall be submitted for review and approval. Calculations and drawings shall bear the seal of a Professional Engineer of the appropriate discipline registered in Massachusetts.

**BASIS OF PAYMENT**

Items 114.11 and 114.12 will be paid for at the respective Contract Lump Sum prices, which prices shall include all labor, materials, equipment, sawcutting, shop drawing, submittal, engineering services, and incidental costs required to complete the work.

The Contractor shall make his/her own investigation of the structure to be demolished including the materials that are part of or may be stored in the structure. No increase will be made to the bid price due to the nature of the materials involved in the demolition. All costs for permits, dump fees, special handling of hazardous materials, etcetera, shall be included in the bid price of the demolition Item, except for those included for payment in the estimate under other items.

**ITEMS 114.11 and 114.12 (Continued)**

MassDOT does not guarantee or represent that the bridge materials will actually coincide with any descriptions contained herein or represented on the Contract drawings. The Contractor shall be satisfied by their own investigation and research regarding all conditions and materials affecting the work to be done.

The Contractor shall submit in duplicate for approval, by the Engineer, a cost schedule for the Demolition of Superstructure Components for Bridge No. B-01-012 (4AP) and Bridge No. B-01-014 (4AN). The approval of the cost schedule by the Engineer shall not be considered as a guarantee to the Contractor of the quantities assumed in developing any part of the submitted cost schedule. The schedule is only for the purposes of estimating partial payments, and it shall not affect the contract terms in any way.

No additional compensation, other than the lump sum price bid for this item, shall be made if the materials or work prove to be different than the inferred or described herein, or shown on the Contract drawings.

**BASIS FOR PARTIAL PAYMENT FOR PARTIAL DEMOLITION OF SUPER-STRUCTURE OF BRIDGE NO. B-01-012 (4AP)**

<b><u>Sub-Item No.</u></b>	<b><u>Description</u></b>	<b><u>QTY.</u></b>	<b><u>UNIT</u></b>	<b><u>UNIT PRICE</u></b>	<b><u>TOTAL</u></b>
116.1	Remove and Stockpile Granite End Posts	2	EA		
116.3	Remove and Stockpile Pink Granite	22	CF		
127.1	Reinforced Concrete Excavation	85	CY		
594.	Curb Removed and Discarded	372	FT		
994.11	Temporary Protective Shielding	183	FT		

**TOTAL LUMP SUM FOR ITEM 114.11 =**

**BASIS FOR PARTIAL PAYMENT FOR PARTIAL DEMOLITION OF SUPER-STRUCTURE OF BRIDGE NO. B-01-014 (4AN)**

<b><u>Sub-Item No.</u></b>	<b><u>Description</u></b>	<b><u>QTY.</u></b>	<b><u>UNIT</u></b>	<b><u>UNIT PRICE</u></b>	<b><u>TOTAL</u></b>
116.1	Remove and Stockpile Granite End Posts	2	EA		
116.3	Remove and Stockpile Pink Granite	22	CF		
127.1	Reinforced Concrete Excavation	83	CY		
594.	Curb Removed and Discarded	372	FT		
994.11	Temporary Protective Shielding	183	FT		

**TOTAL LUMP SUM FOR ITEM 114.12 =**

**ITEM 127.12****REINFORCED CONCRETE SUBSTRUCTURE  
EXCAVATION****CUBIC YARD**

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 shall consist of the removal and disposal of all deteriorated, spalled, and scaled concrete as required to repair the existing concrete spandrel walls and barrel ceiling to the general lines identified on the drawings and as required by the Engineer.

During the prosecution of the Work, the Engineer may reject the use of any method or equipment which causes undue vibration or possible damage to the structure or any part thereof. 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. 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.

**ITEM 129.6****BRIDGE PAVEMENT EXCAVATION****SQUARE YARD**

The work under this Item shall conform to the relevant provisions of Subsection 120 of the Standard Specifications and the following:

The work under this Item shall consist of the removal and disposal of HMA from the rigid frame as required by the Engineer.

The edges of all areas where existing asphalt is removed under this Item shall be sawcut to a depth of 1 inch.

The Contractor shall submit to the Engineer for approval the type of machine that will be used. Bridge frame damaged by the Contractor's operations shall be repaired at the Contractor's own expense.

**METHOD OF MEASUREMENT**

Item 129.6 will be measured for payment by the Square Yard of actual area of the existing HMA pavement excavated, to include gravel layers found between HMA and rigid frame, removed, and properly disposed.

**BASIS OF PAYMENT**

Item 129.6 will be paid for at the Contract unit price per Square Yard, which price shall include all labor, materials, equipment, sawcutting, excavation and disposal HMA pavement including gravel layers found between HMA and rigid frame, and all incidental costs required to complete the work.

**ITEM 184.1****DISPOSAL OF TREATED WOOD PRODUCTS****TON**

(Rev 08/09/2016)

Work under this item shall include the transportation and disposal of all treated existing wood product as directed by the Engineer.

The timber components of the existing structure are suspected to be treated with creosote, pentachlorophenol and/or CCA. This item shall include all costs for sampling, laboratory testing, loading, transportation and disposal of the treated wood. The Contractor is required to submit disposal manifests to the Engineer prior to the completion of the project. All aspects of this Item are to be completed in accordance with state and federal regulations.

**COMPENSATION**

Measurement and payment will be by the weight, in tons, of treated timber transported and accepted at a licensed facility. The work shall be considered full compensation for all labor, tools, equipment, materials, testing, loading, transportation, approvals, and permits necessary for the completion of the work.



**ITEM 482.31****SAWING AND SEALING JOINTS IN ASPHALT  
PAVEMENT AT BRIDGES****FOOT**

The work to be done under this Item consists of making a sealed kerf across the full width of the finished asphalt pavement at bridge abutments where called for on the Plans. The shape, width, and depth of the kerf shall be as shown on the Plans.

Prior to the start of the asphalt pavement operation, the Contractor shall place a mark on each curb or barrier on either side of the paved roadway. These marks shall be aligned with the actual end of the rigid frame and shall be placed so that they will not be covered or otherwise obscured by the asphalt pavement.

After the completion of the paving operation, the Contractor shall snap a straight chalk line on the pavement between these two marks. The Contractor shall then saw cut the pavement along this line to the depth, width and shape shown on the Plans. The equipment shall be approved by the Engineer prior to commencing work.

After completing the saw cutting, the Contractor shall clean the saw groove of any dust and debris with an oil free air blast. If the groove was wet sawn, the groove shall be cleaned with a water blast to remove any remaining slurry and debris, vacuumed with a Wet-or-Dry vacuum to remove any standing water, and then dried with an air blast from a Hot-Air-Lance.

Once the groove is clean and dry, the Contractor shall fill it completely with a hot-applied bituminous crack sealer meeting the requirements of M3.05.4 in accordance with the manufacturer's application instructions and restrictions regarding ambient and material temperatures. The crack sealer shall be thoroughly cured prior to opening the road to traffic. To reduce tackiness, only boiler slag aggregate (black beauty) shall be scattered over the sealer when deemed necessary by the Engineer. Conventional sand shall not be used for this purpose.

**METHOD OF MEASUREMENT**

Item 482.31 will be measured for payment by the Foot, of the actual number of feet of kerf sawed and sealed in the asphalt pavement surface, complete in place.

**BASIS OF PAYMENT**

Item 482.31 will be paid for at the Contract unit price per Foot, which price shall include all labor, materials, equipment, and all incidental costs required to complete the work.

**ITEM 734.****SIGN REMOVED AND RESET****EACH**

The Contractor shall carefully remove and reset all designated existing signs including attachment hardware not included under other sign items as needed and where directed by the Engineer.

Work shall include the dismantling, removal, transporting, storing and resetting of existing bridge and traffic signs that are attached to the elevations of the bridge. The Contractor shall completely remove the sign and reset said sign at the new location. New attachment hardware shall be furnished as necessary to replace any missing or unusable existing hardware.

Existing sign damaged by the Contractor's operations shall be replaced in-kind by the Contractor at no additional compensation.

Included under this item are bridge, warning, regulatory, and route marker signs and miscellaneous directional signs.

**METHOD OF MEASUREMENT**

Item 734. will be measured for payment by the EACH Sign Removed and Reset, complete in place.

**BASIS OF PAYMENT**

Item 734. will be paid for at the respective Contract unit price per EACH, which prices shall include all labor, material, equipment, and all incidental costs required to complete the work.

**ITEM 740. ENGINEER'S FIELD OFFICE AND EQUIPMENT (TYPE A) MONTH**

The work under this Item shall conform to the relevant provisions of Subsection 740 of the Standard Specifications and the following:

Two (2) computer system and printer system meeting minimum requirements set forth below including installation, maintenance, power, paper, disks, and other supplies shall be provided at the Resident Engineer's Office:

All equipment shall be UL approved and Energy Star compliant.

The Computer System shall meet the following minimum criteria or better:

Processor:	Intel, 3.5 GHz
System Memory (RAM):	12 GB
Hard Drive:	500 GB
Optical Drive:	DVD-RW/DVD+RW/CD-RW/CD+RW
Graphics Card:	8 GB
Network Adapter:	10/100 Mbit/s
USB Ports:	6 USB 3.0 ports
Keyboard:	Generic
Mouse:	Optical mouse with scroll, MS-Mouse compliant
Video/Audio	the computer system shall be capable of allow video calling and recording:
Video camera	shall be High Definition 1080p widescreen capable video calling and recording with built in microphone. The microphone system shall capture natural audio while filtering out background noise.
Audio	shall be stereo multimedia speaker system delivering premium sound.
OS:	Latest Windows Professional with all security updates
Web Browser:	Latest Internet Explorer with all security updates
Applications:	Latest MS Office Professional with all security updates
	Latest Adobe Acrobat Professional with all security updates
	Latest Autodesk AutoCAD LT
	Antivirus software with all current security updates maintained through the life of the contract.
Monitors:	Two 27" LED with Full HD resolution. Max. resolution 1920 x 1080
Flash drives:	2 (two) - 128GB USB 3.0
Internet access:	High Speed (min. 24 mbps) internet access with wireless router.

**ITEM 740.** (Continued)

The Multifunction Printer System shall meet the following minimum criteria or better:

Color laser printer, fax, scanner, email and copier all in one with the following minimum capabilities:

- Estimated volume 8,000 pages per month
- LCD touch panel display
- 50 page reversing automatic document feeder
- Reduction/enlargement capability
- Ability to copy and print 11" x 17" paper size
- email and network pc connectivity
- Microsoft and Apple compatibility
- ability to overwrite latent images on hard drive
- 600 x 600 dpi capability
- 30 pages per minute print speed (color),
- 4 Paper Trays Standard (RADF) (not including the bypass tray)
- Automatic duplexing
- Finisher with staple functions
- Standard Ethernet. Print Controller
- Scan documents to PDF, PC and USB
- ability to print with authenticated access protection

The Contractor shall supply a maintenance contract for next day service, and all supplies (toner, staples, paper) necessary to meet estimated monthly usage.

The Engineer's Field Office and the equipment included herein including the computer system, and printer shall remain the property of the Contractor at the completion of the project. Disks, flash drives, and card readers with cards shall become the property of the Department.

Compensation for this work will be made at the contract unit price per month which price includes full compensation for all services and equipment, and incidentals necessary to provide equipment, maintenance, insurance as specified and as directed by the Engineer.

**ITEM 853.21****TEMPORARY BARRIER REMOVED AND RESET****FOOT**

Work under this item shall conform to the relevant provisions of Section 850 and shall consist of removing, transporting and resetting temporary barrier systems and limited deflection temporary barrier systems from alignments established along the roadway to new alignments in accordance with the details shown on the plans, as required by the construction and staged construction operations and as required by the Engineer for the channelization of traffic and/or work zone protection.

The work shall also include furnishing and installing all hardware and associated materials per the details and/or manufacturer's specifications. The work shall also include necessary patches and repairs caused by the temporary barrier system to damaged pavement surfaces or any adjacent longitudinal barrier once the system has been removed.

Temporary barrier systems and limited deflection temporary barrier systems shall be removed from existing locations and reset in accordance to the construction methods stated in the respective barrier items.

Damage to the pavement surface or adjacent permanent barriers caused by removing or resetting temporary barrier shall be repaired as directed by the Engineer at the Contractor's expense.

**METHOD OF MEASUREMENT AND BASIS OF PAYMENT**

Item 853.21 will be measured and paid by the foot, in place which shall provide full compensation for removing, relocating, resetting, realigning, and transporting maintaining the temporary barrier system and/or limited deflection temporary barrier system. The Contractor will be paid for this item each time the barrier is relocated either to a new work zone, to off-season storage, or back to the project from storage. The Contractor will not be separately compensated for any work necessary to maintain or re-align units or replace damaged units. No payment will be made for removing and resetting barriers for the purpose of gaining access to the construction work zone. No payment will be made for removing, relocating and resetting any barriers moved for the convenience of the Contractor.

For temporary barrier systems that require anchorage systems, the cost of furnishing, installing and removing the anchorage and hardware and the restoration of pavement surfaces or adjacent permanent barrier systems to facilitate anchorage shall be considered incidental to the cost of this Item.

**ITEM 853.33      TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3)      FOOT****DESCRIPTION**

Work under this item shall conform to the relevant provisions of Section 850 and shall consist of furnishing, installing, maintaining and final removal of limited deflection TL-3 temporary barrier systems for channelization of traffic and/or work zone protection. Limited deflection temporary barrier systems shall have a maximum dynamic deflection of 24 inches or less and shall be used in areas where the available clear area behind the barrier system is 24 inches or less.

**MATERIALS**

The Contractor shall use a temporary barrier system that is listed on the Qualified Traffic Control Equipment List.

The Contractor may submit alternate materials to the Engineer for approval if the limited deflection temporary barrier system meets the following criteria:

1. The system has been tested by an independent laboratory that is accredited by FHWA to crash test roadside hardware;
2. The system meets the minimum requirements of the AASHTO *Manual on Assessing Safety Hardware* (MASH) at Test Level (TL) 3 or higher; and
3. The system has a federal-aid eligibility letter from FHWA.

Copies of the testing results and the federal-aid eligibility letter shall be submitted and approved by the Engineer prior to procurement of an alternate temporary barrier system.

The Contractor shall supply shop drawings to confirm the available clear area behind the barrier equals or exceeds the maximum dynamic deflection of MASH Test 3-11 during testing procedures taken at an independent laboratory that is accredited by FHWA to crash test roadside hardware.

Delineators shall be installed on all limited deflection temporary barrier systems in conformance with the relevant provisions of Section 850.69 and shall be incidental to the temporary barrier systems.

Temporary impact attenuators that are listed on the Qualified Traffic Control Equipment List shall be used whenever a blunt end of the limited deflection temporary barrier system is facing traffic within the clear zone unless it is protected by a second barrier system or secured to a separate barrier system or bridge railing by a method approved by the manufacturer.

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## **CONSTRUCTION METHODS**

Limited deflection temporary barrier systems shall be placed in line with the drawings. Installation shall be per the manufacturer's specifications, details, and the approved shop drawings.

The Contractor shall not place any breaks in the limited deflection temporary barrier system that will result in sections that are shorter than the stated minimum length-of-need (LON) under MASH Test 3-11. Exceptions shall be allowed for gate systems or changeable length segments placed over expansion joints if those barrier segment types have been tested and meet the minimum requirements of MASH Test 3-11 with the adjoining limited deflection barrier system.

Within the LON section, limited deflection temporary barrier systems shall only be placed on paved surfaces unless otherwise tested and certified under MASH TL-3 for those conditions.

Damage to the pavement surface caused by the limited deflection temporary barrier during installation, while in service, and/or during removal shall be repaired as directed by the Engineer at the Contractor's expense

Limited deflection temporary barrier systems that require anchorage systems shall conform to the relevant provisions of Section 850.70.

## **METHOD OF MEASUREMENT**

Item 853.33 will be measured by the foot, in place.

## **BASIS OF PAYMENT**

Payment for work under this item will be made at the contract price per foot for limited deflection temporary barrier installed in place, including all incidental items. This price shall include the cost of furnishing, installing, maintaining and final removal of all limited deflection temporary barrier systems.

For limited deflection temporary barrier systems that require anchorage systems, the cost of furnishing and installing the anchorage and hardware and the restoration of pavement surfaces or adjacent permanent barrier systems to facilitate anchorage shall be considered incidental to the cost of the item.

Payment for limited deflection temporary barrier removed and reset will be made under Item 853.21.

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

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

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

These towers shall be used, relocated and adjusted to meet the criteria in Section 850 of the Standard Specifications and the following:

The Contractor shall illuminate the following work zone areas:

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

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

<b>Task Classifications</b>	<b>Illumination Level</b>	<b>Average Minimum Maintained Illuminance</b>
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 necessary, 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.

The Contractor shall allow MassDOT up to 30 calendar days for review and comment.

**METHOD OF MEASUREMENT**

Item 853.8 will be measured and paid at the Contract unit price per Day according to Subsections 850.80 and 850.81 of the Standard Specifications.

**BASIS OF PAYMENT**

Item 853.8 will be paid for at the Contract unit price per DAY. The cost shall include all labor, materials, equipment, tools and all incidentals required for the design and installation of the work zone lighting system. This shall include but not be limited to lighting submission preparation, wiring connections, equipment relocations, and include all material and labor incidental for a complete, functional and operational work zone illumination system.

The price of this item shall include the material and labor necessary to install any supplemental hardware required to reduce glare on all adjacent active travel lanes.

The per Day (up to 24 hours) price shall be full compensation for all "Temporary Illumination for Work Zone" regardless of the number of concurrent work areas, amount of equipment concurrently in use or the durations of or changes of the work shifts per Day.

Furnishing, installing, resetting, modifying, and removing equipment for work zone illumination shall be incidental to Item 853.8.

**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:

<b>Speed Limit</b>	<b>Distance Between Rumble Strips (measured center-to-center)</b>
>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.

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<b><u>ITEM 859.1</u></b>	<b><u>REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS</u></b>	<b><u>DAY</u></b>
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The work under this Item shall conform the relevant provisions of Subsection 850 of the Standard Specifications and the following:

Work under this item consists of furnishing, installing, maintaining in proper operating conditions, and removing reflectorized drums, and any necessary ballast, equipped with sequential flashing warning lights.

**MATERIALS**

Reflectorized drums shall be listed on the MassDOT Qualified Traffic Control Equipment List. Reflective sheeting on drums shall meet or exceed ASTM D4956 Type VIII. All drums shall be maintained in a satisfactory manner including the removal of oils, dirt, and debris that may cause reduced retroreflectivity.

The Contractor shall use one of the following sequential flashing warning light systems unless otherwise approved by the Engineer:

1. Empco-Lite LWCS.
2. pi-Lit® Sequential Barricade-Style Lamp; or
3. Unipart Dorman SynchroGUIDE.

Sequential flashing warning lights shall be secured to reflectorized drums per the light manufacturer's specifications.

**CONSTRUCTION METHODS**

The first ten (10) drums in any merging or shifting taper as designated in the Temporary Traffic Control Plan shall be equipped with sequential flashing warning lights. These lights shall be operating, at a minimum, between dusk and dawn when the taper is deployed.

The successive flashing of the sequential warning lights shall occur from the upstream end of the merging or shifting taper to the downstream end of the taper in order to identify the desired vehicle path. Each warning light in the sequence shall be flashed at a rate of not less than 55, nor more than 75 times per minute.

Warning lights shall be powered off when drums are not deployed in a taper.

**METHOD OF MEASUREMENT**

A group of ten (10) reflectorized drums with sequential flashing warning lights is considered one (1) unit and will be measured by the day. Each period of up to 24 hours during which this unit is in use will be measured as one day regardless of the number of times that the drums are positioned, repositioned, removed, or returned to service.

**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 874.1****STREET SIGN REMOVED AND RESET****EACH**

The work under this Item shall conform to the relevant provisions of Subsection 828 of the Standard Specifications and the following:

The Contractor shall carefully remove and reset at new locations all existing signs, sign posts, attachment hardware and sign support posts not included under other sign items as shown on the drawings and as required by the Engineer.

After removing the existing sign, sign post, and foundation, the hole shall be backfilled with material similar to the adjacent ground, thoroughly compacted, and finished with a surface material similar to the adjacent ground. All excavation, backfill, and compaction required, shall be considered incidental to the items of work.

Signs, attachment hardware and sign support posts shall be satisfactorily stored and protected until reset in the proposed work.

Signs, attachment hardware and sign support posts lost, damaged or otherwise made unsuitable for reuse while being removed, transported, stored or reset shall be replaced with new materials at no additional cost. New attachment hardware shall be furnished and installed as necessary to replace any missing or unusable existing hardware.

**METHOD OF MEASUREMENT**

Item 874.1 will be measured for payment by the EACH Street Sign Removed and Reset, complete in place.

**BASIS OF PAYMENT**

Item 874.1 will be paid for at the Contract unit price per EACH, which price shall include all labor, material, equipment, removing the existing sign, sign post, and foundation, backfill, compaction, restoration of the existing surface, and all incidental costs required to complete the work.

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**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 furnishing 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 Item 127.12.

The Contractor's attention is directed towards the Repair Procedure as noted in the Contract drawings.

All formwork shall be approved and accepted by the Engineer prior concrete placement.

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

**METHOD OF MEASUREMENT**

Item 905. will be measured for payment by the 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, and all incidental costs required to complete the work.

No separate payment will be made for the installation and 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 installation.

The remaining thirty percent (30%) of the Cubic Yard price of this Item will be paid only after complete formwork removed by the Contractor.

**ITEM 964.3****ELASTOMERIC PROTECTIVE COATING****SQUARE FOOT**

The work under this item shall consist of applying a minimum of two coats of an elastomeric acrylic protective coating to the exposed concrete faces of the west and east elevations, barriers and endposts, and/or as directed by the Engineer. Where this item is applied to sidewalks, a suitable grit shall be applied in accordance with manufacturer's recommendations.

A total dry film thickness (DFT) of 16 mils shall be required.

The acrylic protective coating shall be breathable, durable, flexible, and color retentive. It shall provide protection and be resistant to weathering, carbon dioxide, chlorides, UV light, wind driven rain, dirt pick up and mildew. It shall also bridge hairline cracks up to 1/32". The acrylic protective coating system shall be one of the following or an approved equal:

- SikaGard 550W Elastocolor by Sika Corp.
- Flexxide Elastomer by Carboline
- Colorlastic by ChemMasters

The proposed coating product shall be submitted to the Engineer for approval. The Contractor shall submit the proposed application procedures and Manufacturer's Product Data Sheet(s) that completely describe the product. The color of the coating shall be AMS-STD26559 from the AMS Standard 595 Colors.

**PREPARATION AND PROTECTION OF SURFACES**

All vegetation growing adjacent to or within the limits of the concrete surfaces to be coated shall be removed and properly discarded. All debris adjacent to or within the limits of the concrete surfaces to be coated shall be removed and properly discarded.

All surfaces to be coated must be dry, clean, sound, and free of all contaminants that could interfere with adhesion of the coating. All loose material shall be removed. If directed by the Engineer, the contractor shall repair any holes and any spalled and damaged concrete prior to applying the coating. All concrete repair areas shall be cured for a minimum 28 days before coating.

The Contractor shall pressure wash all concrete surfaces to be coated. The pressure washer shall operate at a minimum of 3,000 psi. The protective coating shall not be applied until the surface is dry and the surface preparation has been approved by the Engineer. All concrete to be coated must be tested for the presence of moisture after the surface preparation has been completed and prior to application of coating. Testing shall be in accordance with ASTM D 4263.

**APPLICATION**

Application shall be done by airless sprayer or roller or a combination of both and in accordance with the manufacturer's recommendations. The use of a primer shall not be required unless stipulated for that particular coating by the manufacturer. A minimum of two coats shall be applied to achieve a total DFT of 16 mils. The recommended minimum wet film thickness (WFT) must be maintained during each application. The manufacturer's specified temperature and weather limitations for the application shall be strictly adhered to.

**ITEM 964.3** (Continued)

**METHOD OF MEASUREMENT**

Item 964.3 will be measured for payment by the Square Foot for all concrete surfaces to which the coating is applied, complete in place.

**BASIS OF PAYMENT**

Item 964.3 will be paid for at the Contract unit price per Square Foot, which price shall include all labor, materials, tools, equipment, preparation and protection of surfaces, wet/dry film thickness gauge for the use by the Engineer, and all incidental costs required to complete the work.



<b><u>ITEM 992.11</u></b>	<b><u>ALTERATION TO BRIDGE STRUCTURE</u></b>	<b><u>LUMP SUM</u></b>
	<b><u>NO. B-01-012 (4AP)</u></b>	

<b><u>ITEM 992.12</u></b>	<b><u>ALTERATION TO BRIDGE STRUCTURE</u></b>	<b><u>LUMP SUM</u></b>
	<b><u>NO. B-01-014 (4AN)</u></b>	

The work to be done under these Items shall conform to the relevant provisions of Subsection 995 of the Standard Specifications and the specific requirements stipulated for component parts of Item 992.11 and Item 992.12. For those component parts where no specific requirement is stipulated, the Standard Specifications shall apply, except for payment.

### **DESCRIPTION**

The work includes furnishing and placing cement concrete; furnishing and placing steel reinforcing; furnishing and installing precast highway guardrail transition; furnishing and installing drilling and grouting dowels; furnishing and placing protective screen type II as shown on the Contract drawings for Bridge No. B-01-012 (4AP) and Bridge No. B-01-014 (4AN) located along Route 6 in Barnstable Massachusetts, respectively.

Payment for materials shown on the Contract drawings as being part of this alteration to bridge structure or which may be incidental to its construction and are not specifically included for payment under another Item shall be considered incidental to the work performed under these Items and shall be included in the unit price of the component of which they are a part.

These Items includes all materials and labor necessary to complete the work in accordance with the schedules listed hereinafter under Basis for Partial Payments and all other Items that are part of the work for which payment is not provided in the proposal.

The Contractor is advised that the work included under these Items will require coordination with the following entities, as specified hereinbefore:

- Town of Barnstable
- Eversource Electric
- Verizon
- Comcast Cable Corporation
- Nation Grid Gas

The work under these Items includes the reconstruction of the east and west barrier on Bridge No. B-01-012 (4AP) and Bridge No. B-01-014 (4AN) in Barnstable.

Drilling and grouting dowels shall be performed on the west and east barriers to all the new barrier to tie into the exiting bridge frame which includes gravel or flow fill.

Furnishing and constructing new Protective Screen Type II for Bridge No. B-01-012 (4AP) and No. Bridge B-01-014 (4AN) to the limits shown on the Contract drawings.

**ITEMS 992.11 and 992.12** (Continued)

The work under Items 992.11 and 992.12 shall include all materials, equipment and labor needed to construct the following:

- Precast Highway Guardrail Transition
- 5000 PSI  $\frac{3}{4}$  Inch, 685 HP Cement Concrete for construction on CP-MTL3 Barrier
- Steel Reinforcement for Structures – (Epoxy Coated)
- Drilling and Grouting Dowels
- Protective Screen Type II

The work does not include any items listed separately in the proposal. Payment for materials shown on the Contract drawings as being part of this bridge structure or which may be incidental to its construction and are not specifically included for payment under another Item shall be considered incidental to the work performed under Item 992.11 and Item 992.12 and shall be included in the unit price of the component of which they are a part.

**PRECAST HIGHWAY GUARDRAIL TRANSITION****General.**

The work under this Heading consists of fabricating, transporting and installing precast highway guardrail transitions and includes all necessary labor, materials, and equipment to complete the work as shown on the Contract drawings. The work shall conform with the MassDOT Standard, Supplemental, and Interim Specifications and the requirements of the current AASHTO LRFD Bridge Construction Specifications, supplemented by the current relevant provisions of the latest edition of PCI MNL-116 (The Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products), except as noted herein.

**QUALITY ASSURANCE****A. General.**

Quality Assurance includes all the planned and systematic actions necessary to provide confidence that a product or facility will perform satisfactorily in service. It is an all-encompassing term that includes Quality Control (performed by the Fabricator) and Acceptance (performed by MassDOT). Quality Control is the system used by the Contractor and Fabricator to monitor and assess their production processes at the plant facility and installation activities at the project site to ensure that the final product will meet the specified level of quality.

**ITEMS 992.11 and 992.12** (Continued)

Acceptance includes all factors used by MassDOT to determine the corresponding value for the product. MassDOT Acceptance inspection at the plant facility is intended as a means of evaluation of compliance with contract requirements. Contractor and Fabricator Quality Control activities and MassDOT Acceptance activities shall remain independent from one another. MassDOT Acceptance activities shall not replace Fabricator Quality Control activities.

**B. Fabricator Quality Control.**

Quality Control shall be performed by the Fabricator to ensure that the product is fabricated in conformance with the specifications herein. The Fabricator shall maintain a Quality Control system to monitor, assess, and adjust placement and fabrication processes to ensure the Precast Concrete Bridge Element(s) meet the specified level of quality, through sufficient Quality Control sampling, testing, inspection, and corrective action (where required). The Fabricator's Quality Control system shall address all key activities during the placement and fabrication and shall be performed in conformance with the Fabricator's NPCA or PCI Certification. Quality Control documentation shall meet the requirements of the *Fabricator Quality Control-Documentation* section below. Upon request, Fabricator Quality Control shall be provided to the MassDOT Plant Inspector.

**1. Plant.**

Prior to the fabrication of Precast Concrete Bridge Elements, the Fabricator's precast concrete plant shall obtain the following:

- (a) Certification by the National Precast Concrete Association (NPCA) Plant Certification Program or Precast/Prestressed Concrete Institute (PCI) Plant Certification Program, for the applicable types of Precast Concrete Bridge Element(s) being fabricated
- (b) MassDOT Prequalification
- (c) MassDOT Mix Design Approval

All concrete for a given Precast Concrete Bridge Element shall be produced by a single company and plant, unless otherwise approved by the Engineer.

**2. Personnel.**

The Fabricator shall provide adequate training for all QC personnel in accordance with NPCA or PCI certification. There shall be sufficient personnel trained and certified to perform the tests listed under Subsection M4.02.13, Part D. At a minimum, the Fabricator's Quality Control Personnel shall maintain the following qualifications and certifications:

- (a) QC Manager with an active NETTCP Field Technician or ACI Concrete Field Testing Technician - Grade I certification or higher, and a minimum of 4 years continuous experience in the manufacture of Precast Concrete Bridge Elements for state transportation departments. The QC Manager shall be on site while the batch plant is producing and placing concrete for MassDOT projects.

**ITEMS 992.11 and 992.12** (Continued)

- (b) A Technician/Inspector having the Precast/Prestressed Concrete Institute (PCI) Technician/Inspector Level I or NorthEast Transportation Training and Certification Program (NETTCP) Precast Concrete Inspector, or higher.

The Contractor shall submit to the Engineer a copy of the Fabricator's Quality Control Personnel required qualifications, as specified above.

**3. Laboratory.**

The Fabricator shall provide a room of sufficient size to house all equipment and to adequately perform all testing. The room shall have either a separate moisture storage room or curing box for concrete shall be thermostatically controlled to maintain temperatures consistent with AASHTO include a desk and file cabinet for proper record keeping, and have good lighting and a room shall be kept for testing and quality control and not used for any other purpose. An additional desk and file cabinet shall be provided for exclusive use of the Engineer. No exception from these requirements will be allowed without the express written permission of the Engineer.

**4. Testing Equipment.**

At a minimum, the Fabricator's plant facility shall have the following testing equipment:

- (a) Air Content Meter Type A or B: AASHTO T 152
- (b) Air Content Meter Volumetric Method: AASHTO T 196 (Required for Lightweight Concrete)
- (c) Slump Cone: AASHTO T 119
- (d) Cylinder Molds AASHTO M 205
- (e) Concrete Testing Machine: AASHTO T 22
- (f) Screening Sieve: AASHTO T 27, AASHTO T 11
- (g) Curing Box: AASHTO T 23
- (h) Spread Test Base Plate for Self-Consolidating Concrete (SCC): ASTM C1611
- (i) All other equipment prescribed by AASHTO and ASTM standards for the tests to be performed by the Fabricator as specified

**5. Inspection.**

Quality Control personnel shall monitor and inspect the fabrication of each Precast Concrete Bridge unit. Quality Control personnel shall report all inspection activities on Quality Control Inspection Reports and non-conformances on Non-Conformance Reports (NCRs) throughout the entire fabrication process, as specified herein.

**ITEMS 992.11 and 992.12** (Continued)**6. Temperature Monitoring.**

At a minimum, the Fabricator shall monitor, record, and report the temperatures of the form, ambient temperatures surrounding the concrete, and temperatures of the concrete continuously, without interruption as specified below:

- (a) Prior to placement of concrete to verify that  $T_i \geq 50^\circ\text{F}$ .
- (b) Immediately after placement to verify that  $T_i \geq 50^\circ\text{F}$  is maintained.
- (c) Throughout the entire duration of the curing cycle, at regular intervals not to exceed one hour until 100% Design Strength ( $f_c$ ) is attained and concrete has cooled to within  $40^\circ\text{F}$  of the ambient temperature surrounding the Precast Concrete Bridge Element.

At a minimum, the temperature measuring devices shall record and report the temperature of the concrete to the nearest  $2^\circ\text{F}$ . At least two temperature sensors (thermocouples) shall be positioned to record the maximum and minimum anticipated concrete temperatures. The anticipated minimum temperature shall be measured with one or more thermocouples at a distance no greater than 2 inches from the surface of the thinnest section. The anticipated maximum temperature shall be measured with one or more thermocouples at the center of the thickest section. Proposed temperature measurement locations shall be submitted to the Engineer for approval. Temperature recording devices shall be located within the curing enclosure and calibrated as required by PCI MNL-116 Section 4.18.4. Maximum heat increase and cool down rates shall comply with PCI MNL-116, Section 4.19. The Contractor shall furnish  $s$  recorded at a minimum frequency of once per hour to the Inspector as required, with each post-pour QC inspection report.

**7. Sampling and Testing.**

At a minimum, the Fabricator shall perform random Quality Control sampling and testing as specified in *Table I: Quality Control Sampling and Testing*. The Fabricator shall perform additional Quality Control sampling and testing on concrete that has been retempered with admixtures or hold-back water during fabrication. Test Specimens shall conform to the requirements of Section M4.02.13 of the MassDOT Standard and Supplemental Specifications and AASHTO R 60, with the exception of the Stripping (80%  $f_c$ ) set of cylinders. Stripping (80 %  $f_c$ ) cylinders shall be cured in the same location and environment as the Precast Bridge Elements they represent. If approved by the Engineer, compressive strength cylinder match curing equipment, that maintains the same concrete conditions that the corresponding Precast Bridge Element is exposed to, may be utilized in lieu of Stripping (80 %  $f_c$ ) field cured cylinders, with the use of thermocouples, controllers, and heaters.

**ITEMS 992.11 and 992.12** (Continued)**Table 1: Quality Control Sampling and Testing**

Quality Characteristic	Test Method	Sample Size	Specification Limit	Lot Size (c)	Sublot Size (d)	Frequency	Point of Sampling
Slump (in.) <sup>(a)</sup>	AASHTO T 119	Per AASHTO	≤ 8 in. or as approved by the Engineer	Total Quantity of Concrete (cy) produced on a Contract, per Type of Element fabricated, per Mix Design	20cy	One (1) per Sublot or fraction thereof	Point of Discharge
Air Content (%)	AASHTO T 152	Per AASHTO	5% ≤ % ≤ 8%				
Temperature (°F)	AASHTO T309	Per AASHTO	50°F ≤ °F ≤ 90°F				
Compressive Strength (psi)	AASHTO T22	Stripping Cylinders: One (1) set of Three (3) 4 x 8 in.	≥ 80% f <sub>c</sub> at Stripping				
		7-day Cylinders: One (1) set of Three (3) 4 x 8 in.	For Information at 7 days				
		28-day Cylinders: One (1) set of Three (3) 4 x 8 in.	≥ 100% f <sub>c</sub> at 28 days				
		56-day Cylinders: One (1) set Of Three (3) 4 x 8 in.	≥ 100% f <sub>c</sub> at 28 days				

**Notes:**

- (a) Self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.
- (b) 56-day Compressive Strength test specimens shall require testing only when 28-day Compressive Strength test specimens have failed to meet Design Strength (f<sub>c</sub>).
- (c) Lot shall be defined as a specific quantity of material from a single source, produced or placed by the same controlled process.
- (d) Sublot shall be defined as an equal division or part of a Lot from which a sample of material is obtained in order to assess the Quality Characteristics of the Lot.

**8. Certificate of Compliance.**

The Fabricator shall provide a Certificate of Compliance in accordance with Standard Specifications, Division I, Section 6.01, stating that QC test cylinders have achieved the design strength, f<sub>c</sub>. A Certificate of Compliance shall accompany each shipment and shall be presented to the MassDOT Resident Engineer or designee upon delivery to the site.

**ITEMS 992.11 and 992.12** (Continued)**9. Documentation.**

At a minimum, the Fabricator shall maintain a filing system for the following QC records and documentation. All QC records and documentation shall be made available to MassDOT upon the request of the Department.

- (a) Current MassDOT Approved Mix Design Sheet(s) and Approval Letter(s)
- (b) PCI or NPCA Certification
- (c) Current Qualifications and Certifications for QC Manager(s) and QC Technician(s)
- (d) Most current set of Approved Shop Drawings
- (e) Approved Placement, Finishing and Curing Plan
- (f) Approved Dunnage Plan
- (g) Fabricator Certificate of Compliance for each fabricated Precast Concrete Bridge Element
- (h) Admixture Manufacturer's Certification of Compliance for each approved Admixture
- (i) Completed QC Inspection Report for each fabricated Precast Concrete Bridge Element
- (j) Identification Number for each fabricated Precast Concrete Bridge Element
- (k) Time and date of casting of each fabricated Precast Concrete Bridge Element
- (l) Date of stripping of each fabricated Precast Concrete Bridge Element
- (m) Batch Ticket Printout reporting the quantity of concrete produced for each batch of concrete produced
- (n) Concrete temperature records for each Precast Concrete Bridge Element fabricated
- (o) QC Test Report Forms for each subplot of concrete produced
- (p) Non-Conformance Reports (NCRs)
- (q) Documentation of Repairs (if applicable)

**C. Acceptance.**

MassDOT will perform Acceptance inspection, sampling, and testing during fabrication and installation, to evaluate the quality and degree of compliance of the fabricated Precast Concrete Bridge Element to MassDOT specifications. Additionally, MassDOT Inspectors will monitor the Fabricator's Quality Control activities to ensure the Fabricator is properly administering Quality Control in conformance with the Fabricator's NPCA or PCI Certification. Acceptance inspection and test results not meeting MassDOT specifications will result in Non-conformance Reports (NCR) being issued by MassDOT to the Fabricator or Contractor for corrective action. Final Acceptance for the fabricated Precast Concrete Bridge Elements shall be determined by MassDOT

**ITEMS 992.11 and 992.12** (Continued)**1. Inspection.**

A MassDOT Inspector will be assigned to perform Acceptance activities during fabrication, which includes the inspection of the materials, work procedures, and Precast Concrete Bridge east seven (7) days prior to the scheduled start of fabrication, the Fabricator shall contact Research and Materials Section (RMS) to provide notice of the scheduled fabrication start date. The Fabricator shall complete the following activities prior to notifying MassDOT RMS of the scheduled start date:

- (a) Receive approval for all submitted Fabricator cement concrete mix designs from the MassDOT Research and Materials Section for the current year, as specified under the Mix Design section and Table 3: Trial Batch Sampling Testing for New Mix Designs. Self-consolidating concrete shall meet the requirements of M4.02.17.
- (b) Receive approval for the submitted Fabricator Placement, Finishing, and Curing Plan from the MassDOT Research and Materials Section, as specified under the Placement, Finishing, and Curing Plan section.
- (c) Receive Engineer of Record approved shop drawings from the MassDOT Research and Materials Section as specified under the Shop Drawings section.
- (d) Participate in the pre-production meeting, as described under the Pre-Production Meeting section (if required).

Prior to the start of fabrication, the Fabricator shall review the fabrication schedule with the MassDOT Inspector. Fabrication shall only proceed when:

- (a) The QC Inspector and MassDOT Inspector are present to inspect the Precast Concrete Bridge Element(s) being fabricated.
- (b) The QC Manager is present at the Fabricator's plant.

The Fabricator shall grant access to all required areas of the Fabricator's plant to the MassDOT Inspector, during the hours of fabrication. Fabrication without MassDOT Inspector access to required areas is prohibited, and will result in the rejection of the fabricated Precast Concrete Bridge Element(s).

Additionally, the MassDOT Inspector will monitor the adequacy of the Fabricator's Quality Control activities. MassDOT Inspector Acceptance activities performed at the Fabricator's plant shall remain in the Fabricator, and does not replace the Fabricator's required Quality Control activities.

**2. Sampling and Testing.**

At a minimum, the MassDOT Inspector will perform random Acceptance sampling and testing for concrete produced as specified in *Table 2: Acceptance Sampling and Testing*. The MassDOT Inspector will also perform Acceptance sampling and testing on concrete that has been retempered with admixtures or hold-back water during production. Test Specimens will conform to the requirements of Section M4.02.13 of the MassDOT Standard and Supplemental Specifications and AASHTOR60.



**ITEMS 992.11 and 992.12** (Continued)**Table 2: Acceptance Sampling and Testing**

Quality Characteristic	Test Method	Sample Size	Specification Limit	Lot Size (c)	Sublot Size (d)	Frequency	Point of Sampling
Slump (in.) <sup>(a)</sup>	AASHTO T 119	Per AASHTO	$\leq 8$ in. or as approved by the Engineer	Total Quantity of Concrete (cy) produced on a Contract, per Type of Element fabricated, per Mix Design	20cy	One (1) per Sublot or fraction thereof	Point of Discharge
Air Content (%)	AASHTO T 152	Per AASHTO	$5\% \leq \% \leq 8\%$				
Temperature (°F)	AASHTO T309	Per AASHTO	$50^{\circ}\text{F} \leq ^{\circ}\text{F} \leq 90^{\circ}\text{F}$				
Compressive Strength (psi)	AASHTO T22	7-day Cylinders: One (1) set of Three (3) 4 x 8 in.	For Information at 7 days				
	AASHTO T23	28-day Cylinders: One (1) set of Three (3) 4 x 8 in.	$\geq 100\% f'_c$ at 28 days				
		56-day Cylinders: One (1) set Of Three (3) 4 x 8 in.	$\geq 100\% f'_c$ at 56 days <sup>(b)</sup>				

**Notes:**

- (a) Self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.
- (b) 56-day Compressive Strength test specimens shall require testing only when 28-day Compressive Strength test specimens have failed to meet Design Strength (f c).
- (c) Lot shall be defined as a specific quantity of material from a single source, produced or placed by the same controlled process.
- (d) Sublot shall be defined as an equal division or part of a Lot from which a sample of material is obtained in order to assess the Quality Characteristics of the Lot.

**ITEMS 992.11 and 992.12 (Continued)****MATERIALS**

Materials.

Materials shall meet the following specifications (if applicable):

General	M4.00.00
Portland Cement	M4.01.0
Blended Hydraulic Cements	M4.01.1
Fly Ash	M4.01.2
Cement Concrete	M4.02.00
Cement	M4.02.01
Cement Mortar	M4.02.15
Aggregates	M4.02.02
Lightweight Aggregates	M4.02.03
Water	M4.02.04
Cement Concrete Additives	M4.02.05
Proportioning	M4.02.06
Mixing and Delivery	M4.02.10
Test Specimens	M4.02.13
Mortar for Filling Keyways	M4.04.0
Slag	AASHTO M 302
High Performance Cement Concrete	M4.06.1
Self-Consolidating Concrete (SCC)	M4.02.17
Controlled Density Fill – Non-Excavatable	M4.08.0
Reinforcing Bars	M8.01.0
Epoxy Coated Reinforcing Bars	M8.01.7
Galvanized Reinforcing Bars	M8.01.8
Welded Wire Reinforcement	M8.01.2
Mechanical Reinforcing Bar Splicer	M8.01.9
Lifting Devices	PCI MNL-116
Corrugated Metal Pipe	AASHTO M 36

**1. Cement Concrete Mix Design.**

The cement concrete shall be comprised of specified proportions of water and MassDOT approved aggregates, cement, supplementary cementitious materials (SCMs), and admixtures to form a homogenous composition. Cement concrete for Precast Concrete Bridge Elements shall meet the requirements of M4.06.1 High Performance Cement Concrete, with the exception that the “Total Cementitious Content” specified shall be considered the “Maximum Allowable Cementitious Content”. When used, self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.

Prior to production of cement concrete, the Fabricator shall report and submit all proposed mix design formulations and its constituent materials onto the MassDOT Cement Concrete Mix Design Sheet to the MassDOT Research and Materials Section for review and approval. All mix design yields shall be designed for 1.0 cubic yards of concrete, with an allowable tolerance of +/- 1.0 %. All liquids incorporated into the proposed mix design(s) shall include both water and admixtures in the liquid mass calculation.

**ITEMS 992.11 and 992.12 (Continued)**

During production of cement concrete, the Fabricator shall not alter the previously approved mix design formulation or its constituent materials. Proposed alterations in source, type, batch quantity, or gradation to any of the constituent materials of the previously approved mix design formulation shall require a new MassDOT Mix Design Sheet submission to the MassDOT Research and materials Section for review and approval. Fabrication shall not occur without prior MassDOT mix design approval.

The Fabricator shall notify MassDOT RMS to schedule trial batch testing for the new mix design(s). Trial batch testing shall meet the following requirements:

- (a) Performed by a qualified laboratory and/or AASHTO accredited laboratory.
- (b) Performed and/or sampled in the presence of a MassDOT Inspector.
- (c) Meet the requirements as specified in *Table 3: Trial Batch Sampling Testing for New Mix Designs*. Self-consolidating concrete (SCC) shall meet M4.02.17.

Failure to perform all of the required trial batch testing or provide MassDOT RMS trial batch test results within the Specification Limits (as specified in Table 3) will result in the disqualification of the Fabricator's proposed mix design(s).

**Table 3: Trial Batch Sampling and Testing for New Mix Designs**

Quality Characteristic	Test Method	Sample Size	Specification Limit	Performed By
Slump <sup>(a)</sup>	AASHTO T 119	Per AASHTO	Max. 8 inches or as approved by the Engineer	Quality Control
Air Content (AC)	AASHTO T 152	Per AASHTO	$5\% \leq AC \leq 8\%$	Quality Control
Temperature (°F)	AASHTO T 309	Per AASHTO	$50^{\circ}\text{F} \leq ^{\circ}\text{F} \leq 90^{\circ}\text{F}$	Quality Control
Compressive Strength <sup>(b)</sup>	AASHTO T 22 AASHTO T 23	28-day Cylinders: One (1) set of Three (3) 4 x 8 in.	Lab Mixed $f'_{cr} = 1.3 f'_c$ at 28 days	MassDOT
			Batch Mixed $f'_{cr} = 1.2 f'_c$ at 28 days	
Alkali-Silica Reaction (ASR) <sup>(d)</sup>	ASTM C 1567	Per ASTM	M4.02.00	Quality Control
Resistance to Chloride Ion Penetration Chloride Ion Penetration <sup>(e)</sup>	AASHTO T 358 <sup>(f)</sup>	28-day Cylinders: One (1) set of Three (3) 4 x 8 in.	Resistivity $\geq 21$ k $\Omega$ -cm at 28 days	MassDOT
Freeze/Thaw Durability <sup>(c)</sup>	AASHTO T 161 (Procedure A)	Per AASHTO	Relative Dynamic Modulus of Elasticity after 300 cycles $\geq 80\%$	Quality Control

**ITEMS 992.11 and 992.12** (Continued)**Notes:**

1. Self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.
2. Trial batch compressive strength testing shall be performed by MassDOT. Laboratory mixed trial batch compressive strength results shall achieve 130% Design Strength ( $f'_c$ ). Batch-mixed trial batch compressive results shall achieve 120%  $f'_c$ . Acceptance will be based on compressive strength testing performed by MassDOT.
3. If an AASHTO accredited laboratory is preparing the trial batch test specimens, MassDOT Acceptance presence is not required. If the Fabricator is preparing the trial batch test specimens, MassDOT Acceptance presence is required during trial batch test specimen preparation.
4. Alkali Silica Reaction (ASR) testing shall meet the requirements of M4.02.00. Independent laboratories performing ASR testing shall be listed on the MassDOT Quality Construction Materials List (QCML).
5. Calcium nitrite shall be removed from mix designs containing the admixture and replaced by an equivalent quantity of water when preparing Chloride Ion Penetration resistance trial batch test specimens.
6. The Wenner probe tip spacing "a" shall be 1.5.

**2. Vertical Adjustment Assembly.**

Vertical Adjustment Assembly details and material requirements shall be as shown on the plans. Alternate devices may be used provided that they are adjustable and can support the anticipated loads. The design of the leveling devices, with necessary calculations, shall be submitted to the Engineer of Record for approval.

**3. Grout.**

Grout used for shear keys, vertical adjustment assembly voids, and hand holes shall be in accordance with M4.04.0.

**4. Reinforcement.**

All reinforcing steel shall be coated Grade 60 unless otherwise noted on the plans. Mechanical reinforcing bar splicers shall be epoxy coated.

**5. Threaded Inserts.**

Threaded inserts are permissible to facilitate forming the keyway pours. Threaded inserts shall be hot dip galvanized or made of stainless steel. The number of threaded inserts shall be minimized, and the inserts shall not come in contact with the reinforcing steel.

**6. Corrugated Metal Pipe.**

Corrugated Metal Pipe to be used for forming voids as specified on the plans shall be fabricated from steel and shall have a protective metallic coating of zinc (galvanizing).

**ITEMS 992.11 and 992.12** (Continued)**CONSTRUCTION METHODS – PLANT FABRICATION****A. Shop Drawings.**

Prior to performing any work under this Section, the Contractor shall receive approval for all shop drawings for the Precast Concrete Bridge Element being worked on and any special Contract requirements, provided that a complete shop drawing package is provided. The Contractor shall not order materials or begin work before receiving approved shop drawings. MassDOT will reject Precast Concrete Bridge Elements that deviate from the approved drawings or are fabricated prior to receiving written approval of the shop drawings. The Contractor shall bear full responsibility and costs for all materials ordered or work performed prior to the approval of the shop drawings or written authorization from MassDOT.

Contractor shall submit scaled shop drawings to the Engineer of Record for review and approval. Upon approval, the Engineer of Record will forward two (2) sets of scaled, full size (minimum 24x36") paper copies of the Approved (or Approved As Noted) shop drawings to the MassDOT Director of Research and Materials. Calculations are not to be included in any submittal to the Research and Materials Section. An approval stamp shall appear on every shop drawing sheet. Wet-stamping or wet-signing is not required, provided that the stamp and reviewer name are legible. The Fabricator's name and address shall appear on each sheet.

Resubmittal of "Approved as Noted" shop drawings is not necessary for minor revisions, provided that the correction can be clearly understood and is unambiguous without possibility of misinterpretation. Shop drawings with questions or comments that require a response and/or additional information from the Fabricator must be resubmitted.

Detailed shop drawings shall be prepared in accordance with the relevant provisions of Subsection 5.02 and shall, at a minimum, contain the following:

- (a) Number and type and/or piece mark of the precast concrete bridge element including overall length, width and height.
- (b) Skew angle.
- (c) Location, size and geometry of all steel reinforcement, including mechanical reinforcing bar splicers to be used for connecting Precast Concrete Bridge Elements together in the field.
- (d) Location and details of all inserts, anchors, Vertical Adjustment Assemblies, and any other items required to be cast into the Precast Concrete Bridge Elements (whether detailed on the plans by the Engineer of Record or provided for the Contractor's convenience). Precast Concrete Bridge Elements shall not be fired or drilled into for attachment purposes. All hardware shall be galvanized except as noted.
- (e) Locations and details of the lifting devices, including supporting calculations, type and amount of any additional reinforcing required for lifting. The Fabricator shall design all lifting devices based on the no cracking criteria in Chapter 8 of the PCI Design Handbook (7<sup>th</sup> edition).
- (f) The minimum compressive strength required prior to handling the precast concrete bridge element.

The shop drawings shall not include procedures for placement, finishing, and curing of concrete. These details shall be included in the Placement, Finishing and Curing Plan that is to be submitted to MassDOT Research and Materials Section as described under *Placement, Finishing, and Curing Plan*.

**ITEMS 992.11 and 992.12** (Continued)**B. Fabrication.**

All Precast Concrete Bridge Elements shall be fabricated in accordance with the latest edition of PCI MNL-116 as modified herein.

**C. Placement, Finishing and Curing Plan.**

At least 30 days prior to start of fabrication, the Contractor shall submit the Fabricator's proposed Placement, Finishing and Curing Plan to the Engineer for approval by MassDOT Research and Materials Section. This shall be an independent submittal, separate from the fabrication shop drawings. The Placement, Finishing and Curing Plan shall include the following:

- (a) Method of Mixing
- (b) Method of Placement
- (c) Method of Consolidation
- (d) Method of Finishing
- (e) Method of Initial Curing
- (f) Method of Intermediate Curing
- (g) Method of Final Curing
- (h) Moisture Retention Materials and Equipment (water spray equipment, saturated covers, sheet materials, liquid membrane-forming compounds, accelerated curing equipment, etc.)
- (i) Cylinder Curing Methods, Location, and Environmental Control (temperature, humidity, etc.)
- (j) Temperature Monitoring, Recording, and Reporting

**D. Dunnage Plan Shop Drawings.**

At least 30 days prior to the start of fabrication, the Contractor shall submit proposed Dunnage Plan Shop Drawings to the Engineer of Record for review and approval. This shall be an independent submittal, separate from the fabrication shop drawings. Upon approval, the Engineer of Record will forward two (2) sets of scaled, full size (minimum 24"x36") paper copies of the Approved (or Approved As Noted) Dunnage Plan to the MassDOT Director of Research and Materials. Calculations are not to be included in any submittal to the Research and Materials Section. The Dunnage Plan shall include the following:

- (a) Proposed layout of the Precast Concrete Bridge Elements for storage in yard and during shipping
- (b) Support and blocking point locations
- (c) Support and blocking materials

**E. Pre-Production Meeting.**

The Contractor shall notify the MassDOT Research and Materials Section to determine if a pre-production meeting will be required to review the specification, shop drawings, curing plan, schedule, and discuss any specific requirements. The meeting shall be held prior to scheduling a MassDOT Inspector (refer to Section *Quality Assurance – Precast Concrete, C. Acceptance, A. Inspection*), and at least seven (7) days prior to the scheduled casting of any Precast Concrete Bridge Element or control section. The Contractor shall schedule the meeting, which shall include representatives of the Fabricator and MassDOT.

**ITEMS 992.11 and 992.12** (Continued)**F. Reinforcement.**

The reinforcing bars shall be installed in accordance with Section 901.62 of the Supplemental Specifications, including tolerances for cover and horizontal spacing of bars. Components of mechanical reinforcing bar splicers shall be set with the tolerances shown on the plans. The reinforcing bars and mechanical reinforcing bar splicers shall be assembled into a rigid cage that will maintain its shape in the form and which will not allow individual reinforcing bars to move during the placement of concrete. This cage shall be secured in the form so that the clearances to all faces of the concrete, as shown on the plans, shall be maintained.

Where reinforcing bars are to protrude from one Precast Concrete Bridge Element in order to mate with reinforcing bar splicers in a second precast concrete element, the fabricator shall set the reinforcing bars and the reinforcing bar splicers with a template in order to ensure proper fit up within the tolerances specified on the plans.

**G. Tolerances.**

Fabrication shall comply with tolerances specified on the plans. Tolerances for steel reinforcement placement shall be in accordance with 901.62. In the absence of specifications on the plans, tolerances shall comply with the latest version of the PCI MNL 135, Precast Tolerance Manual.

**H. Forms.**

Concrete shall be cast in rigidly constructed forms, which will maintain the Precast Concrete Bridge Elements within specified tolerances to the shapes, lines and dimensions shown on the approved fabrication drawings. Forms shall be constructed from flat, smooth, non-absorbent material and shall be sufficiently tight to prevent the leakage of the plastic concrete. When wood forms are used, all faces in contact with the concrete shall be laminated or coated with a non-absorbent material. All worn or damaged forms, which cause irregularities on the concrete surface or damage to the concrete during form removal, shall be repaired or replaced before being reused. Any defects or damage of more than "Category 2, Minor Defects" made to the concrete, due to form work, stripping or handling, shall be subject to repair or rejection, as defined in the *Repairs and Replacement* section. If threaded inserts are cast into the elements for support of formwork, the inserts shall be recessed a minimum of 1 inch and shall be plugged after use with a grout of the same color as that of the precast cement concrete.

**I. Mixing of Concrete.**

The concrete shall be proportioned and mixed in conformance with the Fabricator's MassDOT approved mix design and M4.02.10 Mixing and Delivery Fabrication shall not occur without prior MassDOT mix design approval. The Fabricator shall provide copies of batch tickets to the MassDOT Plant Inspector. The MassDOT Plant Inspector will verify if the batch ticket quantities are within the tolerances of the Fabricator's MassDOT approved mix design.

**ITEMS 992.11 and 992.12** (Continued)**J. Placement of Concrete.**

Prior to the placement of concrete, the temperature of the forms shall be greater than or equal to 50°F. Quality Control inspection shall be performed by the Fabricator as specified in the *Fabricator Quality Control* section. Placement of the concrete shall not proceed until the MassDOT Plant Inspector is present to perform inspection and begin monitoring Fabricator Quality Control inspection activities, and is in compliance with specifications. The MassDOT Plant Inspector shall inspect and accept the placement of the reinforcing steel prior to the placement of concrete into the forms. The Fabricator shall verify all materials and equipment required for protecting and curing the concrete are readily available and meet the requirements of the *Final Curing Methods* section below. All items encased in the concrete shall be accurately placed in the position shown on the Plans and firmly held during the placing and setting of the concrete. Clearance from the forms shall be maintained by supports, spacers, or hangers and shall be of approved shape and dimension.

During placement, the concrete shall maintain a concrete temperature range between 50°F and 90°F. The Fabricator shall minimize the time to concrete placement (measured from start of mixing to completion of placement). In no event shall time to placement exceed 90 minutes. The Fabricator shall perform additional Quality Control sampling and testing on concrete that has been retempered with admixtures or hold-back water during the placement of the concrete as specified in the *Fabricator Quality Control* section above. Delays or shutdowns of over 30 minutes shall not be allowed during the continuous filling of individual forms.

**K. Consolidation of Concrete.**

Suitable means shall be used for placing concrete to prevent segregation or displacement of reinforcing steel or forms. The concrete shall be thoroughly consolidated by external or internal vibrators or a combination of both. Vibrators shall not be used to move concrete within the forms. Vibrators shall be used as specified in 901.63C and as directed by the Engineer. Concrete shall be placed and consolidated in a way that minimizes the presence of surface voids or bug holes on the formed surfaces. When used, self-consolidating concrete (SCC) shall meet the requirements of M4.02.17.

**L. Finishing of Concrete.**

The finish of the Precast Concrete Bridge Elements shall be as indicated on the plans. Where Precast Concrete Bridge Elements have keyways for grout or closure pours, the surfaces of these shear keys shall be abrasive blasted prior to shipment. The Fabricator may utilize a surface retarder with water blast, sandblast, or a combination of both to achieve the desired keyway finish. At a minimum, the profile of the keyway surfaces shall be similar to that of 60 grit sand paper. The exposed reinforcing steel in the precast slab shall be protected from damage during the cleaning of the keyways. Damaged epoxy coating of steel reinforcement shall be repaired, and the reinforcing steel shall be cleaned as directed by the Engineer.

The Fabricator shall permanently mark each precast concrete bridge element with its type and/or piece mark, date of casting, and supplier identification either by stamp markings in fresh concrete, waterproof paint, or other approved means on a surface that will not be exposed after assembly.



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**ITEMS 992.11 and 992.12** (Continued)**M. Exposed Surfaces of Precast Concrete Bridge Elements.**

As soon as conditions permit, before the concrete has fully hardened, all dirt, laitance, and loose aggregate shall be removed from the exposed concrete surfaces. Contractor shall not allow foot traffic on the uncured concrete until it has reached sufficient strength to prevent damage.

**N. Initial Curing Methods.**

After the placement of concrete and prior to concrete finishing, the Fabricator shall initiate initial curing methods when the concrete surface begins to dry, to reduce moisture loss from the surface. Application of one or more of the following initial curing methods shall occur immediately after the bleed water sheen has disappeared.

**1. Fogging.**

Fogging nozzles shall atomize water into a fog-like mist. The fog spray shall be directed and remain visibly suspended above the concrete surface, to increase the humidity of the air and reduce the rate of evaporation. Water from fogging shall not be worked into the surface during finishing operations and shall be removed or allowed to evaporate prior to finishing.

**2. Liquid-applied Evaporation Reducers**

Evaporation reducers shall be sprayed onto the freshly placed concrete surface to produce an effective monomolecular film that reduces the risk of plastic-shrinkage cracking and rate of evaporation of the bleed water from the concrete surface. Evaporation reducers shall be applied in accordance with manufacturer's recommendations.

**O. Intermediate Curing Methods.**

The Fabricator shall initiate intermediate curing methods if concrete finishing has taken place prior to the concrete reaching final set. The freshly finished concrete surface shall be protected from moisture loss, by the continuation of initial curing methods (fogging and evaporation reducers) until final curing methods are applied or by the use of liquid membrane-forming curing compounds (see *Liquid Membrane-Forming Compounds for Curing* section).

**ITEMS 992.11 and 992.12 (Continued)****P. Final Curing Methods.**

The Fabricator shall initiate and apply final curing methods to the concrete immediately after the following conditions are met:

- (a) Completion of concrete finishing
- (b) Final set of concrete
- (c) Concrete has hardened sufficiently enough to prevent surface damage

During fabrication of Precast Concrete Bridge Elements, the Fabricator shall maintain the required concrete temperature ranges throughout the entire duration of the final curing method cycle as specified herein. Controlled and gradual termination of the final curing method shall occur after all specified conditions are met. The concrete temperature shall be reduced at a rate not to exceed 36°F per hour until the concrete temperature is within 20°F of the ambient temperature outside of the final curing method enclosure. The Fabricator shall maintain a minimum concrete temperature of 40°F until 100% f<sub>c</sub> is attained (see *Handling and Storage* section below).

**1. Water Spray Curing.**

All exposed concrete surfaces shall remain moist with a continuous fine spray of water throughout the entire duration of the final curing method cycle (see *Table 4: Final Curing Method Cycle for Water Spray*).

**Table 4: Final Curing Method Cycle for Water Spray**

Sustained Concrete Temperature	Final Curing Method Cycle Duration	Compressive Strength
50°F ≤ °F ≤ 90°F	≥ Five (5) days	≥ 80% f <sub>c</sub>

**2. Saturated Covers for Curing.**

All exposed concrete surfaces shall remain moist with a continuous application of saturated covers throughout the entire duration of the final curing method cycle (see *Table 5: Final Curing Method Cycle for Saturated Covers*). Saturated covers shall be allowed to dry thoroughly before removal to provide uniform, slow drying of the concrete surface.

**Table 5: Final Curing Method Cycle for Saturated Covers**

Sustained Concrete Temperature	Final Curing Method Cycle Duration	Compressive Strength
50°F ≤ °F ≤ 90°F	≥ Three (3) days	≥ 80% f <sub>c</sub>

## **ITEMS 992.11 and 992.12** (Continued)

Saturated covers, such as burlap, cotton mats, and other coverings of absorbent materials shall meet the requirements of AASHTO M 182, Class 3. Saturated covers shall be in good condition, free from holes, tears, or other defects that would render it unsuitable for curing concrete. Saturated covers shall be dried to prevent mildew when storing. Prior to application, saturated covers shall be thoroughly rinsed in water and free of harmful substances that are deleterious or cause discoloration to the concrete. Saturated covers shall have sufficient thickness and proper positioning onto the concrete surface to maximize moisture retention.

Saturated covers shall contain a sufficient amount of moisture to prevent moisture loss from the surface of the concrete. Saturated covers shall be kept continuously moist so that a film of water remains on the concrete surface throughout the entire duration of the final curing method cycle. The Fabricator shall not permit the saturated covers to dry and absorb water from the concrete. Use of polyethylene film (see *Polyethylene Film* section) may be applied over the saturated cover to potentially decrease the need for continuous watering.

### **3. Sheet Materials for Curing.**

All exposed concrete surfaces shall remain moist with a continuous application of curing sheet materials throughout the entire duration of the final curing method cycle (see *Table 6: Final Curing Method Cycle for Curing Sheet Materials*).

**Table 6: Final Curing Method Cycle for Sheet Materials**

Sustained Concrete Temperature	Final Curing Method Cycle Duration	Compressive Strength
50°F ≤ °F ≤ 90°F	≥ Three (3) days	≥ 80% f <sub>c</sub>

Sheet Materials used for curing, such as polyethylene film, white burlap-polyethylene sheeting, and reinforced paper shall meet the requirements of ASTM C171 and the specifications herein. Sheet materials shall inhibit moisture loss and reduce temperature rise in concrete exposed to radiation from the sun during the final curing method cycle. Adjoining covers shall overlap not less than 12 inches. All edges of the covers shall be secured to maintain a moist environment.

#### **(a) Polyethylene Film.**

Polyethylene film shall meet the requirements of ASTM C171, consist of a single sheet manufactured from polyethylene resins, be free of visible defects, and have a uniform appearance. Careful considerations shall be taken by the Fabricator to prevent the film from tearing during storage and application, so as to not disrupt the continuity of the film (polyethylene film reinforced with glass or other fibers is more durable and less likely to be torn). The Fabricator shall monitor the application of the film to prevent uneven spots from appearing (mottling) on the concrete surface, due to variations in temperature, moisture content, or both. The Fabricator shall prevent mottling from occurring on the concrete surface by applying additional water under the film or applying a combination of polyethylene film bonded to absorbent fabric to the concrete surface to retain and evenly distribute the moisture.

## **ITEMS 992.11 and 992.12** (Continued)

Immediately following final finishing, polyethylene film shall be placed over the surface of the fresh concrete surface, so as to not damage the surface of the concrete and shall be placed and weighted so that it remains in contact with the concrete throughout the entire duration of the final curing method cycle. The film shall extend beyond the edges of the concrete surface. The film shall be placed flat on the concrete surface, avoiding wrinkles, to minimize mottling. Edges of adjacent polyethylene film shall overlap a minimum of 6 inches and be tightly sealed with the use of sand, wood planks, pressure-sensitive tape, mastic, or glue to maintain close contact with the concrete surface, retain moisture, and prevent the formation of air pockets throughout the entire duration of the final curing method cycle.

### **(b) White Burlap-Polyethylene Sheeting**

White burlap-polyethylene sheeting shall meet the requirements of ASTM C171, be securely bonded to the burlap so to avoid separation of the materials during handling and curing of the concrete, and be applied in the same manner as the polyethylene film.

### **(c) Reinforced Impervious Paper.**

Reinforced impervious paper shall meet the requirements of ASTM C171, consist of two sheets of kraft paper cemented together with a bituminous adhesive and reinforced with embedded cords or strands of fiber running in both directions, and be white in color. Reinforced impervious paper shall be treated to prevent tearing when wetted and dried.

Reinforced impervious paper can be reused so long as it is effective in retaining moisture on the concrete surface. The Fabricator shall visually inspect the reinforced impervious paper for all holes, tears, and pin holes from deterioration of the paper through repeated use by holding the paper up to the light. The paper shall be discarded and prohibited from use when the moisture is no longer retained.

After the concrete has hardened sufficiently to prevent surface damage, the concrete surface shall be thoroughly wetted prior to the application of the reinforced impervious paper, and be applied in the same manner as the polyethylene film.

## **4. Liquid Membrane-Forming Compounds for Curing.**

All exposed concrete surfaces shall remain moist with a continuous application of liquid membrane-forming compounds throughout the entire duration of the final curing method cycle (see *Table 7: Final Curing Method Cycle for Liquid Membrane-Forming Compounds*).

**Table 7: Final Curing Method Cycle for Liquid Membrane-Forming Compounds**

Sustained Concrete Temperature	Final Curing Method Cycle Duration	Compressive Strength
50°F ≤ °F ≤ 90°F	≥ Seven (7) days	≥ 80% f <sub>c</sub>

**ITEMS 992.11 and 992.12** (Continued)

Liquid membrane-forming compounds shall meet the requirements of ASTM C 1315, Type I, Class A and shall exhibit specific properties, such as alkali resistance, acid resistance, adhesion-promoting quality, and resistance to degradation by ultraviolet light, in addition to moisture-retention capabilities. Liquid membrane-forming compounds shall consist of waxes, resins, chlorinated rubber, or other materials to reduce evaporation of moisture from concrete. Liquid membrane-forming compounds shall be applied in accordance with the manufacturer's recommendations.

Liquid membrane-forming compounds shall be applied immediately after the disappearance of the surface water sheen following final finishing. All exposed surfaces shall be wetted immediately after form removal and kept moist to prevent absorption of the compound, allowing the curing membrane to remain on the concrete surface for proper membrane moisture retention. The concrete shall reach a uniformly damp appearance with no free water on the surface prior to the application of the compound.

If patching or finishing repairs are to be performed prior to the application of the compound, the Precast Concrete Bridge Element shall be covered temporarily with saturated covers until the repairs are completed and the compound is applied. Only areas being repaired shall be uncovered during this period. While the saturated covers are removed to facilitate the patching process, the work shall continue uninterrupted. If for any reason the work is interrupted, saturated covers shall be placed onto the uncovered concrete surface, until the work continues and is completed, at which time the curing compound shall be applied to the repaired area.

Careful considerations shall be made by the Fabricator to determine if the evaporation rate is exceeding the rate of bleeding, thus causing the surface to appear dry even though bleeding is still occurring. Under such conditions, the application of liquid membrane-forming compounds to the concrete surface shall be delayed, in order to prevent bleed water from being sealed below the concrete surface and avert map cracking of the membrane films, reduction in moisture-retention capability, and reapplication of the compound. To diagnose and prevent this condition, the Fabricator shall place a transparent plastic sheet over a test area of the uncured and unfinished concrete surface and shall determine if any bleed water accumulates under the plastic.

The compound shall be applied in two applications at right angles to each other to ensure uniform and more complete coverage. On very deeply textured surfaces, the surface area to be treated shall be at least twice the surface area of a troweled or floated surface. In such cases, two separate applications may be needed, each at 200 ft<sup>2</sup>/gal., with the first being allowed to become tacky before the second is applied.

The curing compound shall be applied by power sprayer, using appropriate wands and nozzles with pressures between 25 and 100 psi. For very small areas such as repairs, the compound shall be applied with a wide, soft-bristled brush or paint roller. The compound shall be stirred or agitated before use and applied uniformly in accordance with the manufacturer's recommended rate. The Fabricator shall verify the application rates are in accordance with the manufacturer's recommended rate.

When the concrete surface is to receive paint, finishes, or toppings that require positive bond to the concrete, it is critical that the curing procedures and subsequent coatings, finishes, or toppings be compatible to achieve the necessary bond

**ITEMS 992.11 and 992.12** (Continued)

After the termination of the final curing method cycle has occurred, liquid membrane-forming compounds shall be removed by blast-cleaning from any concrete surface that is to receive paint, finishes, plastic concrete from secondary pour, grout, or any other toppings that require bonding to the concrete surface. These surfaces shall be further blast-cleaned to remove the cement matrix down to exposed aggregate to ensure proper bonding to the material. The method used to remove the curing compound shall not damage the reinforcement and coating. Compounds are prohibited on any concrete surface that will have a penetrating or coating type treatment such as a sealer, stain, or waterproofing membrane applied to it.

**5. Accelerated Curing.**

Accelerated curing shall use live steam or radiant heat with moisture in accordance with PCI MNL-116 as modified herein. The concrete temperature shall meet the maximum heat increase and cool down rates as specified herein. Concrete temperature monitoring shall meet the requirements of the *Temperature Monitoring* section. Excessive and fluctuating rates of heating and cooling shall be prohibited. The concrete temperature shall not exceed 158°F at any time. The Fabricator shall meet the following accelerated curing sequencing and requirements.

**(a) Initial Delay Period.**

The initial delay period shall be defined as the duration immediately following the placement of the concrete and the attainment of initial set of the concrete. The Fabricator shall determine the time of initial set in accordance with AASHTO T 197 specifications. Throughout the entire duration of the preset period, initial curing shall be implemented. The temperature increase period (see *Temperature Increase Period* section) shall not occur until initial set of the concrete is attained. During the initial delay period, the concrete temperature shall meet the following requirements:

- i. Concrete temperature rate of increase shall not exceed 10°F per hour.
- ii. Total concrete temperature increase shall not exceed 40°F higher than the placement concrete temperature or 100°F, whichever is less

**(b) Temperature Increase Period.**

The temperature increase period shall be defined as the duration immediately following the completion of the initial delay period (after initial set) and immediately prior to the start of the constant maximum temperature period. Application of steam to the enclosure shall not occur until the initial delay period is complete. After the initial delay period is complete, all exposed concrete surfaces shall be cured in a moist environment where the concrete temperature increases at a rate not to exceed 36°F per hour.

**(c) Constant Maximum Temperature Period.**

The constant maximum temperature period shall be defined as the duration immediately following the completion of the temperature increase period and immediately prior to the start of the temperature decrease period. After the temperature increase period is complete, all exposed concrete surfaces shall be cured in a moist environment at a controlled and constant elevated temperature throughout the entire duration of the constant maximum temperature period. Termination of the constant maximum temperature period and the start of the termination decrease period shall occur after all specified conditions are met (see *Table 8: Constant Maximum Temperature Period*).

**ITEMS 992.11 and 992.12** (Continued)**Table 8: Constant Maximum Temperature Period**

Sustained Concrete Temperature	Constant Maximum Temperature Period	Compressive Strength
120°F ≤ °F ≤ 158°F	6 hrs ≤ Time ≤ 48 hrs	≥ 80% f <sub>c</sub>

**(d) Temperature Decrease Period.**

After the constant maximum temperature period is complete, the concrete temperature shall be cured in a moist environment at a controlled and reduced rate not to exceed 36°F per hour until the concrete temperature is within 20°F of the ambient temperature outside of the curing enclosure.

**Q. Stripping.**

The Fabricator shall not strip forms or handle the Precast Concrete Bridge Element until Quality Control compressive strength cylinders attain a minimum compressive strength of 80% Design Strength (f<sub>c</sub>) or the value indicated on the approved drawings has been achieved. After removal from the form, all exposed concrete surfaces shall continue to be cured in conformance with the *Final Curing Methods* sections until completion.

**R. Handling and Storage of Precast Concrete Bridge Elements.**

Precast Concrete Bridge Elements may be exposed to temperatures below freezing (32°F) when the chosen curing cycle has been completed, provided that the following conditions are met:

- (a) Precast Concrete Bridge Elements are protected from precipitation with polyethylene curing covers until 100% f<sub>c</sub> is attained
- (b) Precast Concrete Bridge Elements maintain a minimum concrete temperature of 40°F until 100% f<sub>c</sub> is attained

Precast Concrete Bridge Elements damaged during handling and storage will be repaired or replaced at MassDOT's direction at no cost to MassDOT. Precast Concrete Bridge Elements shall be lifted at the designated points by approved lifting devices embedded in the concrete and in accordance with proper lifting and handling procedures. Storage areas shall be smooth and well compacted to prevent damage due to differential settlement. Precast Concrete Bridge Elements shall be supported on the ground by means of continuous blocking, in accordance with the approved dunnage plan.

Precast Concrete Bridge Elements shall be loaded on a trailer with blocking as described above, in accordance with the approved dunnage plan. Shock-absorbing cushioning material shall be used at all bearing points during transportation of the Precast Concrete Bridge Elements. Blocking shall be provided at all locations of tie-down straps. Precast Concrete Bridge Elements stored prior to shipment shall be inspected by the Contractor prior to being delivered to the site to identify damage that would be cause for repair or rejection.

**ITEMS 992.11 and 992.12** (Continued)**S. Repairs and Replacement.**

In the event defects are identified, they shall be classified in the following categories and a non-conformance report (NCR) shall be filed if required. The NCR shall be submitted to MassDOT for review. Defects in all categories shall be documented by plant Quality Control personnel and made available to MassDOT upon request. Any required repairs shall utilize materials listed on the MassDOT QCML.

Where noted, defects shall be repaired according to the PCI Northeast Region Guidelines for Resolution of Non-Conformances in Precast Concrete Bridge Elements, Report Number PCINE-18-RNPCBE. Please note that reference to PCINE-18-RNPCBE is made for repair details only. In the case of conflicts with this Special Provision, this Special Provision shall govern.

**1. Category 1, Surface Defects.**

Category 1 defects do not need to be repaired, and an NCR does not need to be filed. Surface defects are defined as the following:

- (a) Surface voids or bug holes that are less than 5/8-inch in diameter and less than 1/4-inch deep, except when classified as Category 4
- (b) Cracks less than or equal to 0.006 inches wide
- (c) Cracks less than or equal to 0.125 inches wide on surfaces that will receive a field-cast concrete overlay

**2. Category 2, Minor Defects.**

Category 2 defects shall be repaired, but an NCR does not need to be filed. Minor defects are defined as the following:

- (a) Spalls, honeycombing, surface voids that are less than 2 inches deep and have no dimension greater than 12 inches
- (b) Cracks less than or equal to 0.016 inches that will not receive a concrete overlay
- (c) Broken or spalled corners that will be covered by field-cast concrete

Minor defects shall be repaired according to PCINE-18-RNPCBE. Cracks shall be sealed according to the PCI Repair Procedure #14 in PCINE-18-RNPCBE.

**3. Category 3, Major Defects.**

For Category 3 defects, the Fabricator shall prepare an NCR that documents the defect and describes the proposed repair procedure. The NCR shall be submitted to MassDOT for approval prior to performing the repair. Major defects are defined as the following:

- (a) Spalls, honeycombing and surface voids that are deeper than 2 inches or have any dimension greater than 12 inches, when measured along a straight line
- (b) Concentrated area of defects consisting of four or more Category 2 Defects within a 4-square foot area.
- (c) Exposed reinforcing steel



**ITEMS 992.11 and 992.12** (Continued)

- (d) Cracks greater than 0.016 inches and less than or equal to 0.060 inches in width that will not receive a concrete overlay
- (e) Bearing area spalls with dimensions not exceeding 3 inches
- (f) Cracks, spalls and honeycombing that will be encased in cast in place concrete need not be repaired, but the limits and location of the defects shall be documented with an NCR

Upon MassDOT approval, defects and cracks shall be repaired according to PCINE-18-RNPCBE and this specification. All repairs shall be completed at the expense of the Contractor.

**4. Category 4, Rejectable Defects.**

Rejectable defects as determined by the MassDOT Inspector, RMS, and Engineer may be cause for rejection. Fabricator may submit an NCR with a proposed repair procedure, requesting approval. Some rejectable defects are defined as the following:

- (a) Surface defects on more than 5% of the surface area which will be exposed to view after installation
- (b) Minor defects that in total make up more than 5% of the surface area of the unit
- (c) Cracks greater than 0.060 inches in width except as noted in Category 1
- (d) Elements fabricated outside of the specified tolerances
- (e) MassDOT compressive strength testing that does not meet the specified Design Strength,  $f'_c$

**T. Loading.**

Prior to the Fabricator loading the Precast Bridge Element on to the truck for shipping, the Fabricator shall provide the MassDOT Plant Inspector and RMS a minimum seven (7) days' notice of the Fabricator's intent to load the Precast Bridge Element. Inspection by the MassDOT Plant Inspector shall take place while the element is still on dunnage in the yard. The element shall not be loaded onto the truck until the MassDOT Plant Inspector has performed the inspection.

**U. Shipping.**

Prior to shipment, the Fabricator shall perform the following actions and provide the required documentation to the MassDOT Plant Inspector:

- (a) Precast Concrete Bridge Elements shall remain at the Fabricator's plant for a minimum of 7 days after cast date.
- (b) QC Inspection Reports shall be signed by the Quality Control Manager and provided to the MassDOT Plant Inspector.
- (c) QC Compressive Strength Test Report Forms attaining Design Strength,  $f'_c$  for the Precast Concrete Bridge Element's representative Sublot shall be generated by the Fabricator and provided to the MassDOT Plant Inspector.
- (d) Certificate of Compliance shall be generated by the Fabricator as described under the Fabricator Quality Control section and provided to the MassDOT Plant Inspector.

**ITEMS 992.11 and 992.12** (Continued)

- (e) All MassDOT RMS approved Corrective Actions submitted on the Non-Conformance Reports (NCR), shall be verified to have been completed by the MassDOT Plant Inspector and Quality Control Manager.
- (f) All NCRs shall be signed off by the Quality Control Manager, MassDOT Inspector and MassDOT RMS.

**V. Delivery**

Upon Delivery, the following documentation shall be provided to the MassDOT Resident Engineer or designee:

- (a) QC Compressive Strength Test Report Forms attaining Design Strength,  $f'_c$  for the Precast Concrete Bridge Element's representative subplot.
- (b) Certificate of Compliance generated by the Fabricator as described under the Fabricator Quality Control section.
- (c) QC Inspection Reports signed by the Quality Control Manager.

The Contractor shall inspect Precast Concrete Bridge Elements upon receipt at the site. Precast Concrete Bridge Elements damaged during delivery shall be repaired or replaced at MassDOT's direction at no cost to MassDOT.

**CONSTRUCTION METHODS – FIELD CONSTRUCTION****A. General**

All of the Contractor's field personnel involved in the erection and assembly of the Precast Concrete Bridge Elements shall have knowledge of and follow the approved Erection Procedure

Prior to installation, the following documentation shall be reviewed and confirmed by the MassDOT Resident Engineer or designee:

- (a) QC Compressive Strength Test Report Forms attaining Design Strength,  $f'_c$  for the Precast Concrete Bridge Element's representative subplot.
- (b) Certificate of Compliance generated by the Fabricator as described under the Fabricator Quality Control section.
- (c) QC Inspection Reports signed by the Quality Control Manager.

Field construction staff shall verify that the Resident Engineer has accepted all Precast Concrete Bridge Elements prior to installation.

**B. Erection Procedure**

Prior to the erection, the Contractor shall submit an Erection Procedure for approval by the Engineer. This submittal shall include computations and drawings for the transport, hoisting, erection and handling of the Precast Concrete Bridge Elements. The Erection Procedure shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts with working knowledge of the Contractor's equipment, approved shop drawings, and materials to build the bridge. The Erection Procedure shall, at a minimum, include the following:

**ITEMS 992.11 and 992.12** (Continued)**1. Erection Procedure**

The Erection Procedure shall be prepared to conform to the requirements of 960.61, Erection and the applicable sections in Chapter 8 of the PCI Design Handbook (seventh edition) for handling, erection, and bracing requirements. At a minimum, the Erection Procedure shall provide:

- (a) Minimum concrete compressive strength for handling the Precast Concrete Bridge Elements.
- (b) Concrete stresses during handling, transport, and erection.
- (c) Crane capacities, pick radii, sling geometry, and lifting hardware.
- (d) Verification that the equipment can handle all pick loads and weights with the required factor of safety.
- (e) Evaluation of construction sequence and evaluation of any geometric conflicts in the lifting of the Precast Concrete Bridge Elements and setting them as shown on the plans.
- (f) Design of crane supports including verification of subgrade for support.
- (g) Location and design of all temporary bracing that will be required during erection.

Non-shrink grout and concrete materials, approved by the Engineer, shall be placed as shown on the plans. Fill joints, keyways, and voids, in strict accordance with the specifications and manufacturer's recommendations and instructions.

For footings, approach slabs and highway guardrail transitions, once these Precast Concrete Bridge Elements have been set to the correct horizontal and vertical alignment, the void between them and the supporting soil shall be filled with Controlled Density Fill – Non-Excavatable to the limits as shown on the plans. Add additional grout ports in the footings to facilitate the bedding process if required.

Joints shall be filled flush to the top with non-shrink grout, and any vertical misalignment between adjacent elements shall be feathered out on a slope of 1 to 12.

Curing of grout or concrete shall be performed in strict accordance with the specifications and manufacturer's recommendations. Filling shall not be completed in cold weather when either the ambient temperature or the precast member's temperature is below the manufacturer's recommendation. No localized heating of either the precast members or of the air surrounding the element will be permitted in an attempt to reach application temperatures.

If the joints or voids are not filled within five days after the Precast Bridge Elements are erected, the Contractor shall cover and protect the openings from weather and debris until they are filled.

**C. Survey and Layout**

Working points, working lines, and benchmark elevations shall be established prior to placement of all elements. The Contractor is responsible for field survey as necessary to complete the work. MassDOT reserves the right to perform additional independent survey. If discrepancies are found, the Contractor may be required to verify previous survey data.

**ITEMS 992.11 and 992.12** (Continued)**D. Erection**

The elements shall be placed in the sequence and according to the methods outlined in the Erection Procedure. As the erection proceeds, the Contractor shall constantly monitor the assembly to ensure that the precast concrete bridge element is within proper horizontal and vertical location and tolerances prior to releasing it from the crane and setting the next unit. The Contractor may use shims to maintain proper setting tolerances.

The concrete elements shall be lifted only by the lifting devices, and the utmost care shall be taken to prevent distortion of the elements during handling, transportation or storage.

Suitable spreaders shall be used during lifting so that only a vertical pull will be made on the lifting device. A non-vertical lifting force may be permitted if prior written approval is given by the Engineer. This approval will be contingent on the Contractor demonstrating by calculations, prepared by a Professional Engineer registered in Massachusetts, that the elements will not be damaged by the non-vertical lifting force and by documentation that the capacity of the lifting devices is adequate for the non-vertical lifting force.

Precast components shall be pre-bed with non-shrink grout thicker than shim stacks prior to placing other precast elements on top of them.

After all Precast Concrete Bridge Elements have been placed, the actual overall dimensions of the structure both horizontal and vertical, as laid out shall not deviate from the nominal dimensions shown on the plans beyond a tolerance of +0 inches and -1 inches. Once the layout of Precast Concrete Bridge Elements has been accepted by the Engineer, the Contractor shall cut all lifting devices off below the surfaces of the elements.

**E. Filling of Blockouts for Lifting Devices and Threaded inserts.**

If the blockouts in the Precast Concrete Bridge Elements where the lifting devices were located will be exposed and visible after assembly is complete, the Contractor shall fill these blockouts with Cement Mortar (M4.02.15) or grout.

After the formwork has been removed, all threaded inserts that have been cast into the precast concrete bridge deck for support of the formwork shall be filled with a grout of the same color as that of the precast concrete.

**ITEMS 992.11 and 992.12 (Continued)****5000 PSI, ¾ INCH, 685 HP CEMENT CONCRETE**

The 5000 PSI, ¾ Inch, 685 HP Cement Concrete under this heading shall be used for CP-MTL3 Bridge Barrier, the Highway Guardrail Transitions, and safety curb. 5000 PSI, ¾ IN., 685 HP Cement Concrete shall conform to all material and placement, finishing, and curing requirements of the Standard Specifications, except for the cementitious content which shall be limited to a maximum of 685 pounds per cubic yard.

**Placement of New Concrete**

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

The Contractor shall take all steps necessary to ensure that pedestrian and vehicular traffic is always protected from harm.

No separate payment will be made for this concrete placement preparation work.

**Erection**

Within sixty days of the date of the Notice to Proceed, the Contractor shall submit an erection procedure. The submitted method of erection is subject to review, comment, and approval by the Engineer. The method must be submitted with a detailed procedure which includes drawings and calculations sufficient to enable the Engineer to determine the adequacy of the proposed method.

The method and all submissions shall be prepared under the supervision of a professional engineer, registered in Massachusetts, who is familiar with these Specifications, AASHTO, the work, and experienced in this technical field. All submitted sheets shall be stamped by the supervising Engineer.

As a minimum the following information shall be included in the submittal:

1. Plan showing the location of all roadways, utilities, railroad tracks and other appurtenances in areas of erection.
2. The location of cranes, both horizontally and vertically, and their operating radii.
3. Lifting equipment information including rating data. Information shall include counterweights to be used and boom capability. The manufacturer's rated capacity of the crane and of all lifting and connecting devices shall be adequate for 125% of the total pick load including spreaders and other material except that in the areas within the potential influence area of the crane where railroad, vehicular or pedestrian traffic has access, the rated capacity shall be adequate for 150% of the total pick load. The limits of the potential crane influence area shall be taken as circular areas with radii matching the boom length and radius points located at the boom pivot point. Crane capacity rating charts and the rated capacity of all lifting and connecting devices shall be clearly shown in the submittal. The 125% or 150% factors of safety are to be used in addition to any factors of safety used by the manufacturer to calculate the rated capacity.

**ITEMS 992.11 and 992.12 (Continued)**

4. The type, size and arrangements of slings, shackles or other lifting and connecting devices including relative technical data.
5. The order of lifts, repositioning of equipment and counterweights, and location and method of attaching deadmen.
6. Methods and materials for temporary structures or the strengthening or bracing of a member (either temporarily or permanently) for erection purposes.

**STEEL REINFORCEMENT FOR STRUCTURES – EPOXY COATED**

The work under this heading shall conform to relevant provisions of Subsection 901 of the Standard Special Provisions and conform to Materials Specification M8.01.7 Epoxy Coated Reinforcing Bars.

All modifications to the existing structure necessary to place the proposed reinforcing as shown on the Contract drawings shall be considered incidental to this item.

Reinforcing Steel Manufacturers shall be on the QCML

<https://www.mass.gov/info-details/reinforcing-steel-manufacturers-m8010>

**DRILLING AND GROUTING DOWELS**

Work under this heading shall conform to the relevant provisions of Subsection 901 of the Standard Special Provisions and the following:

Work to be done under this heading consists of drilling and grouting dowels at locations as shown on the Contract drawings. In addition, some of the existing reinforcing steel is to be reused in the proposed construction, as mentioned under this Item.

Any existing steel rendered unsuitable for reuse through negligence on the part of the Contractor shall be replaced at the Contractor's expense.

Dowel embedment must be adequate to fully develop the bond strength of the bar. The Contractor shall calculate and submit proposed embedment lengths per AASHTO for approval.

All dowel holes shall be core drilled. No impact or percussion type drills will be allowed. The drilling operation shall be performed without damage to any existing reinforcing or a portion of the structure that is to remain in place. All damage to the existing concrete that is to remain in place shall be repaired to a condition equal to that existing prior to the beginning of drilling at the Contractor's expense.

**Note: After core drilling, all holes shall be roughened using a rock bit to allow better adhesion of the grout.**

**ITEMS 992.11 and 992.12 (Continued)**

The grout shall meet the requirements of noncorrosive Five Star Grout as manufactured by the US Grout Corporation of Old Greenwich, Connecticut; Garonite as manufactured by Garon Products, Inc. of Edison, New Jersey; Sika Grout 212 as manufactured by Sika Corporation, Lyndhurst, New Jersey, or an approved equal.

The Contractor shall follow the recommendations of the manufacturer in mixing and placing the grout prior to placement of reinforcing steel dowels. With regard to placing the grout, the Contractor shall adhere to the manufacturer's specifications for the minimum and maximum temperatures while placing the grout. Any excessive grout around the holes after placement of the dowel shall be struck off smooth while the grout is still fresh.

The cored holes shall be free of any foreign material prior to placing any grouts, and the Contractor shall have the approval of the Engineer signifying that the holes are clean prior to grout placement.

All damage to the existing concrete that is to remain in place shall be repaired to a condition equal to that existing prior to the beginning of drilling at the Contractor's expense.

**PROTECTIVE SCREEN TYPE II**

The work under this heading shall conform to the relevant provisions of Subsection 975 of the Standard Specifications.

**SCHEDULE OF BASIS FOR PARTIAL PAYMENT**

Within ten (10) days after the Notice to Proceed, the Contractor shall submit their proposal form, a schedule of unit prices for the major component Sub-Items that make up Item 992.11 and Item 992.12 as well as thier total bridge structure Lump Sum cost for Bridge Structure No. B-01-012 (4AP) and Bridge Structure No. B-01-014 (4AN). The bridge structure Lump Sum breakdown quantities provided in the proposal form are estimated and not guaranteed. The total of all partial payments to the Contractor shall equal the Lump Sum contract price regardless of the accuracy of the quantities furnished by the Engineer for the individual bridge components. The cost of labor and materials for any Item not listed but required to complete the work shall be considered incidental to Item 992.11 and Item 992.12 and no further compensation will be allowed.

The schedule on the proposal form applies only to Bridge Structure No. B-01-012 (4AP) and Bridge Structure No. B-01-014 (4AN). Payment for similar materials and construction at locations other than at this bridge structure shall not be included under this Item. Sub-Item numbering is presented for information only in coordination with MassDOT Standard Nomenclature.

**ITEMS 992.11 and 992.12 (Continued)****BASIS FOR PARTIAL PAYMENT FOR BRIDGE NO. B-01-012 (4AP)**

<b><u>Sub-Item No.</u></b>	<b><u>Description</u></b>	<b><u>QTY.</u></b>	<b><u>UNIT</u></b>	<b><u>UNIT PRICE</u></b>	<b><u>TOTAL</u></b>
904.3	5000 PSI, ¾ Inch, 685 HP Cement Concrete	32	CY		
904.31	Precast Highway Guardrail Transition	2	EA		
910.1	Steel Reinforcement for Structures – Epoxy Coated	13018	LB		
912.	Drilling and Grouting Dowels	1397	EA		
975.4	Protective Screen Type II	350	FT		
<b>TOTAL LUMP SUM FOR ITEM 992.11 =</b>					

**BASIS FOR PARTIAL PAYMENT FOR BRIDGE NO. B-01-014 (4AN)**

<b><u>Sub-Item No.</u></b>	<b><u>Description</u></b>	<b><u>QTY.</u></b>	<b><u>UNIT</u></b>	<b><u>UNIT PRICE</u></b>	<b><u>TOTAL</u></b>
904.3	5000 PSI, ¾ Inch, 685 HP Cement Concrete	32	CY		
904.31	Precast Highway Guardrail Transition	2	EA		
910.1	Steel Reinforcement for Structures – Epoxy Coated	13018	LB		
912.	Drilling and Grouting Dowels	1397	EA		
975.4	Protective Screen Type II	350	FT		
<b>TOTAL LUMP SUM FOR ITEM 992.12 =</b>					

**END OF DOCUMENT**

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DOCUMENT A00803

# **DRAWINGS AND SKETCHES**

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GENERAL NOTES:

1. DIMENSIONS SHOWN ARE TAKEN FROM ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. STATIONING SHOWN IS FOR REFERENCE ONLY AND HAS NOT BEEN ESTABLISHED BY SURVEY. THE CONTRACTOR SHALL ESTABLISH HIS OWN BASELINE NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE COST OF THE CONTRACT.
2. THE CONTRACTOR SHALL SUBMIT SURVEY OF ROADWAY TO THE ENGINEER TO ESTABLISH THE ACTUAL ROADWAY PROFILE. THE SURVEY SHALL INCLUDE EXISTING ROADWAY ELEVATIONS ALONG EACH EDGE OF PAVEMENT AND CROWN LINE AT 25 FOOT INTERVALS, AT ENDS OF THE BRIDGE AND AT ENDS OF WINGWALLS. THE LIMITS OF SURVEY SHALL EXTEND 250 FEET EACH SIDE OF THE LIMITS OF WORK.
3. REMOVE EXISTING PAVEMENT MARKINGS AND REPLACE WITH NEW SLOTTED PAVEMENT MARKERS AT LOCATIONS DISTURBED BY APPROACH ROADWAY PAVING.

EXISTING CONDITIONS:

ALL DIMENSIONS, ELEVATIONS AND DETAILS SHOWN FOR EXISTING CONDITIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS, ELEVATIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF, AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL THE PROPOSED WORK HAS BEN APPROVED BY THE ENGINEER. ANY INTERFERENCE WITH THE PROPOSED CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER

DATE:

TO BE PLACED ON THE INSIDE FACE OF THE NORTHWEST AND SOUTHEAST HIGHWAY GUARDRAIL TRANSITIONS. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. THE DATE USED SHALL BE THE LATEST YEAR OF CONTRACT COMPLETION AS THE DATE THE BRIDGE BARRIER WILL BE CONSTRUCTED. BOTH HIGHWAY GUARDRAIL TRANSITIONS SHALL FEATURE THE SAME DATE.

TRAFFIC:

THE BRIDGE WILL BE OPEN TO A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION DURING ALL PHASES OF THE PROJECT. SEE STAGE CONSTRUCTION PLANS AND NOTES.

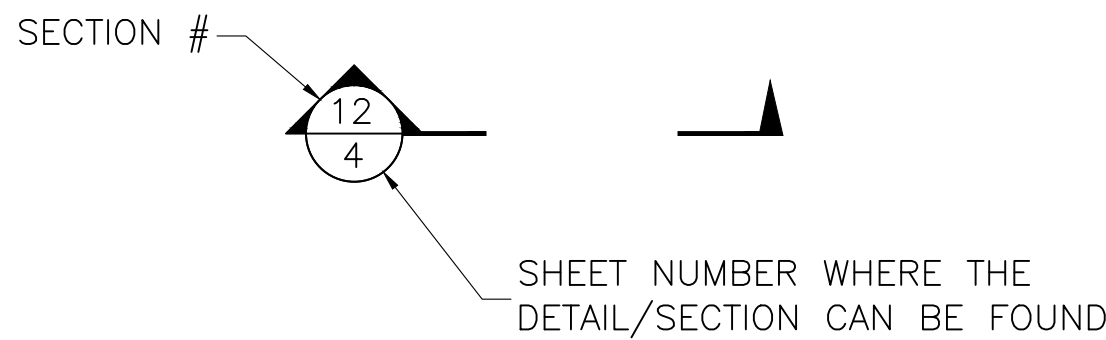
EXISTING PLANS:

PLANS FOR THE EXISTING BRIDGE ARE AVAILABLE THROUGH ELECTRONIC REQUEST AT THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION PLANS AND RECORDS DEPARTMENT.

DEMOLITION:

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR HIS REVIEW AND APPROVAL A DETAILED WORK PLAN, STAMPED BY A P.E., REGISTERED IN MASSACHUSETTS, SHOWING ALL THE PROPOSED METHODS OF REMOVAL, EQUIPMENT TO BE USED AND SCHEDULE OF OPERATIONS.

SECTION MARK:



PROPOSED BRIDGE PAVEMENT MILLING & RESURFACING OVERLAY

SURFACE COURSE: 1 ½ IN. SUPERPAVE BRIDGE SURFACE COUSRE – 9.5 POLYMER (SSC–B–9.5–P) OVER ASPHALT EMULSION FOR TACK COAT

MILLING: 1 ½ IN. BRIDGE PAVEMENT MILLING

ABBREVIATIONS:

DBYL – DOUBLE YELLOW LINE  
SWL – SOLID WHITE LINE  
SH – SHOULDER

CONCRETE:

PRECAST HIGHWAY GUARDRAIL TRANSITIONS	(A) 5000 PSI	(B) ¾”	(C) 685 LB/CY HP
CP–MTL3 SAFETY CURB	5000 PSI	¾”	685 LB/CY HP
SUBSTRUCTURE REPAIR	4000 PSI	⅝”	660 LB/CY

- (A) = 28 DAY COMPRESSIVE STRENGTH  
(B) = MAXIMUM AGGREGATE SIZE  
(C) = CEMENT CONTENT

REINFORCMENT:

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60. UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS.

MODIFICATION CONDITION	#4 BARS	#5 BARS	#6BARS
1. NONE	16”	17”	21”
2. 12” OF CONCRETE BELOW BAR	18”	22”	27”
3. COATED BARS, COVER < 3d <sub>b</sub> , OR CLEAR SPACING <6d <sub>b</sub>	21”	26”	31”
4. COATED BARS, ALL OTHER CASES	17”	21”	25”
5. CONDITION 2. AND 3.	23”	29”	35”
6. CONDITION 2. AND 4.	21”	27”	32”

ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

EPOXY COATING:

ALL REINFORCING BARS AND SUPPORT DEVICES SHALL BE EPOXY COATED IN ACCORDANCE WITH AASHTO M 284.

UTILITIES:

THE CONTRACTOR SHALL LOCATE AND PROTECT EXISTING UTILITIES FROM ALL DAMAGE. OVERHEAD WIRES ABOVE EAST SIDE OF BRIDGE.

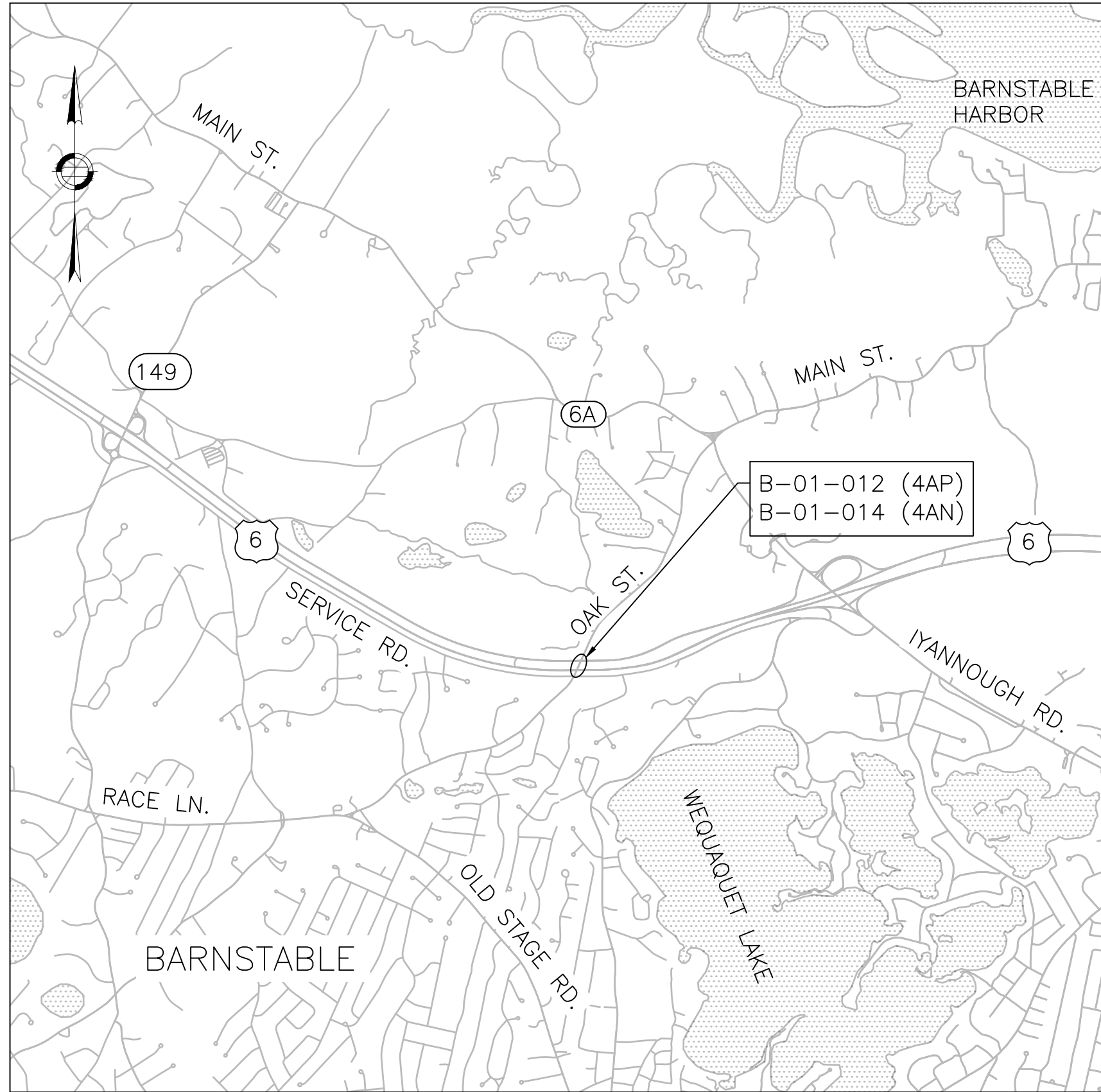
ELASTOMERIC PROTECTIVE COATING:

CONCRETE PROTECTIVE COATING SHALL BE APPLIED TO ALL FACES OF THE HIGHWAY GUARDRAIL TRANSITION AS WELL AS THE ALL FACES OF THE CP–MTL3 CONCRETE BARRIER. ARCH WALLS WILL ALSO BE PAINTED WHILE EXCLUDING THE ARCH ROOF.

DRAWING LIST	
SHEET NUMBER	SHEET TITLE
1	GENERAL NOTES, LOCUS AND DRAWING LIST
2	PLAN VIEW BR. NO. B–01–014
3	PLAN VIEW BR. NO. B–01–012
4	EAST ELEVATION
5	WEST ELEVATION
6	CONSTRUCTION STAGING
7	EXIST. AND PROP. BARRIER DETAIL
8	JOINT DETAIL AND FORM LINER
9	END POSTS AND EXCAVATION LIMITS
10	PRECAST GUARDRAIL TRANSITION DETAIL 1
11	PRECAST GUARDRAIL TRANSITION DETAIL 2
12	TYPE II PROTECTIVE SCREEN 1
13	TYPE II PROTECTIVE SCREEN 2
14	SUBSTRUCTURE REPAIR DETAIL AND DRAINAGE
15	B–01–014 STRIPING PLAN
16	B–01–012 STRIPING PLAN
17	STAGE 1A – SB LANE CLOSURE
18	STAGE 1B – SB LANE CLOSURE
19	STAGE 1C – SB LANE CLOSURE
20	STAGE 2A – NB LANE CLOSURE
21	STAGE 2B – NB LANE CLOSURE
22	STAGE 2C – NB LANE CLOSURE
23	DETOUR MAP
24	SIGN LEGEND

BARNSTABLE OAK STREET			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	1	24
PROJECT FILE NO.		613202	

GENERAL NOTES LOCUS AND DRAWING LIST



LOCUS  
N.T.S.

\*  
4AP  
4AN

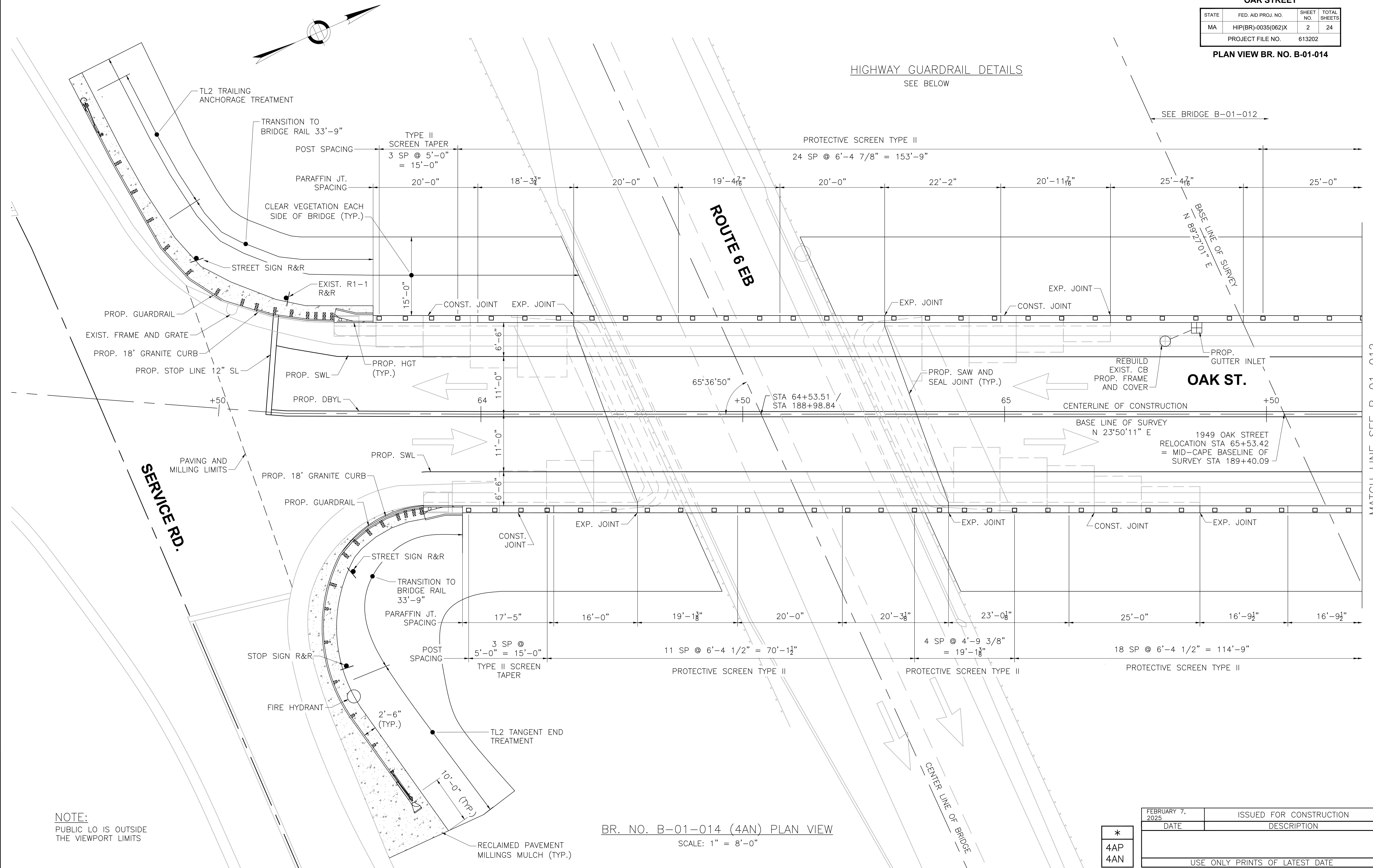
DESIGNED BY J. MULLER A. SILVIA	FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DRAWN BY J. MULLER ---	 <b>PROPOSED BRIDGE PRESERVATION BARNSTABLE OAK STREET OVER US 6 MID CAPE HWY</b> MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION 10 PARK PLAZA BOSTON, MASS	
CHECKED BY S. SOUSA A. SILVIA		
SPECS BY J. MULLER		
APPROVED FOR DESIGN BY S. SOUSA		

BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	2	24
PROJECT FILE NO.		613202	

PLAN VIEW BR. NO. B-01-014

HIGHWAY GUARDRAIL DETAILS  
SEE BELOW



NOTE:  
PUBLIC LO IS OUTSIDE  
THE VIEWPORT LIMITS

BR. NO. B-01-014 (4AN) PLAN VIEW  
SCALE: 1" = 8'-0"

\*  
4AP  
4AN

FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

SHEET 2 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

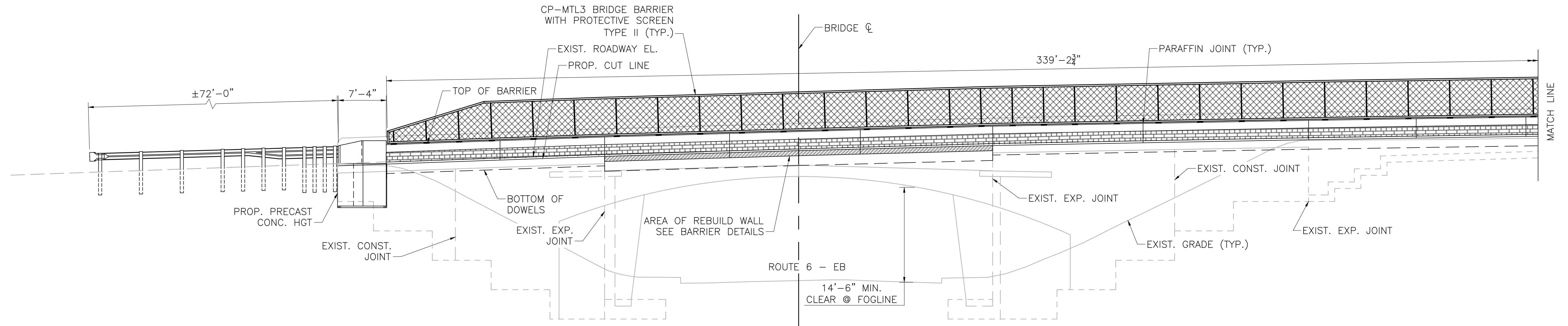




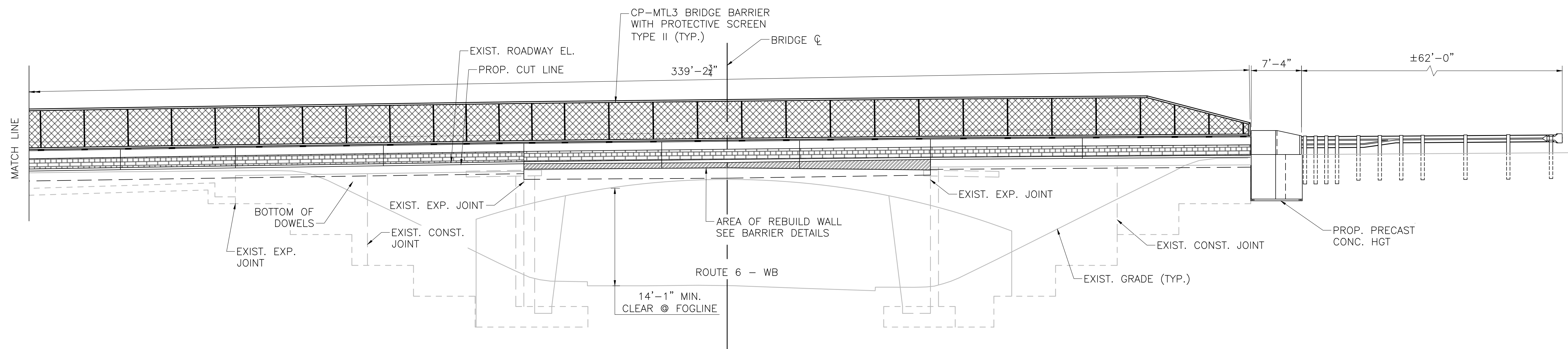
BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	4	24
PROJECT FILE NO.		613202	

EAST ELEVATION



PROP. EAST ELEVATION B-01-014  
OVER ROUTE 6 EASTBOUND  
SCALE: 1" = 8'-0"



PROP. EAST ELEVATION B-01-012  
OVER ROUTE 6 WESTBOUND  
SCALE: 1" = 8'-0"

\*  
4AP  
4AN

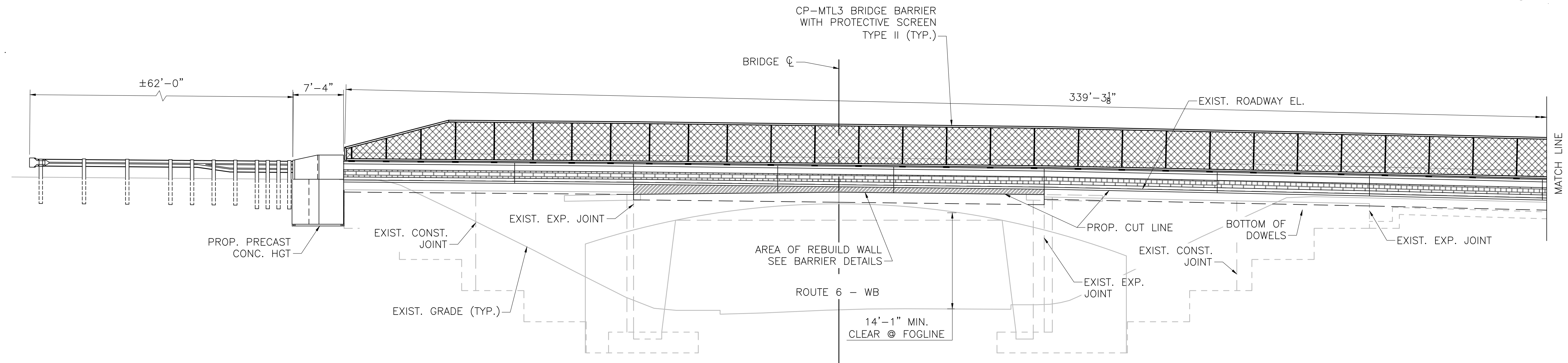
FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

SHEET 4 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

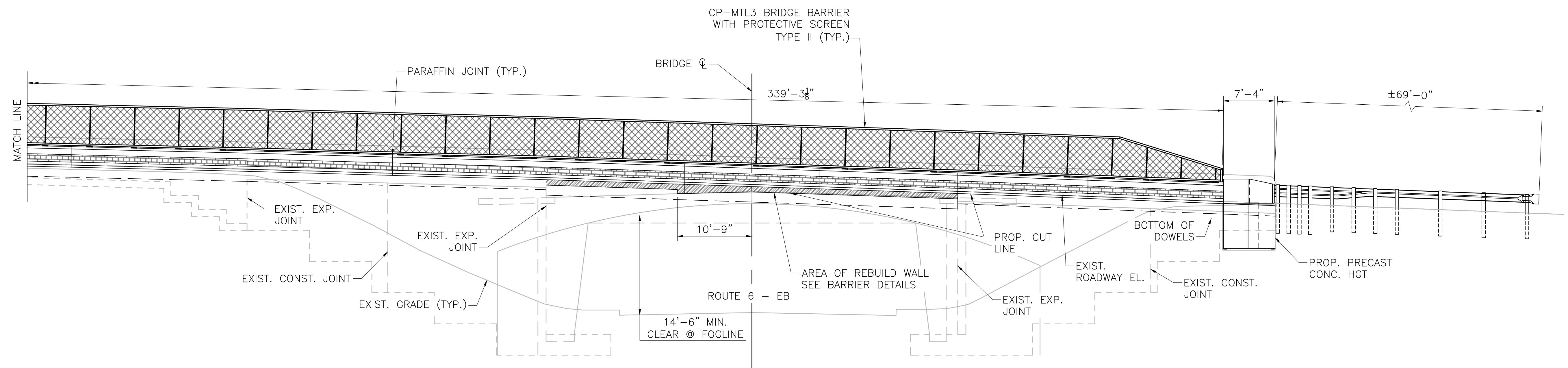
**BARNSTABLE  
OAK STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	5	24
PROJECT FILE NO.		613202	

**WEST ELEVATION**



PROP. WEST ELEVATION B-01-012  
OVER ROUTE 6 WESTBOUND  
SCALE: 1" = 8'-0"



PROP. WEST ELEVATION B-01-014  
OVER ROUTE 6 EASTBOUND  
SCALE: 1" = 8'-0"

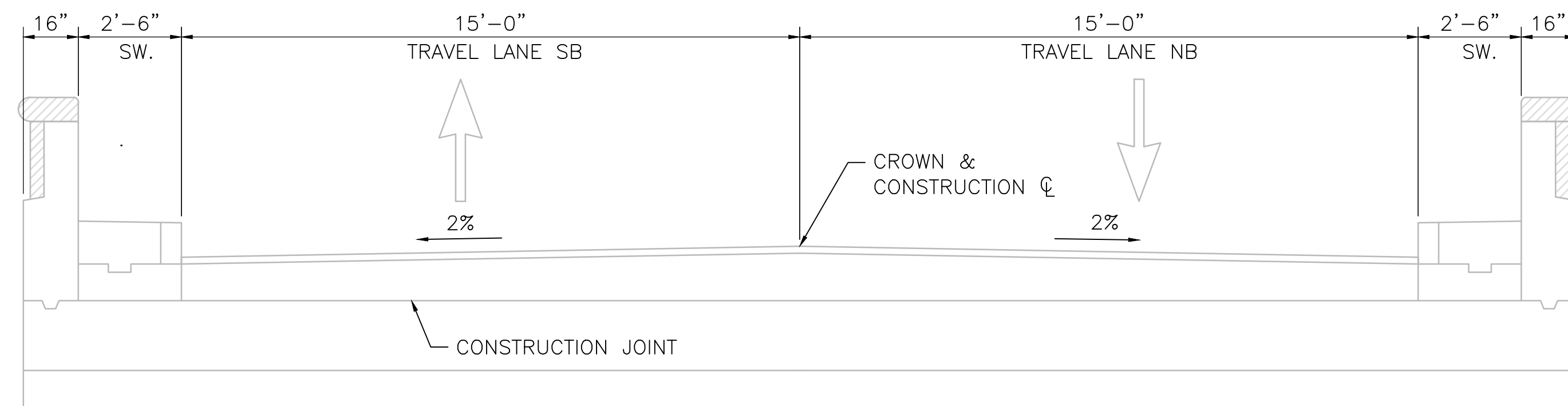
\*  
4AP  
4AN

FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

BARNSTABLE  
OAK STREET

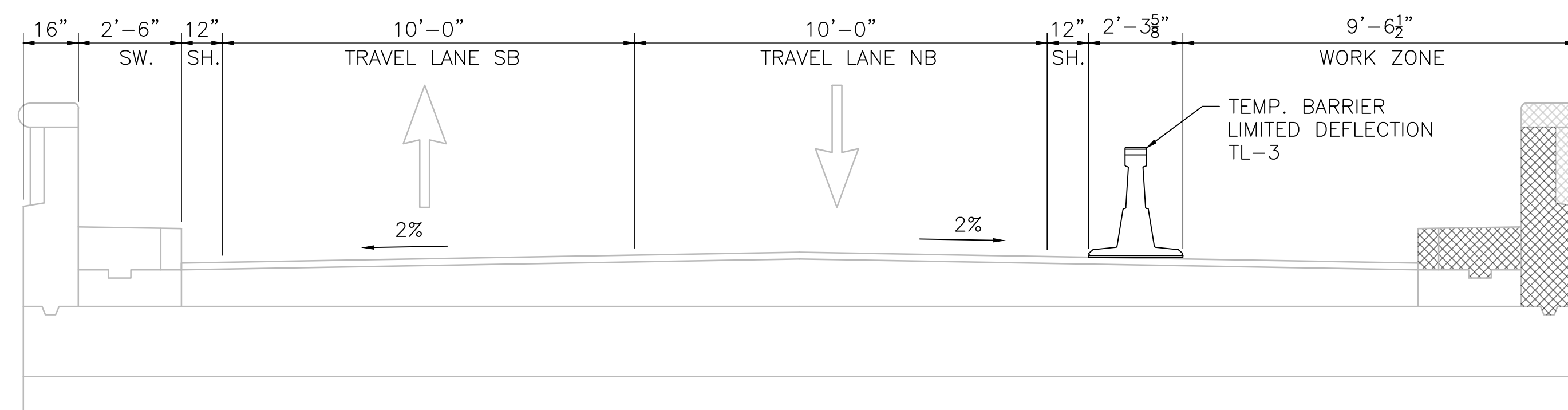
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	6	24
PROJECT FILE NO.		613202	

CONSTRUCTION STAGING

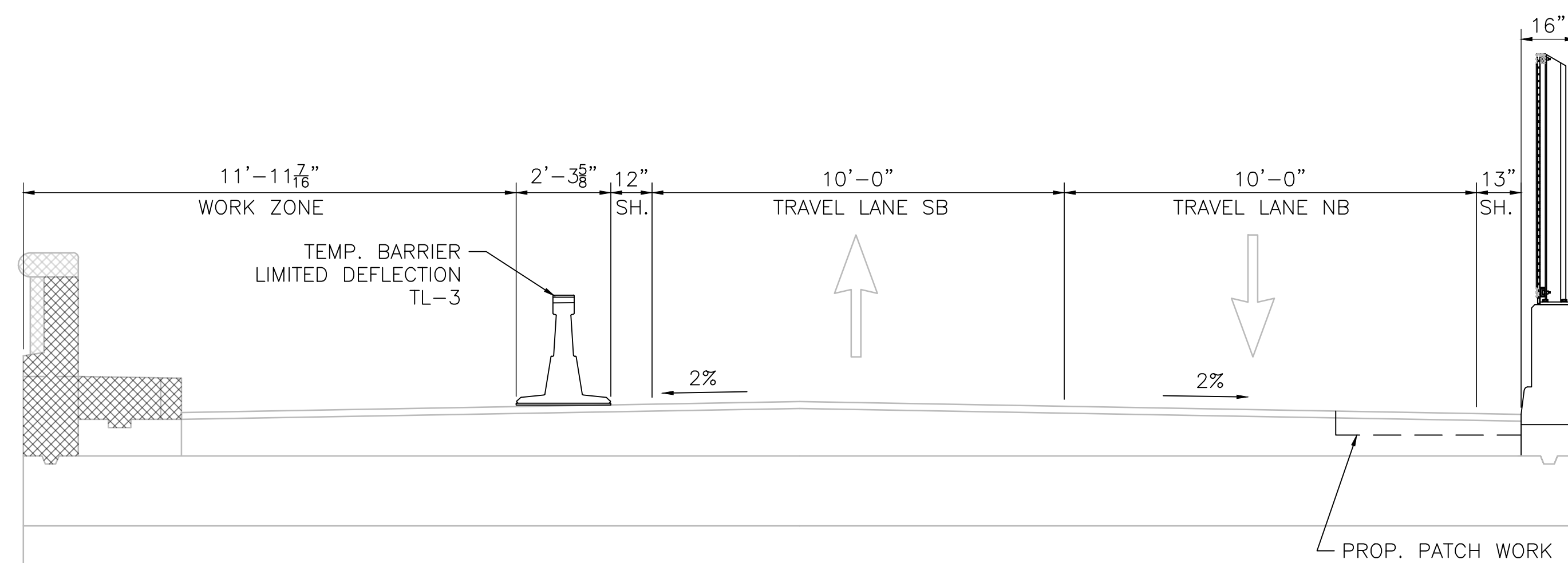


EXIST. TYP. SECTION - OAK STREET BRIDGE  
B-01-014/ BRIDGE B-01-012 OVERPASS

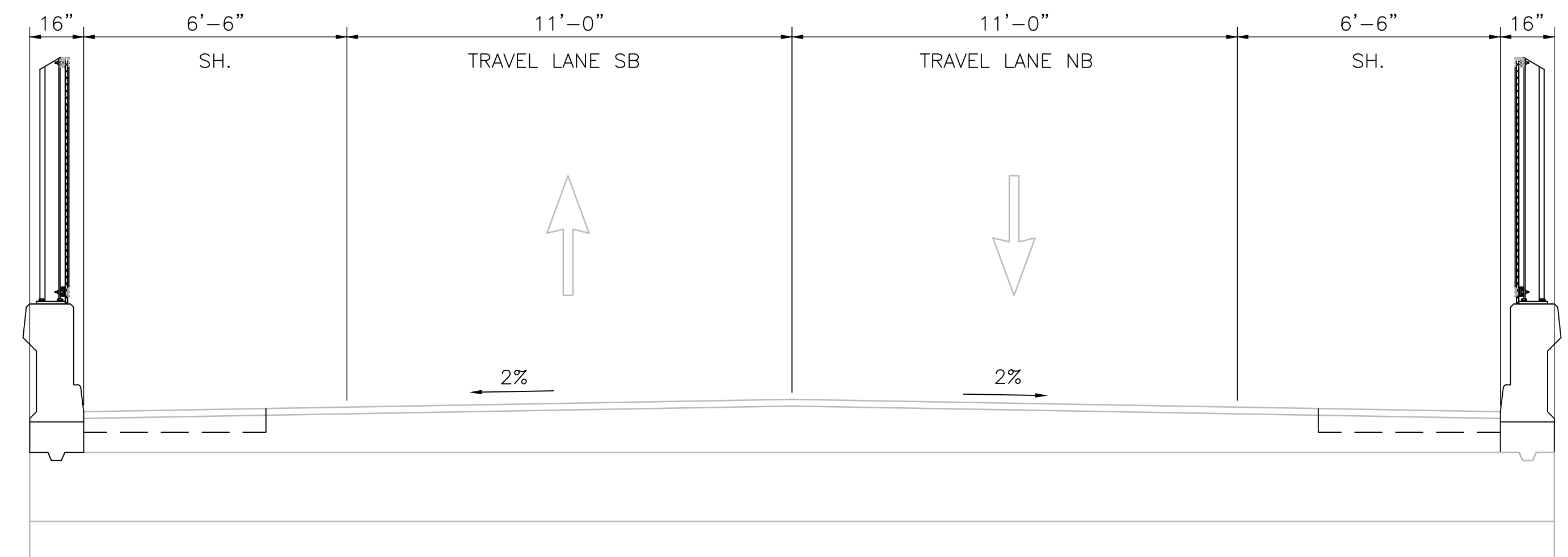
SCALE 3/8" = 1'-0"  
(LOOKING SOUTH)



STAGE I  
SCALE 3/8" = 1'-0"



STAGE II  
SCALE 3/8" = 1'-0"



PROP. TYP. SECTION - OAK STREET BRIDGE  
B-01-012/BRIDGE B-01-014 OVERPASS

SCALE 3/8" = 1'-0"

CONSTRUCTION STAGING NOTES

STAGE I

1. INSTALL TEMPORARY TRAFFIC CONTROLS AND CONSTRUCTION SIGNAGE.
2. INSTALL TEMPORARY LIMITED DEFLECTION TL-3 BARRIER AND SHIFT TRAFFIC TO THE WEST.
3. DEMO THE EAST BARRIER AND SAFETY WALK.
4. CONSTRUCT EASTERLY CP-MTL3 BARRIER WITH PROTECTIVE FENCE.
5. INSTALL HIGHWAY GUARDRAIL TRANSITIONS AND NEW GUARDRAIL WITH END TREATMENTS

STAGE II

1. REMOVE AND RESET TEMPORARY TRAFFIC CONTROLS, CONSTRUCTION SIGNAGE, AND LIMITED DEFLECTION TL-3 BARRIER AND SHIFT TRAFFIC TO THE EAST.
2. DEMO THE WEST BARRIER AND SAFETY WALK
3. CONSTRUCT WESTERLY CP-MTL3 BARRIER WITH PROTECTIVE FENCE.
5. INSTALL HIGHWAY GUARDRAIL TRANSITIONS AND NEW GUARDRAIL WITH END TREATMENTS
6. REMOVE TEMPORARY LIMITED DEFLECTION TL-3 BARRIER.

STAGE III.

1. BRIDGE PAVEMENT MILLING THE ENTIRE BRIDGE WEARING SURFACE AND APPROACHES OF 1 1/2"
2. REPLACE MILLED WEARING SURFACE WITH 1 1/2" OF SUPERPAVE BRIDGE SURFACE COURSE-9.5 POLYMER (SSC-B-9.5-P)
3. INSTALL NEW PAVEMENT MARKINGS
4. OPEN LANES TO MATCH EXISTING CONFIGURATION AT EITHER END OF WORK.

\*  
4AP  
4AN

FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

SHEET 6 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)



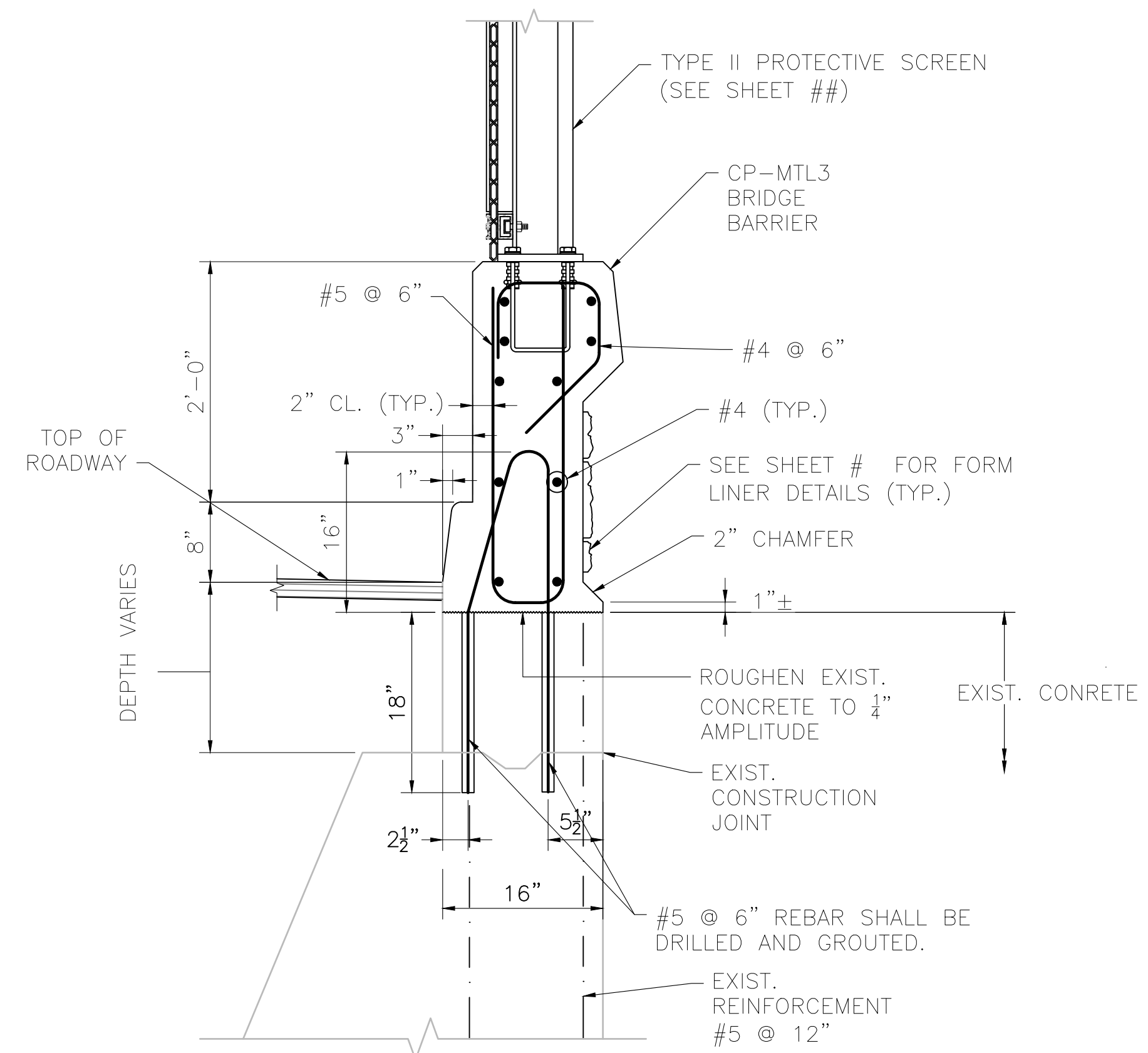
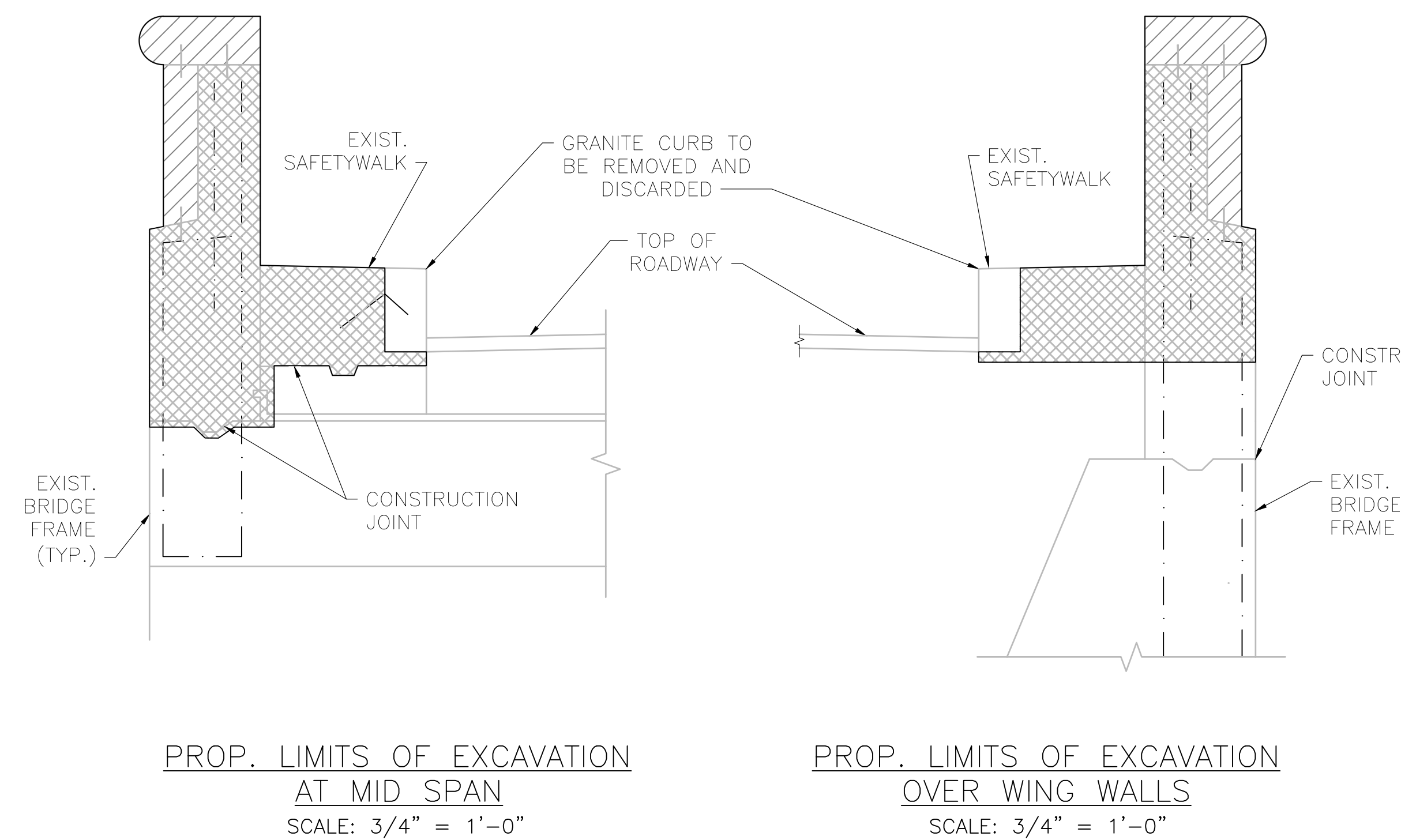
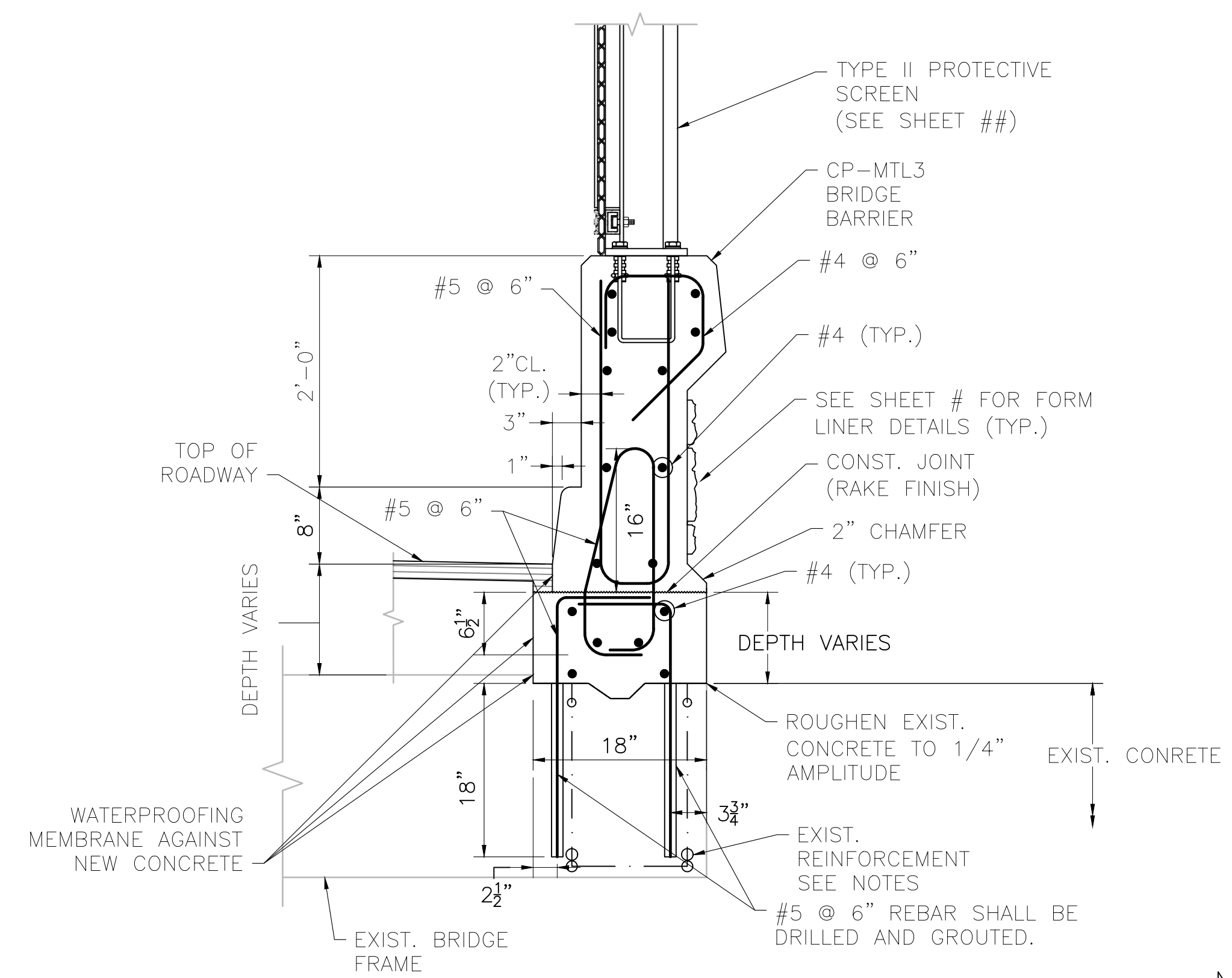
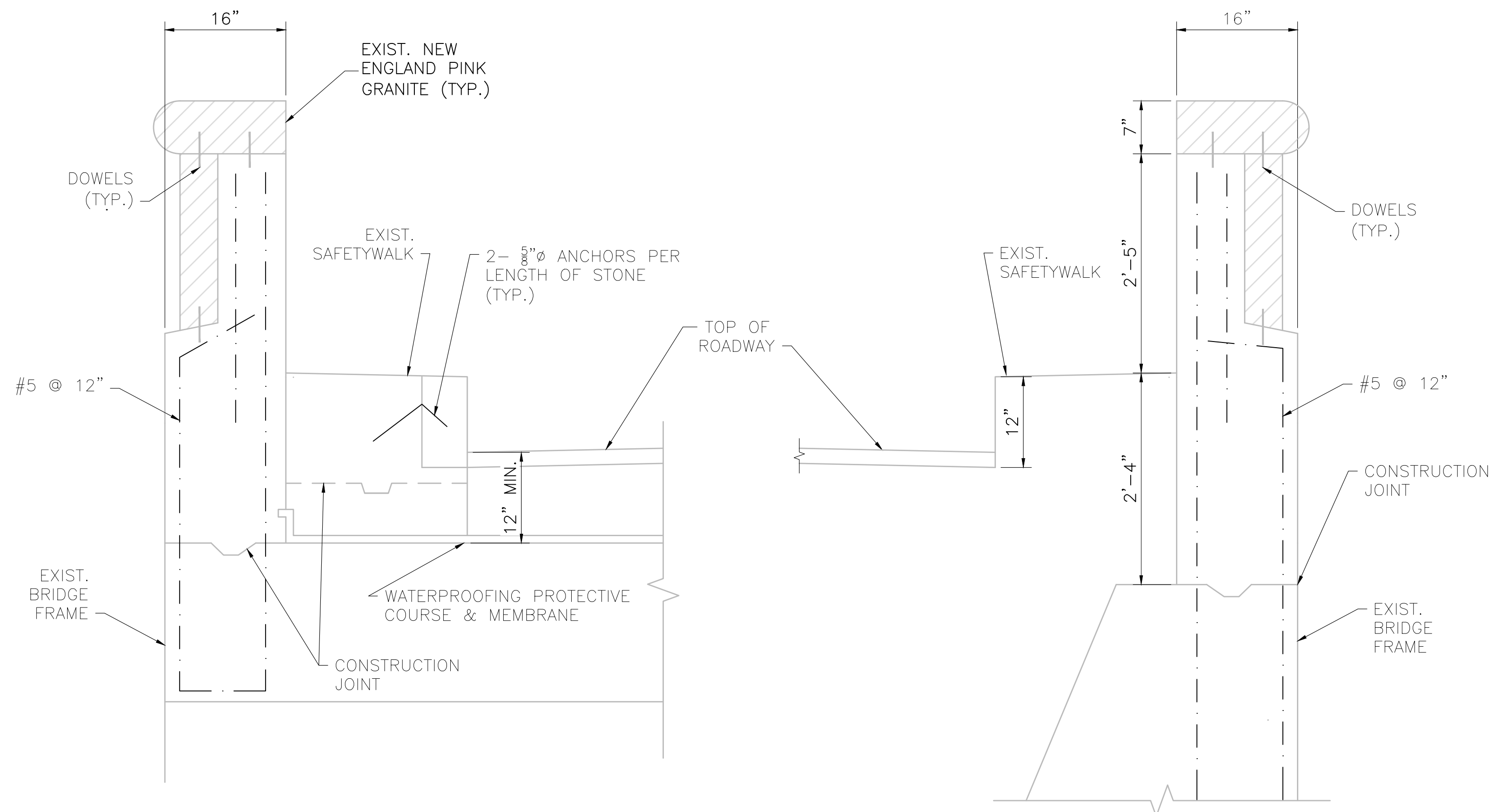
BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	7	24
PROJECT FILE NO.		613202	

EXIST. AND PROP. BARRIER DETAIL

NOTES:

CONTRACTOR SHALL LOCATE ALL EXISTING REBAR USING A PACHOMETER PRIOR TO ANY DRILLING AND GROUTING OPERATIONS.



- REINFORCED CONCRETE EXCAVATION
- REMOVE AND STOCKPILE GRANITE

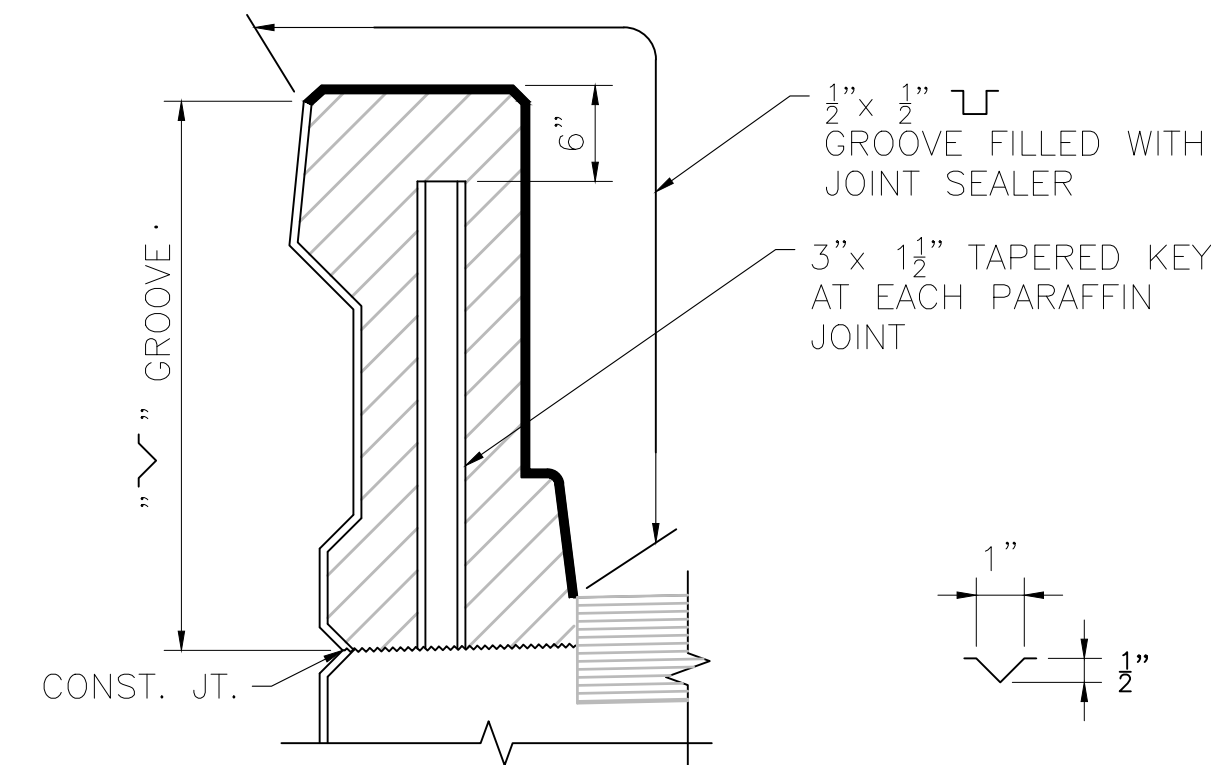
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4AP  
4AN

FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
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USE ONLY PRINTS OF LATEST DATE	

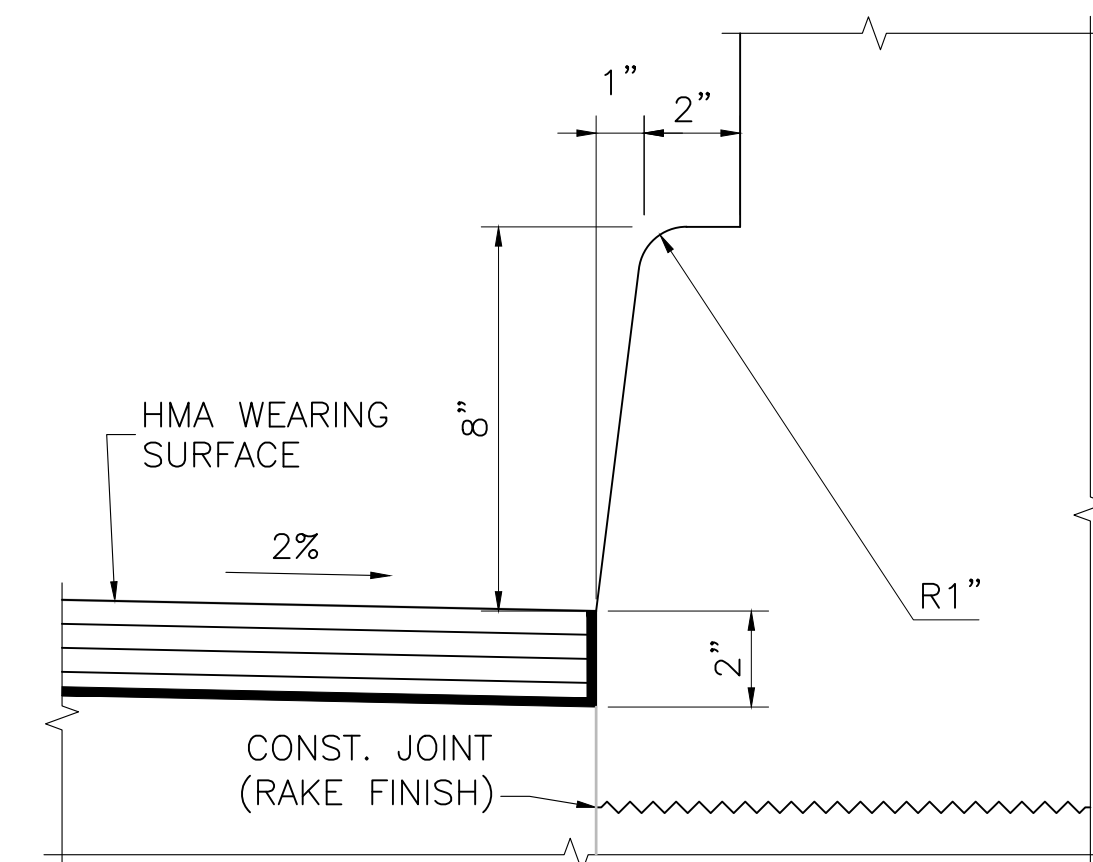
**BARNSTABLE  
OAK STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	8	24
PROJECT FILE NO.		613202	

**JOINT DETIAL AND FORM LINER**



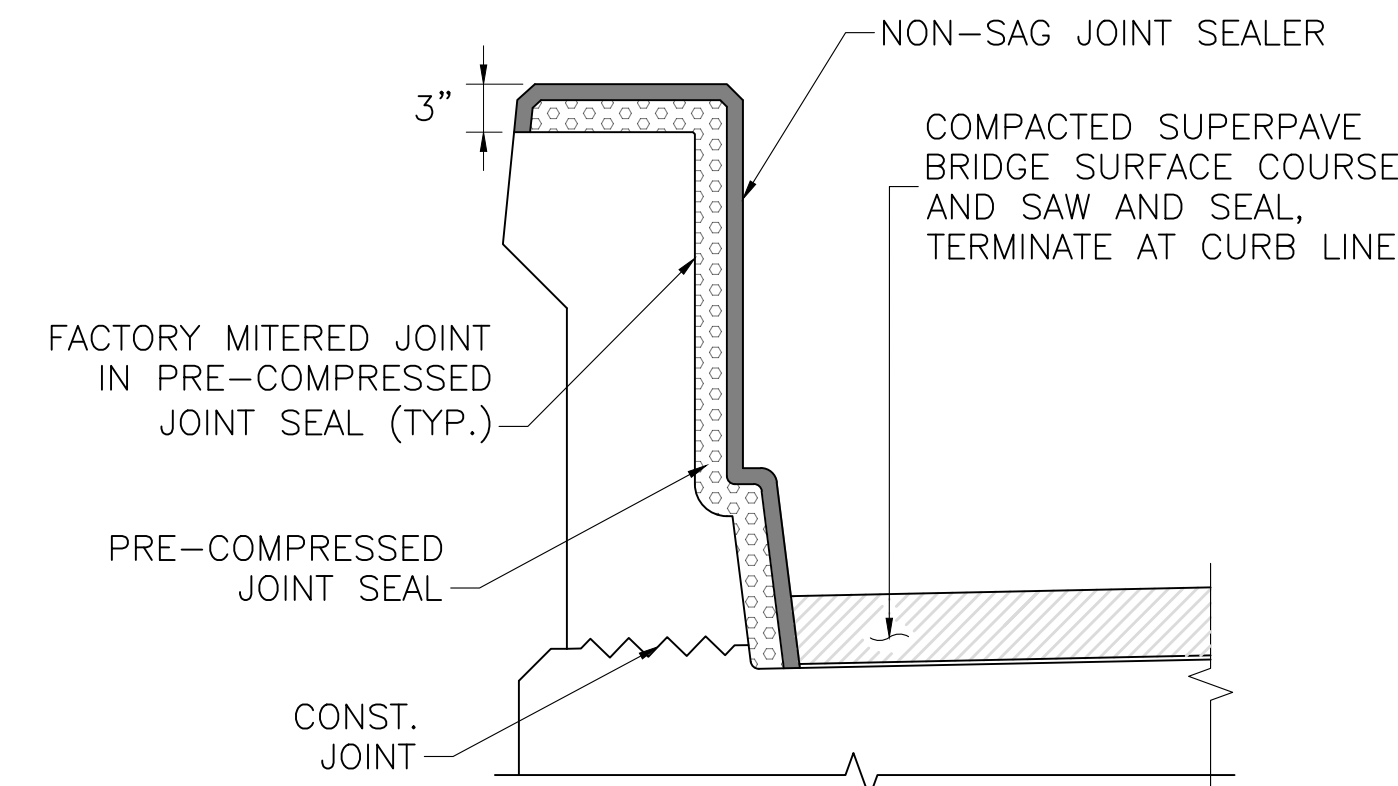
**TYPICAL PARAFFIN JOINT**  
SCALE: 1" = 1'-0"



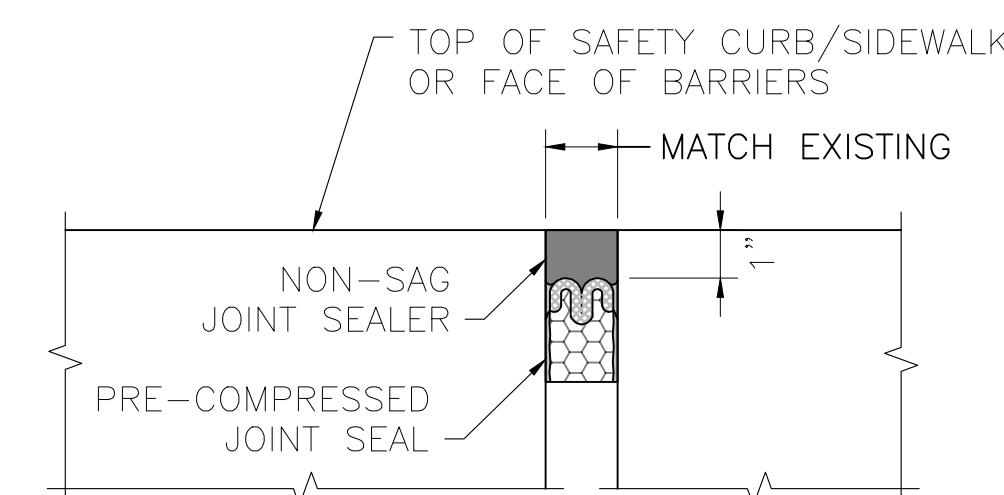
**FACE OF SAFETY CURB DETAILS**  
SCALE: 3" = 1'-0"

**NOTES:**

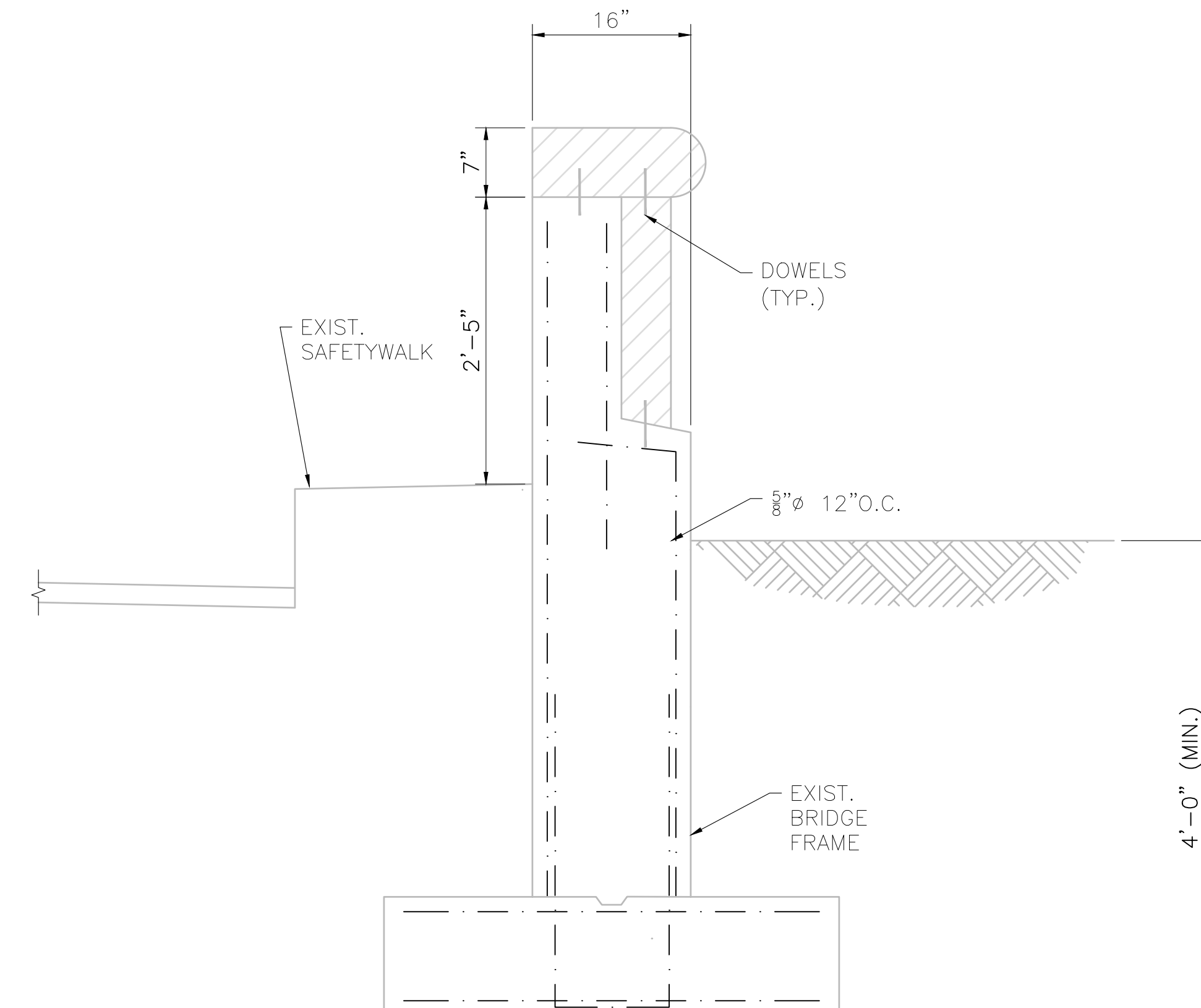
1. ALL CONCRETE ABOVE SLAB SHALL BE POURED IN ALTERNATING SECTIONS WITH NO LESS THAN 3 DAYS BETWEEN POURS
2. DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN AND EXPANSION JOINTS. END THE REINFORCEMENT 2" CLEAR OF JOINT.
3. PARAFFIN JOINT SHALL BE SQUARE TO FACE OF CURB.
4. BEFORE DRILLING AND GROUT CONTRACTOR SHALL PROVIDE DEPTH OF EMBEDMENT AND CALCULATIONS, SEE SPECIAL PROVISIONS FOR MORE INFORMATION UNDER ITEM 992.11 AND 992.12, SUB ITEM 912.



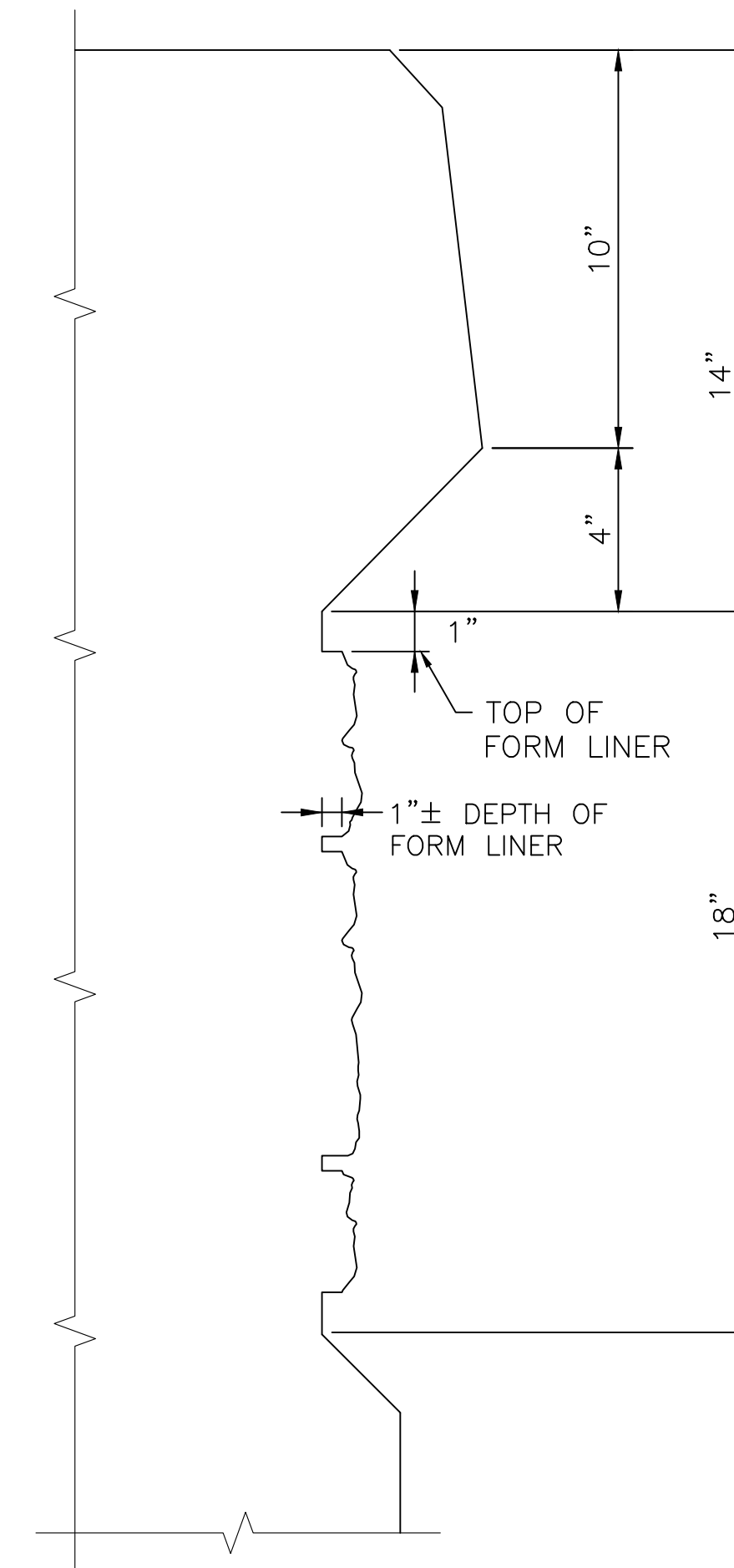
**JOINT DETAIL AT CP-MTL3 BARRIER**  
SCALE: 1" = 1'-0"



**JOINT DETAIL**  
SCALE : 3" = 1'-0"



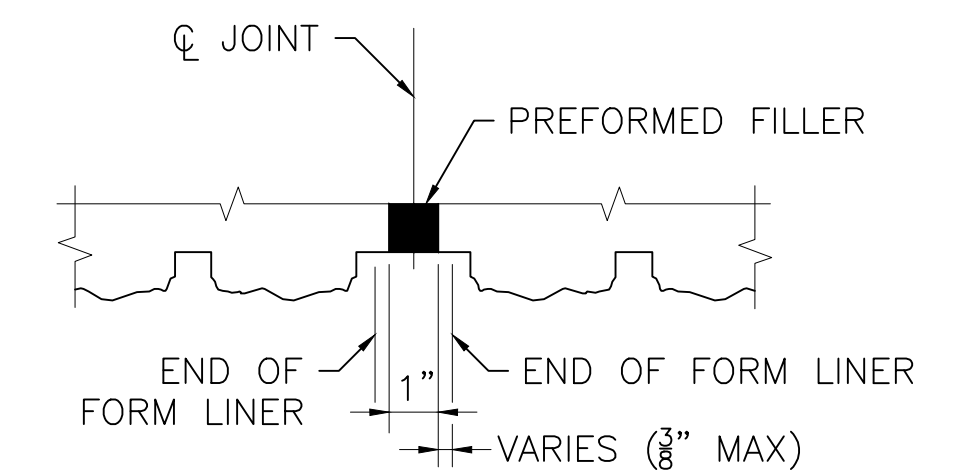
**EXIST. SECTION AT WING WALLS**  
SCALE: 1" = 1'-0"



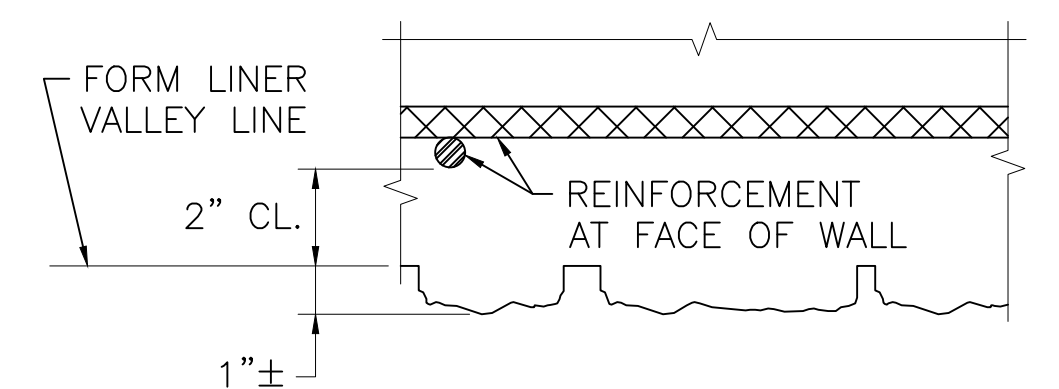
**PROP. CP-MTL3 BARRIER DETAIL**  
SCALE: 3"=1'-0"

**NOTES:**

1. ASHLAR STONE PANEL SHOWN. DETAILS OF PANEL TO BE USED SHALL BE SUBMITTED FOR APPROVAL
2. IF DEPTH OF APPROVED FORM LINER VARIES FROM 1" (VALLEY TO NOMINAL FACE), ALL DIMENSIONS SHALL BE ADJUSTED TO MAINTAIN NET REINFORCED CONCRETE SECTIONS AND REINFORCING COVER AS DETAILED
3. 1" MAXIMUM DEPTH OF FORM LINER SHALL BE USED AT AESTHETIC CP-MTL3 BARRIER. MODIFICATION TO A DEEPER FORM LINER WILL NOT BE PERMITTED



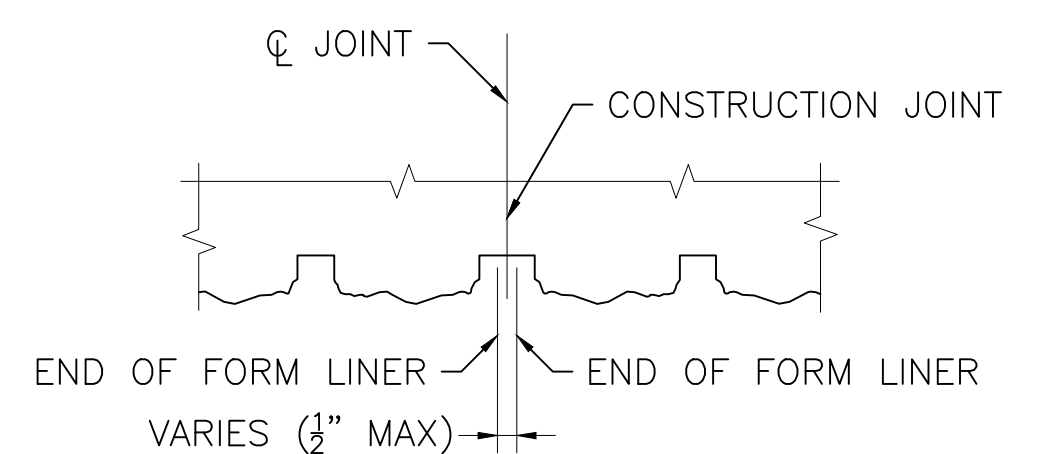
**EXPANSION/PARAFFIN JOINT**  
SCALE: 3"=1'-0"



**TYPICAL FORM LINER DETAIL**  
SCALE: 3"=1'-0"

**NOTE:**

THE CONTRACTOR SHALL MAKE SURE THAT THE FORM LINER PATTERN IS PERPENDICULAR TO THE SLOP AND LINED UP VERTICALLY FROM PANEL TO PANEL.



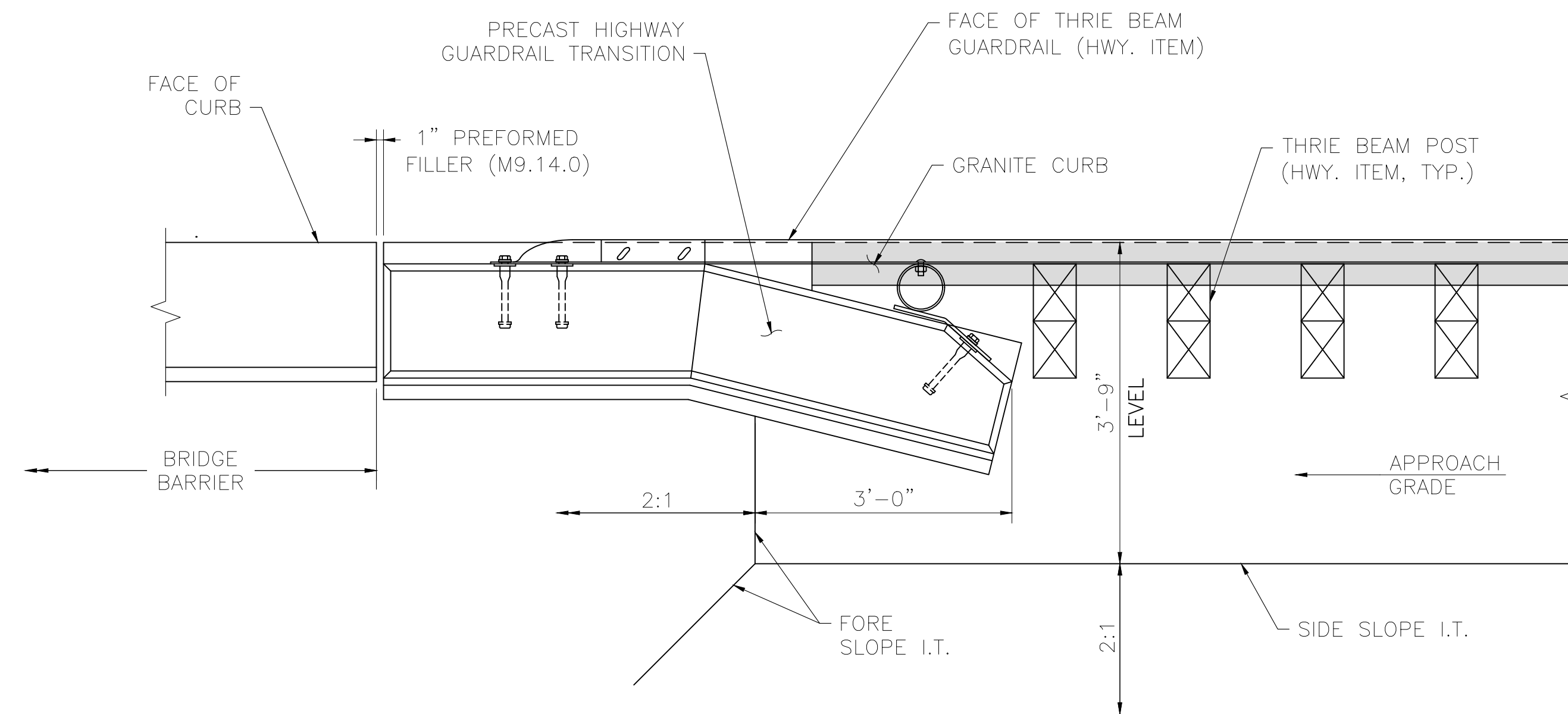
**CONSTRUCTION JOINT**  
SCALE: 3"=1'-0"

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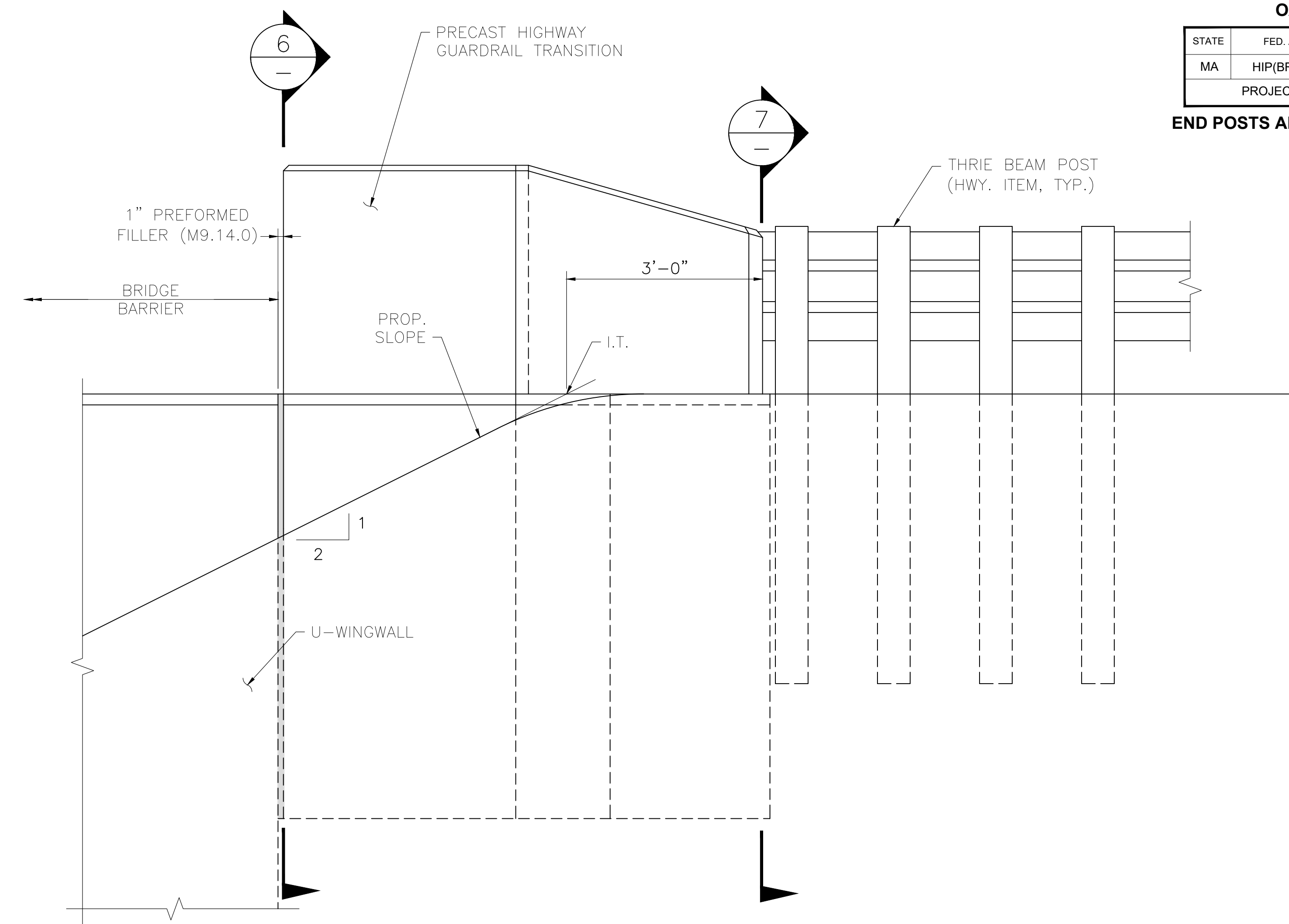
FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
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BARNSTABLE OAK STREET			
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	9	24
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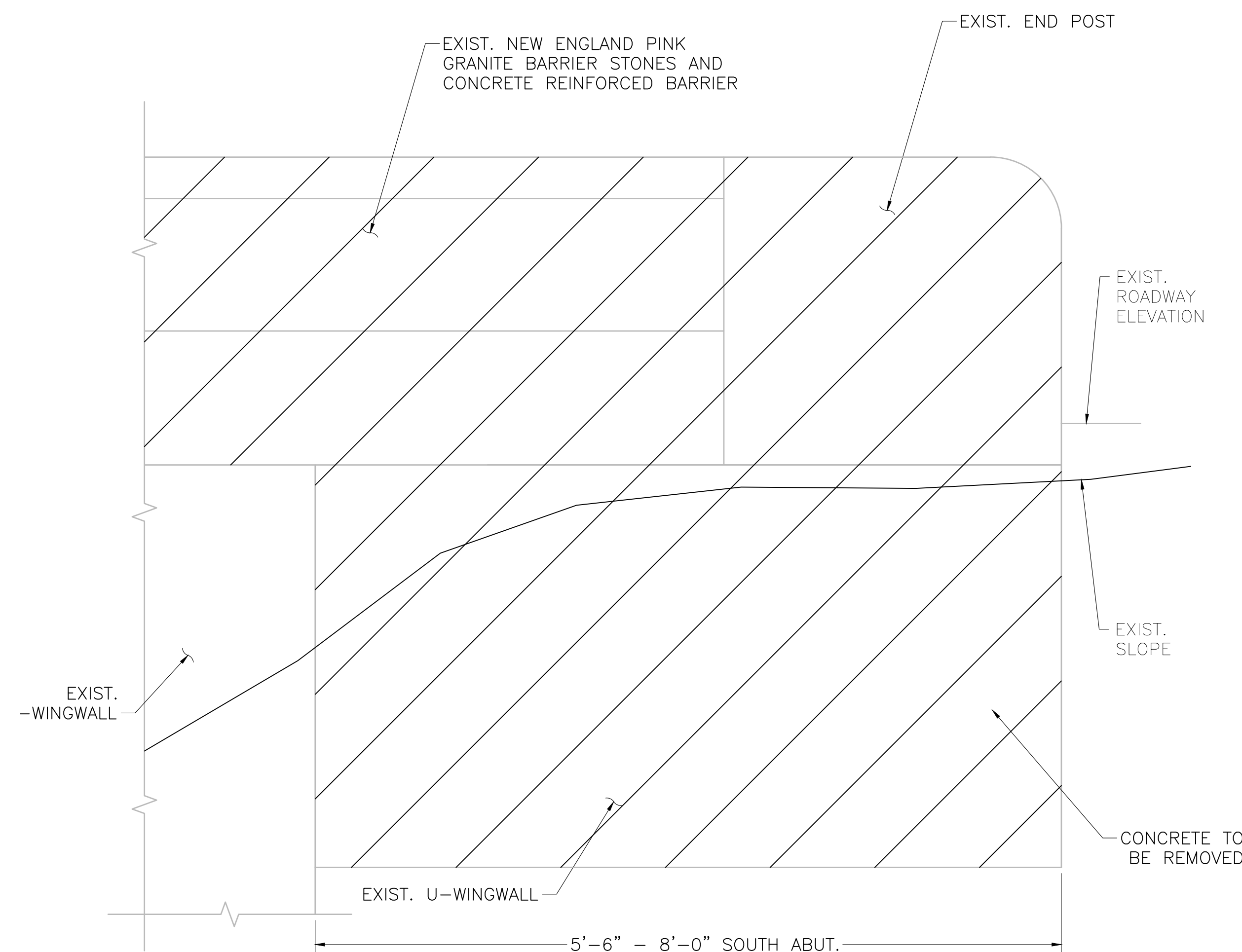
END POSTS AND EXCAVATION LIMITS



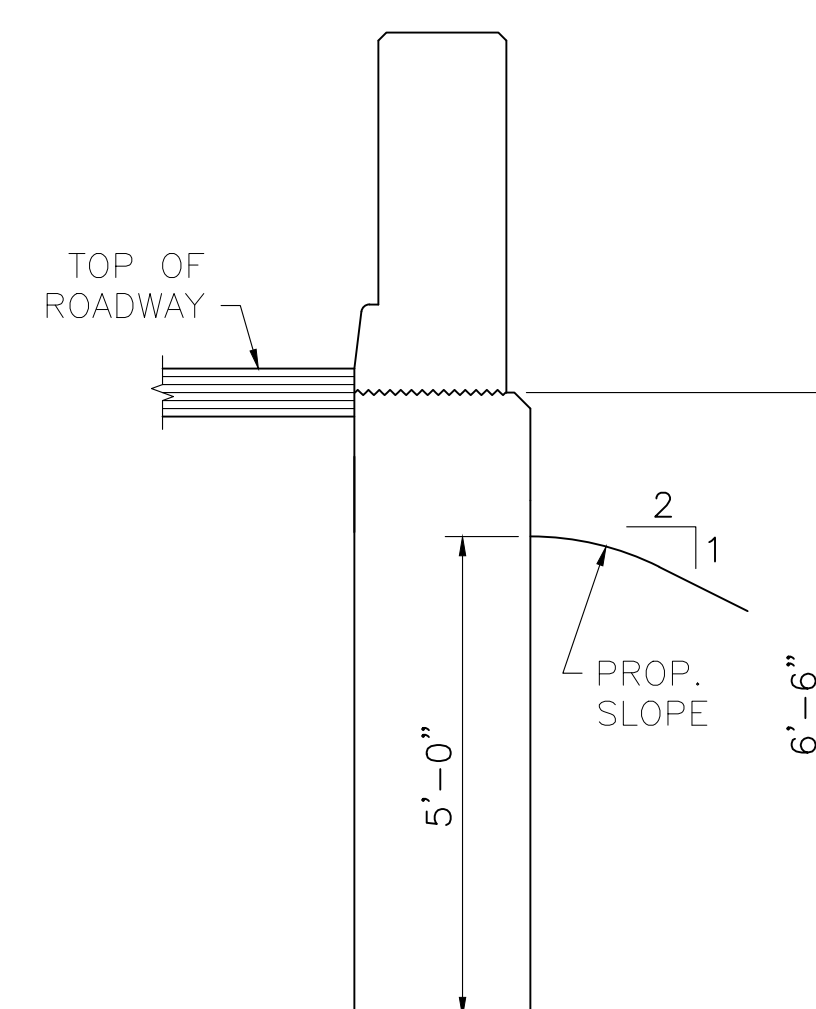
GRADE REQUIREMENTS PLAN  
SCALE: 3/4" = 1'-0"



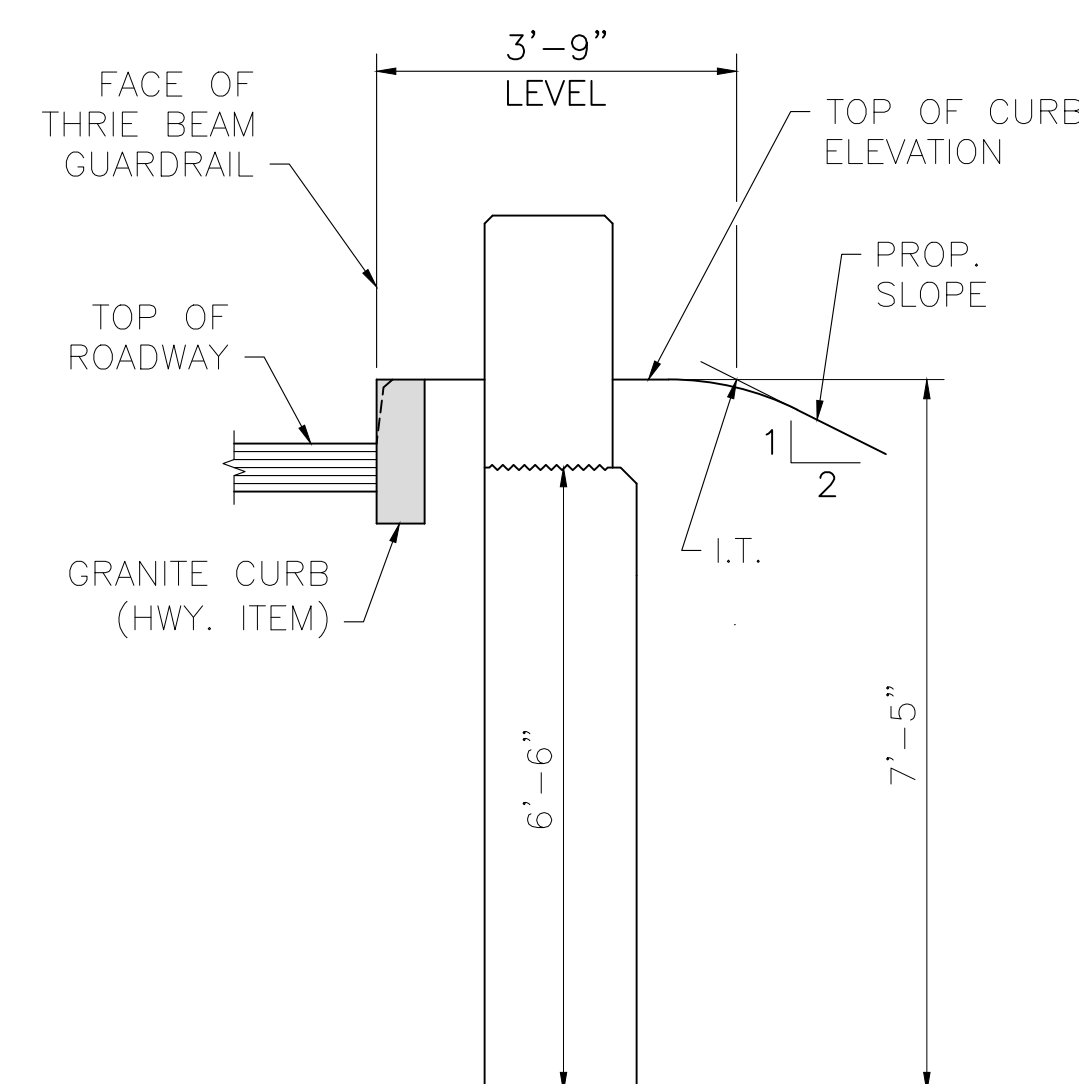
GRADE REQUIREMENTS - ELEVATION  
SCALE: 3/4" = 1'-0"



EXIST. END POST DEMOLITION LIMITS  
SCALE: 3/4" = 1'-0"



SECTION 6 AT SAFETY CURB  
SCALE: 1/2" = 1'-0"



SECTION 7 AT SAFETY CURB  
SCALE: 1/2" = 1'-0"

\*  
4AP  
4AN

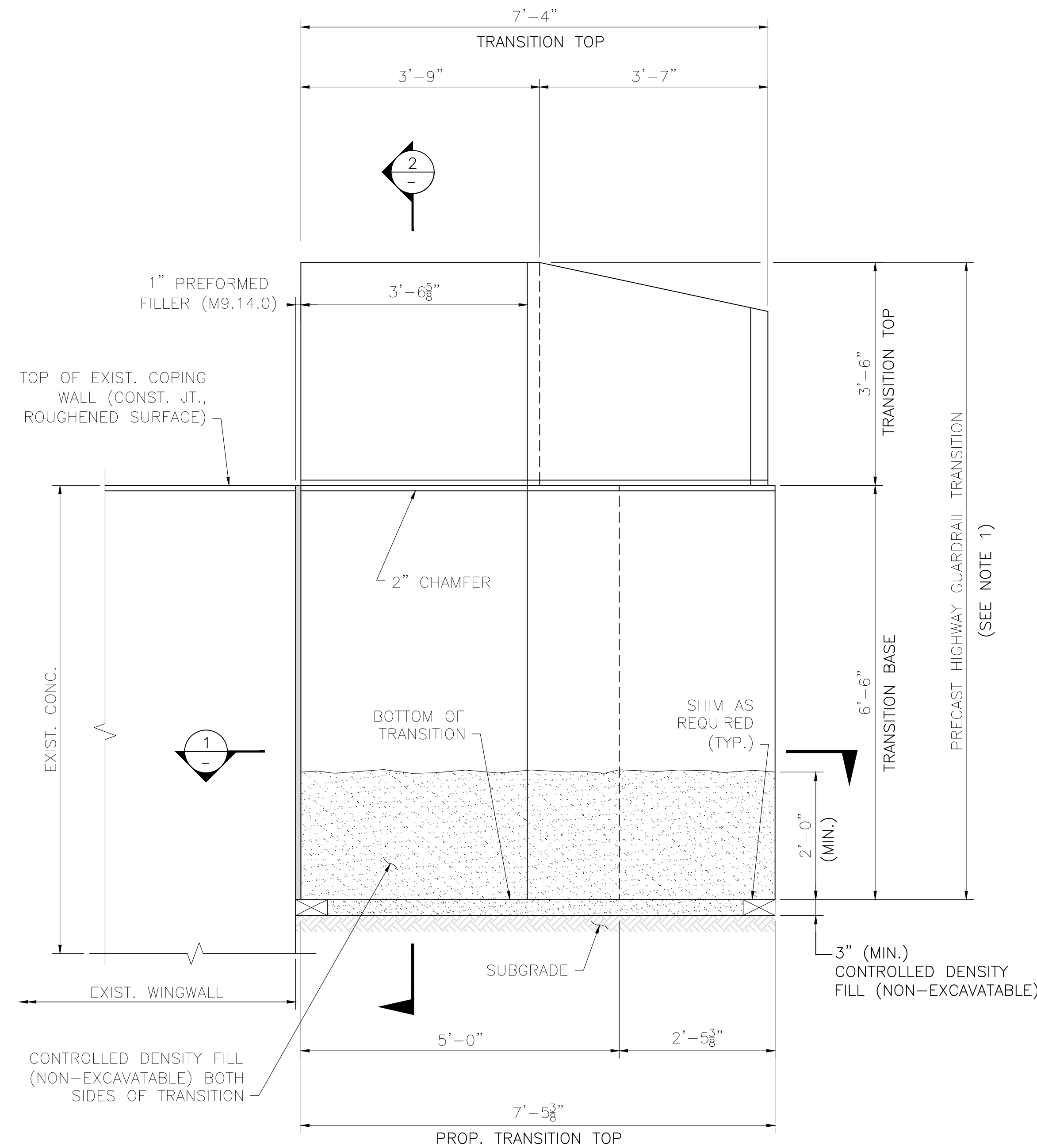
FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
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SHEET 9 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	10	24
PROJECT FILE NO.		613202	

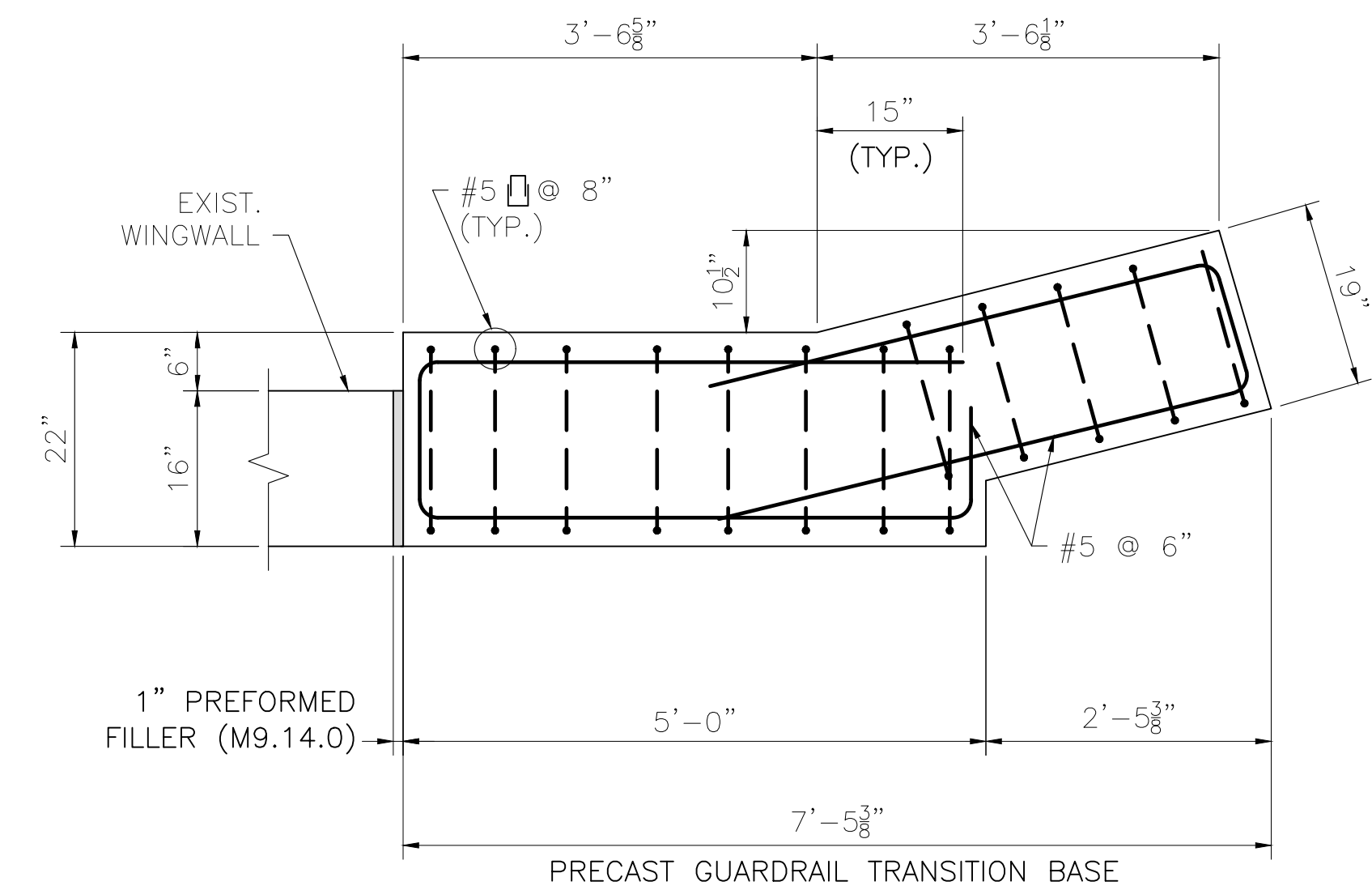
PRECAST GUARDRAIL TRANSITION DETAIL BOTTOM



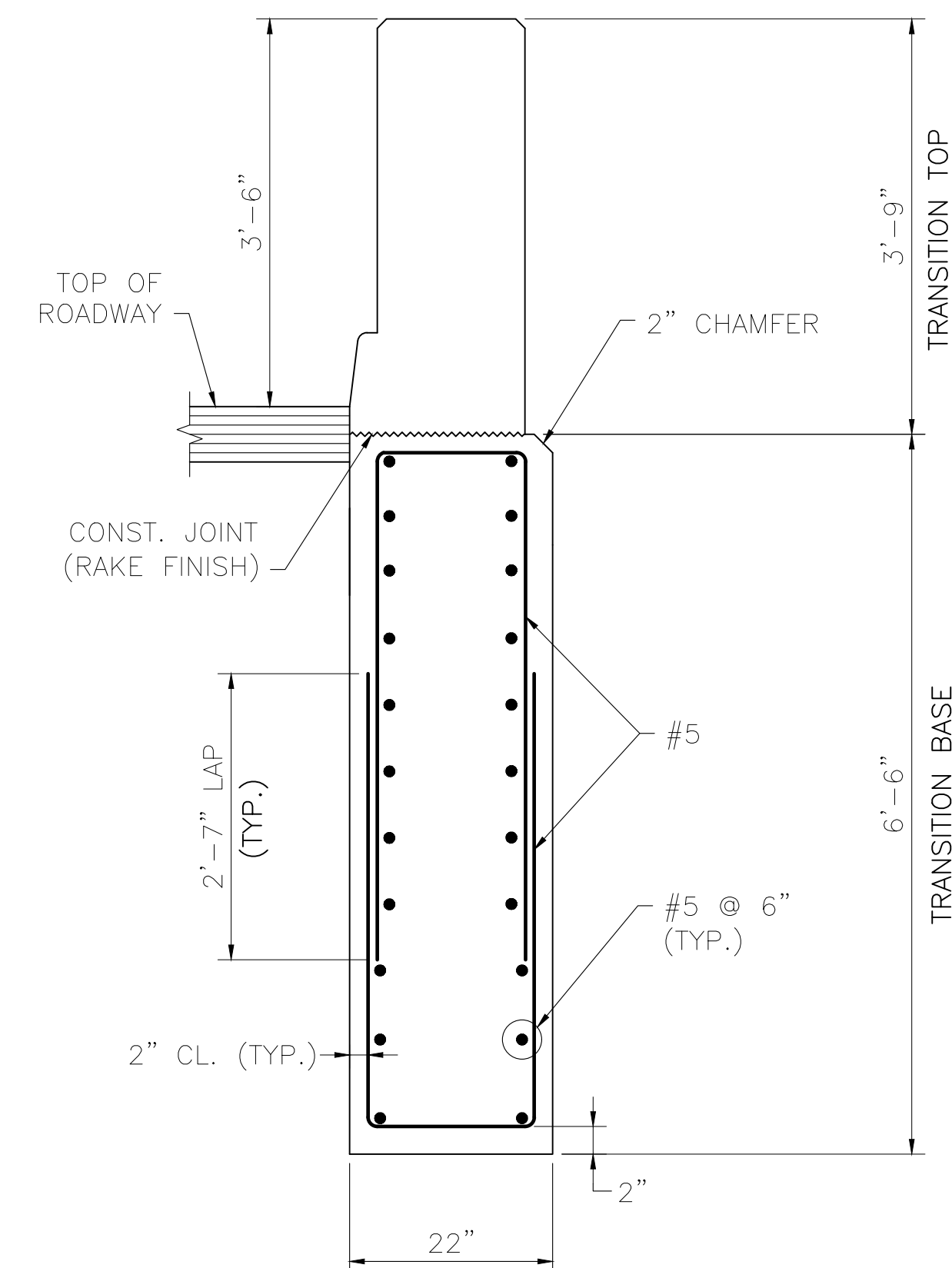
PRECAST GUARDRAIL TRANSITION  
ELEVATION AT U-WINGWALL  
SCALE:  $\frac{3}{4}$ " = 1'-0"

NOTES:

1. PRECAST GUARDRAIL TRANSITION SHALL BE 5000 PSI,  $\frac{3}{4}$  IN, 685 HP CEMENT CONCRETE.
2. GRAVEL BORROW SHALL BE PLACED AND THOROUGHLY COMPACTED TO THE GRADE OF 3" (MIN.) BELOW THE INTENDED BOTTOM OF THE PRECAST GUARDRAIL TRANSITION BASE AND TO A HEIGHT OF 2'-0" (MIN.) ON ALL SIDES OF THE TRANSITION BASE TO FORM A TRENCH IN WHICH TO SET THE TRANSITION. WHERE NO GRAVEL BORROW IS REQUIRED BELOW THE BASE, IT SHALL BE PLACED ON UNDISTURBED SOIL.
3. CONTRACTOR SHALL SET THE PRECAST GUARDRAIL TRANSITION SO THAT TOP OF THE BASE IS 3" BELOW GRADE AND ALIGNED, AND BACKFILL PRECAST GUARDRAIL TRANSITION WITH CONTROLLED DENSITY FILL (NON-EXCAVATABLE) TO THE ELEVATION SHOWN. CONTRACTOR SHALL FIELD VERIFY FINAL ELEVATION.



SECTION 1  
SCALE:  $\frac{3}{4}$ " = 1'-0"



SECTION 2 AT SAFETY CURB  
SCALE:  $\frac{3}{4}$ " = 1'-0"

NOTES:

1.  $\frac{1}{2}$ " H x 1" D GROOVE. ALIGN WITH GROOVE AT TOP OF STRIATIONS.
2. REINFORCEMENT OF THE TRANSITION TOP IS NOT SHOWN FOR CLARITY.

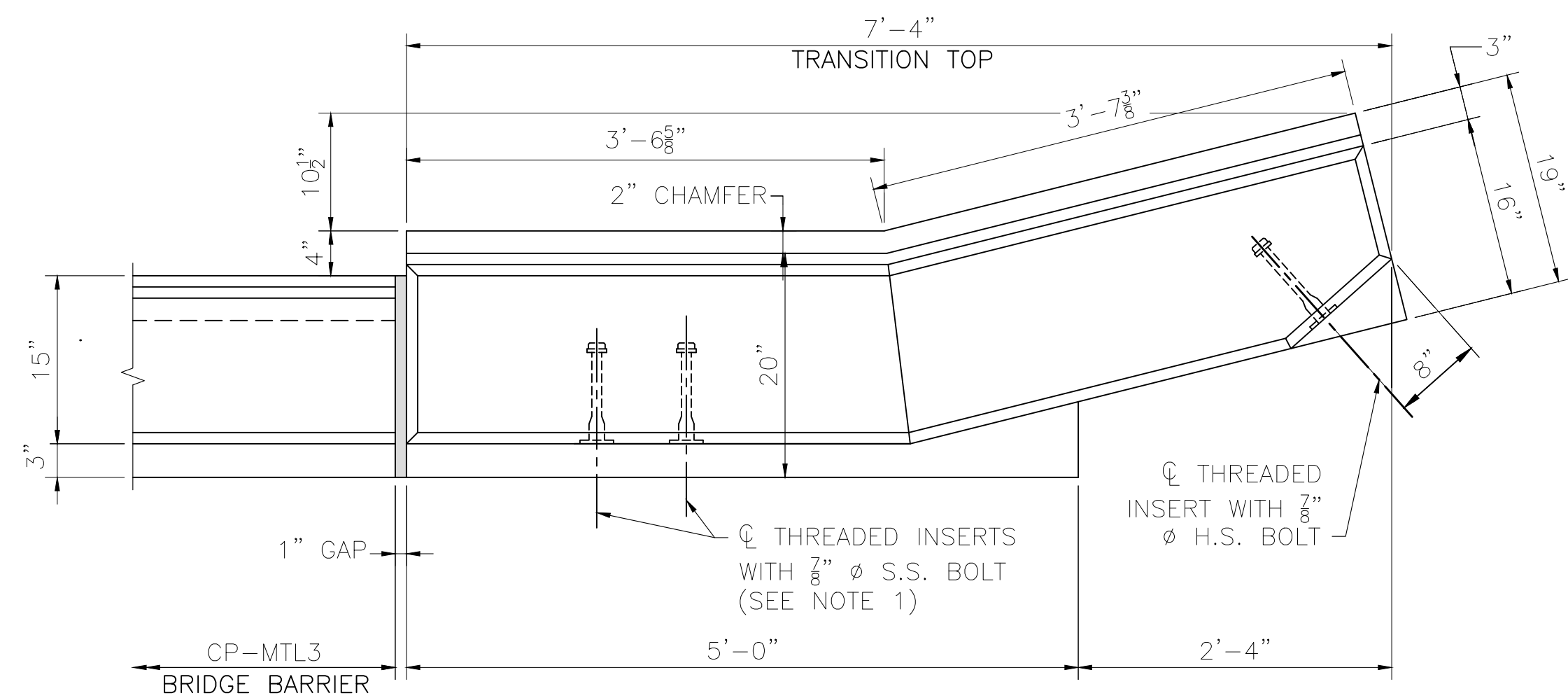
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4AP  
4AN

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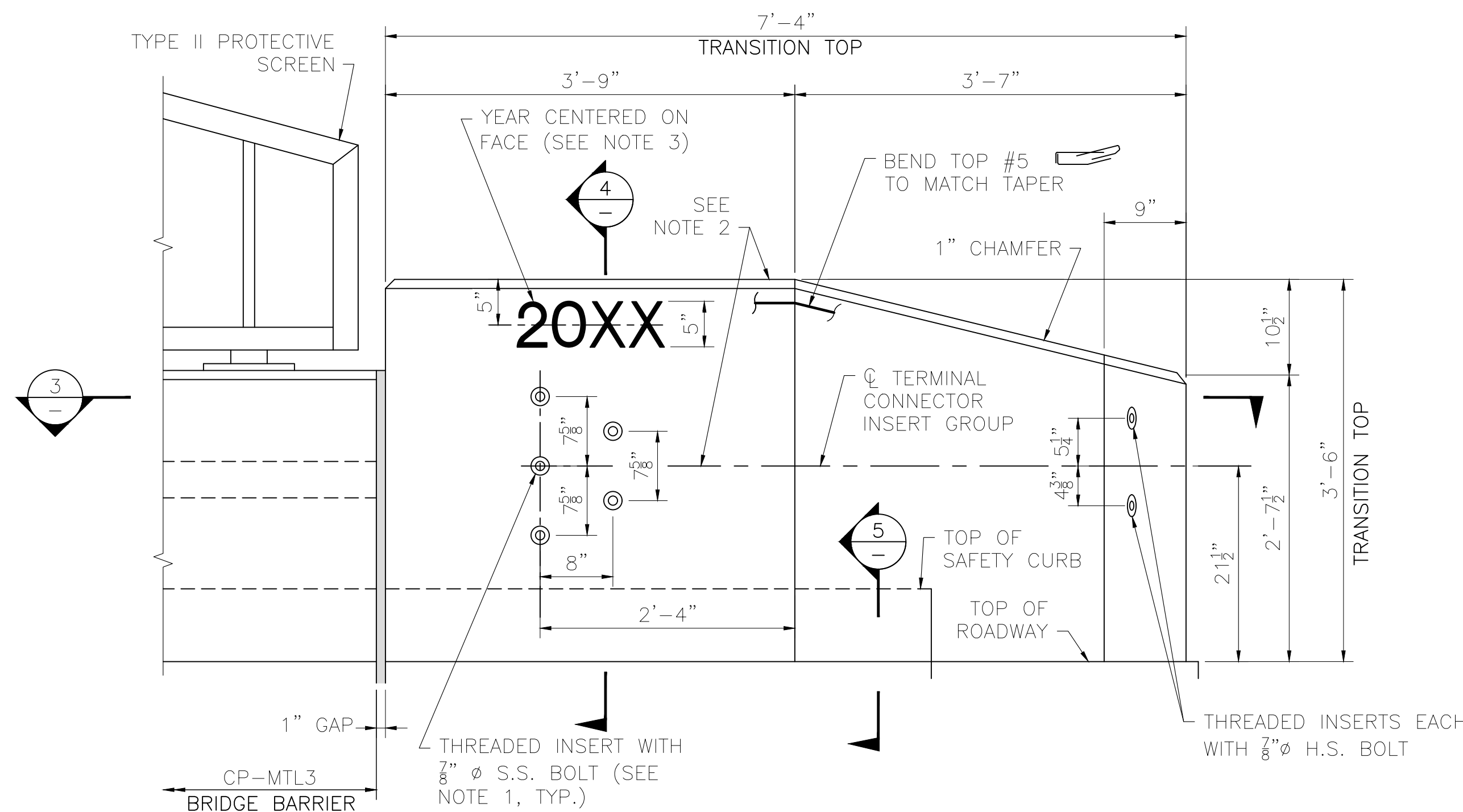
BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	11	24
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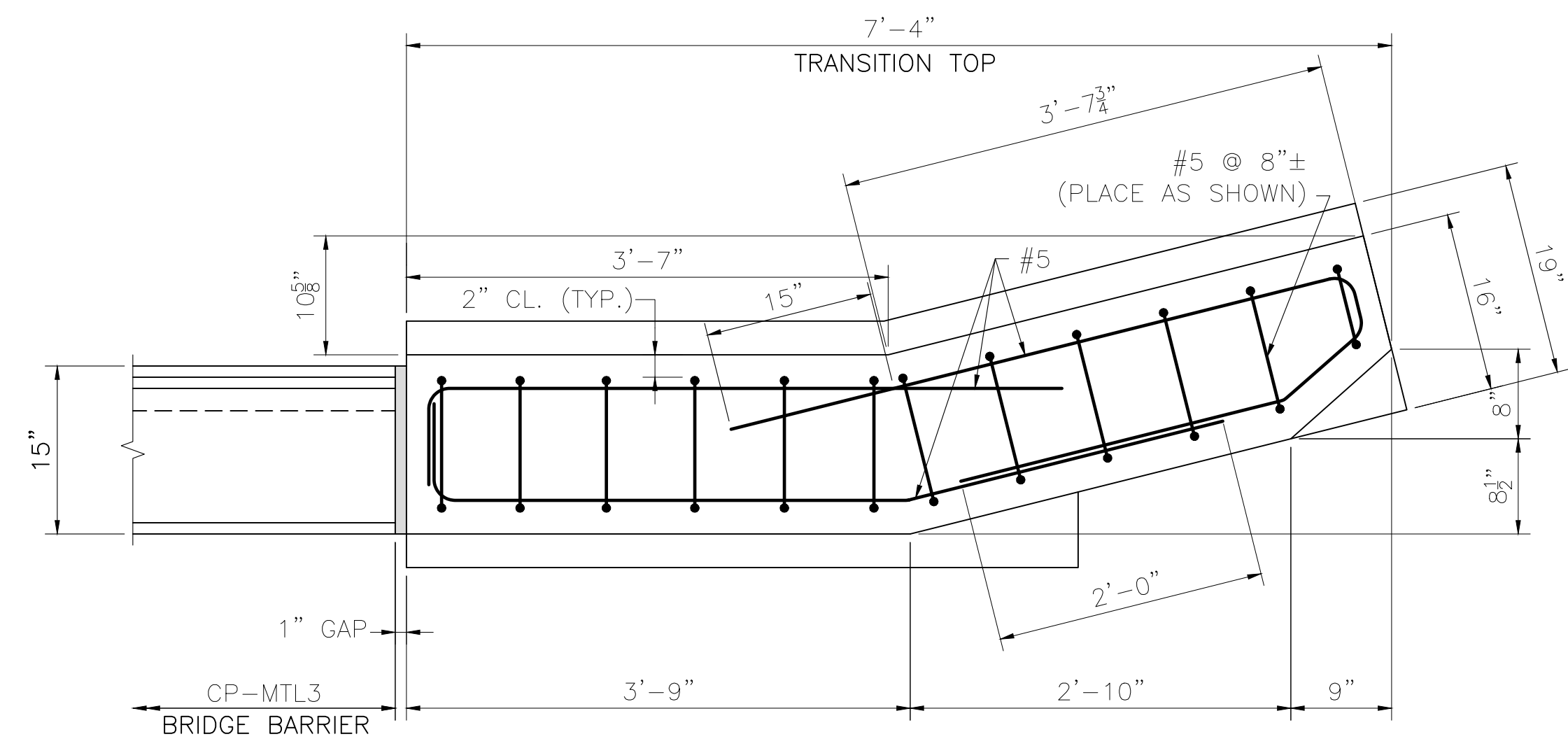
PRECAST GUARDRAIL TRANSITION DETAIL TOP



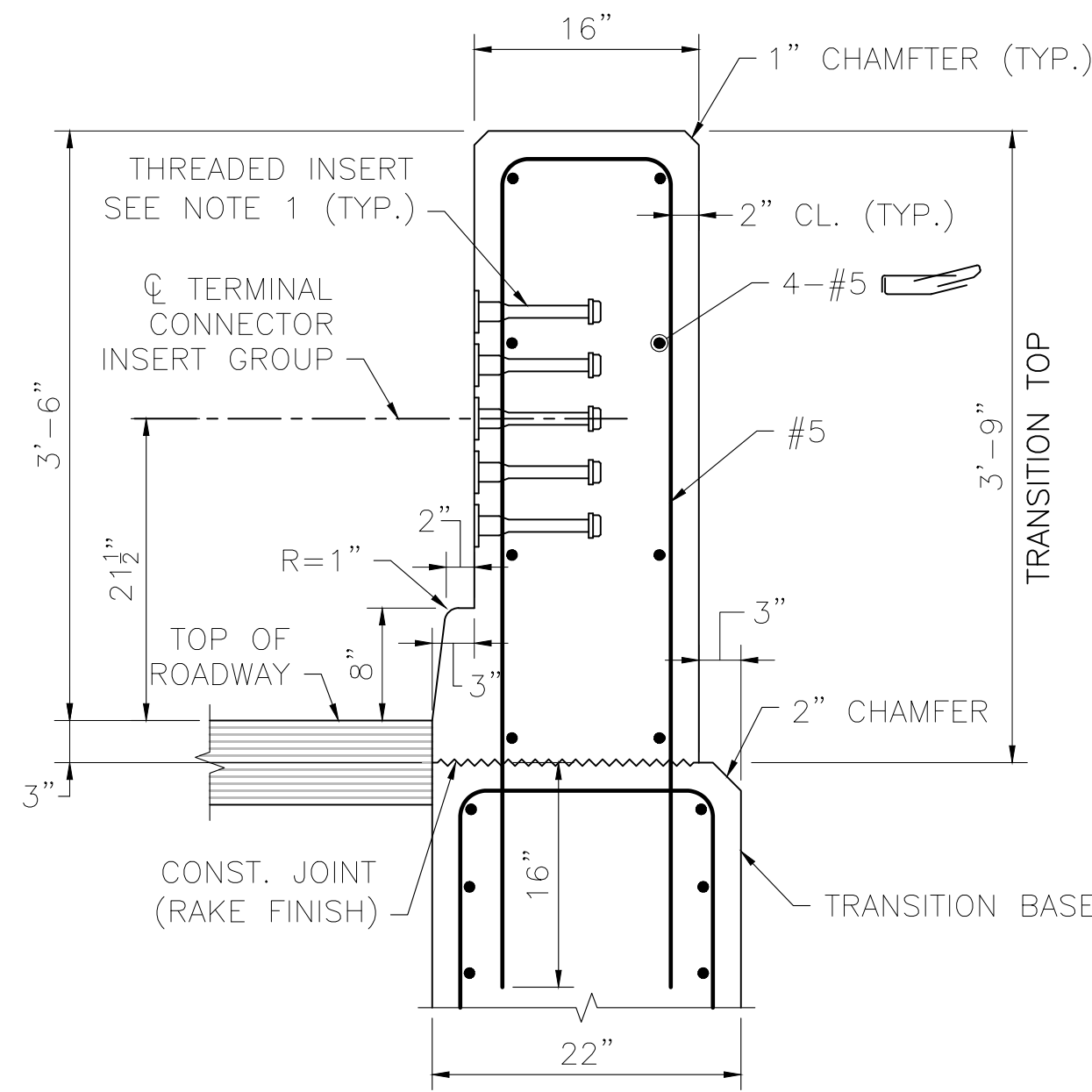
PLAN AT SAFETY CURB  
SCALE: 1" = 1'-0"



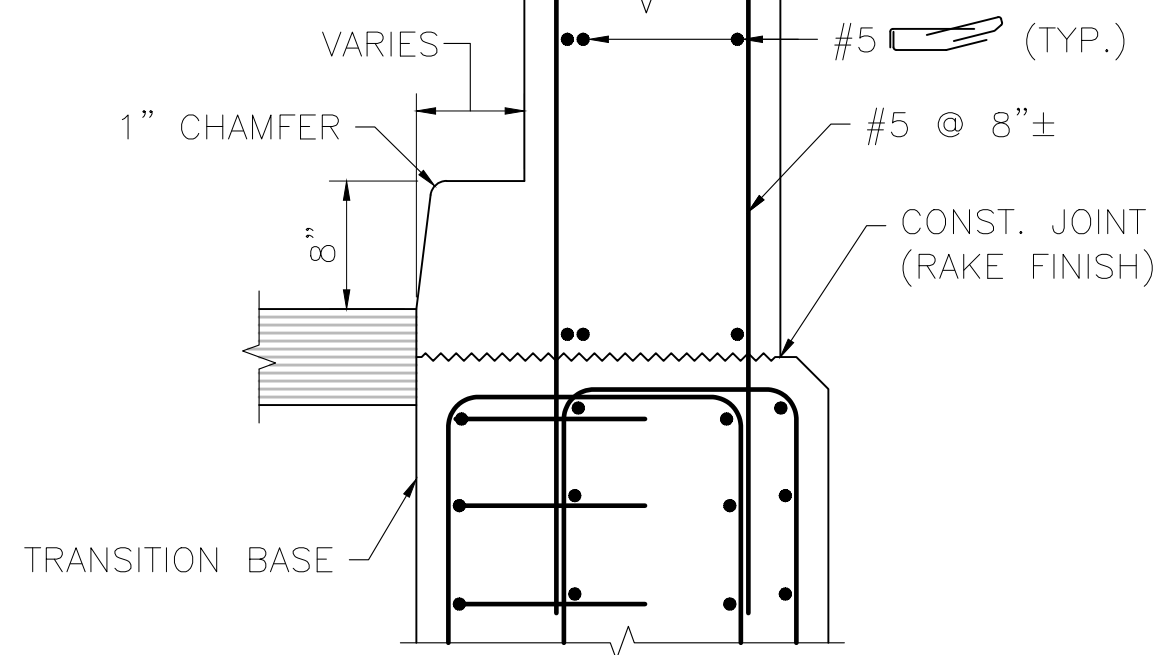
ELEVATION AT ROADWAY  
SCALE: 1" = 1'-0"



SECTION 3  
SCALE: 1" = 1'-0"



SECTION 4 AT SAFETY CURB  
SCALE: 1" = 1'-0"



SECTION 5 AT SAFETY CURB  
SCALE: 1" = 1'-0"

NOTES:

1. THREADED INSERTS SHALL BE PREQUALIFIED BY THE MANUFACTURER AS BEING CAPABLE OF DEVELOPING A NOMINAL SHEAR RESISTANCE OF 20 KIPS PER  $\frac{7}{8}$ "  $\phi$  S.S. BOLT. S.S. BOLTS SHALL BE  $\frac{7}{8}$ "  $\phi$  x  $1\frac{1}{2}$ " LONG FULLY THREADED AISI TYPE 304N STAINLESS STEEL. INSERTS FOR  $\frac{7}{8}$ " S.S. BOLTS SHALL BE GALVANIZED AND CAST INTO THE TRANSITION.
2. FOR AN APPROACH GRADE UP TO 3%, THE TRANSITION MAY BE CAST SQUARE AND SET PLUMB WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SQUARE TO THE POST.  
  
FOR AN APPROACH GRADE IN EXCESS OF 3%, THE TRANSITION TOP AND THE TOP OF THE BRIDGE BARRIERS SHALL FOLLOW THE APPROACH GRADE. THE HEIGHT OF THE TRANSITION TOP SHALL VARY PROVIDED THAT THE MINIMUM DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE MET. THE BOTTOM OF THE TRANSITION BASE SHALL BE SET LEVEL WITH THE MINIMUM EMBEDMENT DEPTH SHOWN. THE TERMINAL CONNECTOR INSERT GROUP SHALL BE SLOPED TO FOLLOW THE APPROACH GRADE.
3. USE LATEST CONTRACT COMPLETION YEAR IN EFFECT WHEN THE FIRST GUARDRAIL TRANSITION IS CAST. USE THIS YEAR FOR BOTH GUARDRAIL TRANSITIONS. DATE TO BE PLACED ON B-01-012 (4AP) ON THE NORTHWEST TRANSITION AND ON B-01-014 (4AN) ON THE SOUTHEAST TRANSITION
4. ALL CONCRETE FOR THE PRECAST HIGHWAY GUARDRAIL TRANSITION SHALL BE 5000 PSI,  $\frac{3}{4}$ ", 685 HP CEMENT CONCRETE.
5. LIFTING DEVICES (NOT SHOWN), INCLUDING THEIR NUMBER AND LOCATION, SHALL BE DESIGNED AND DETAILED BY THE PRECASTER. THEY SHALL BE GALVANIZED AND SHALL BE PLACED AND RECESSED IN POCKETS TO PROVIDE  $1\frac{1}{2}$ " CLEAR COVER TO THE FACE OF THE TRANSITION CONCRETE. THESE DEVICES SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS ALONG WITH ALL SUPPORTING CALCULATIONS AND/OR CATALOG CUTS. ONCE THE PRECAST TRANSITION IS SET IN PLACE, THE LIFTING DEVICE POCKETS SHALL BE FILLED WITH A NON-SHRINK GROUT THAT MATCHES THE COLOR OF THE TRANSITION CONCRETE WHEN CURED AND THE FILLED POCKETS SHALL BE RUBBED WITH A CORUNDUM STONE TO BLEND OUT THE JOINTS.

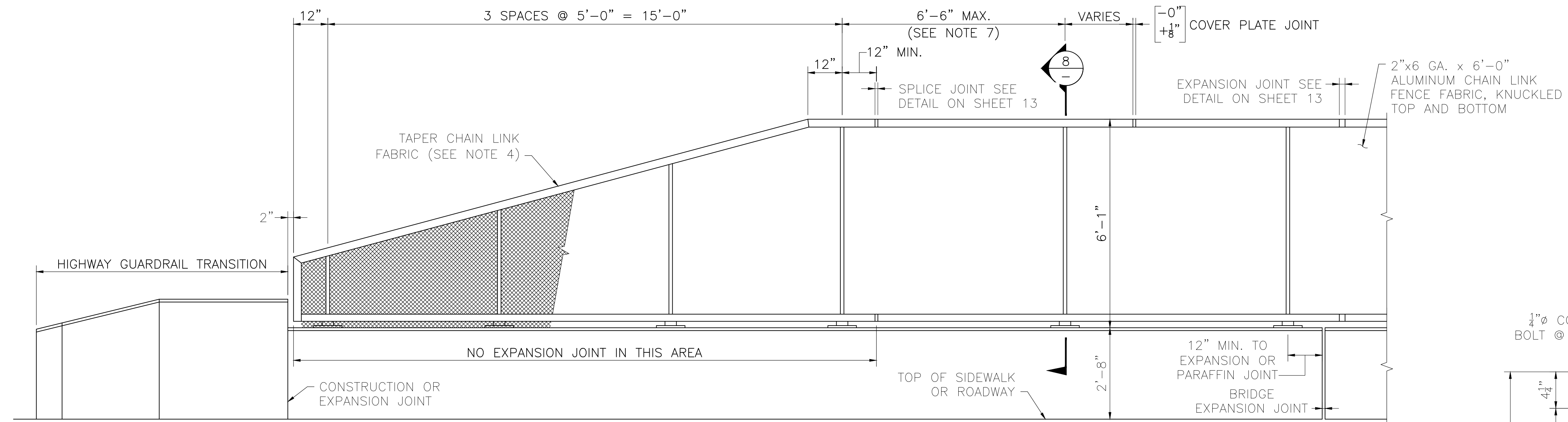
\*  
4AP  
4AN

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**BARNSTABLE  
OAK STREET**

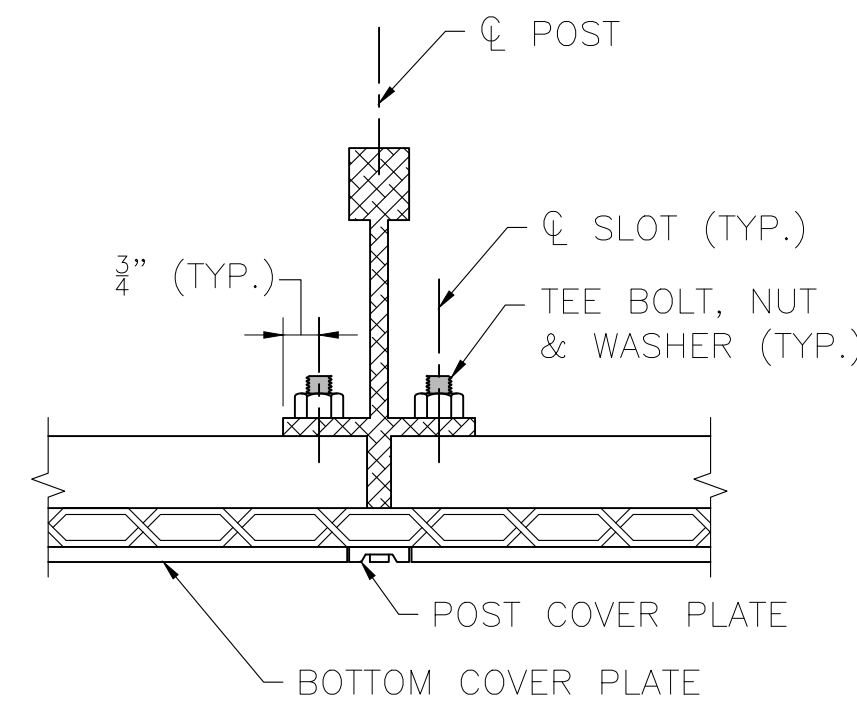
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	13	24
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## TYPE II PROTECTIVE SCREEN 1



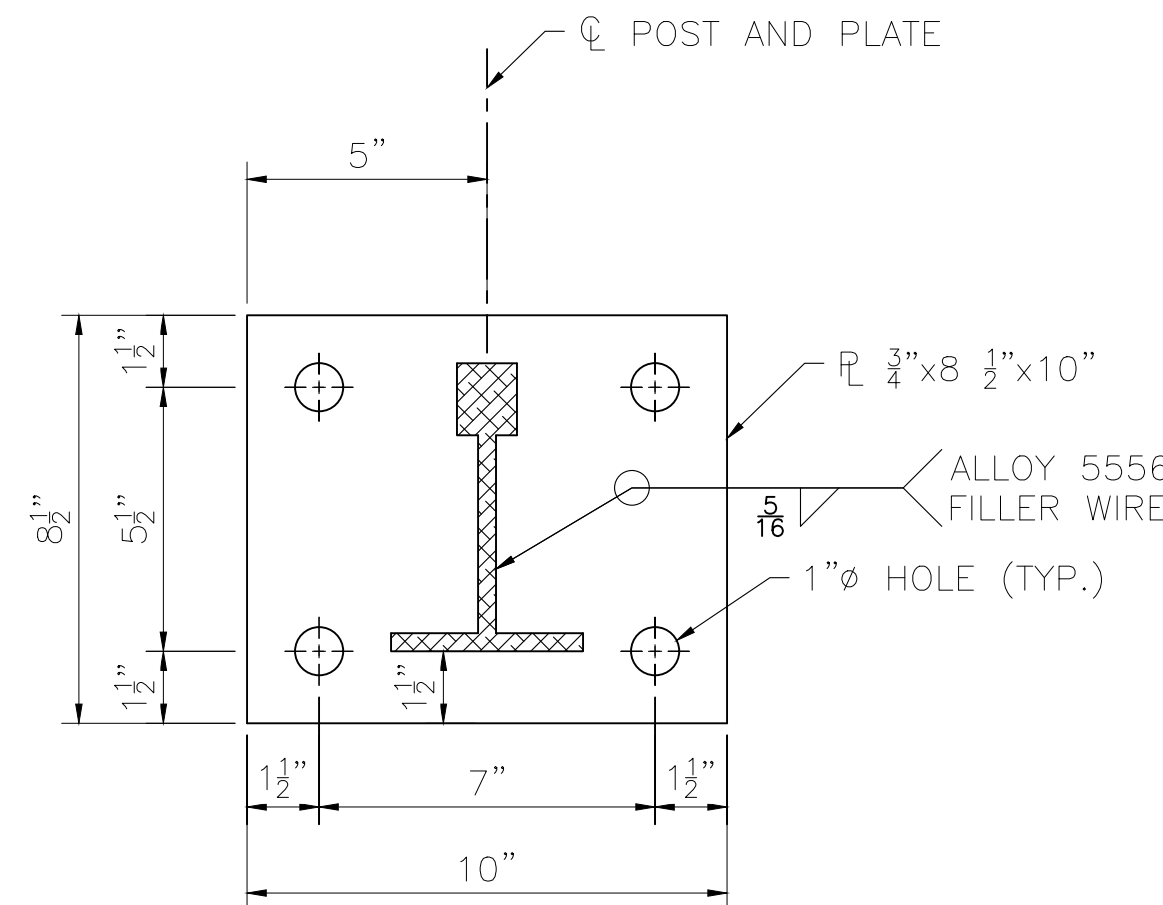
### PROTECTIVE SCREEN ELEVATION

SCLAE:  $1/2'' = 1'-0''$



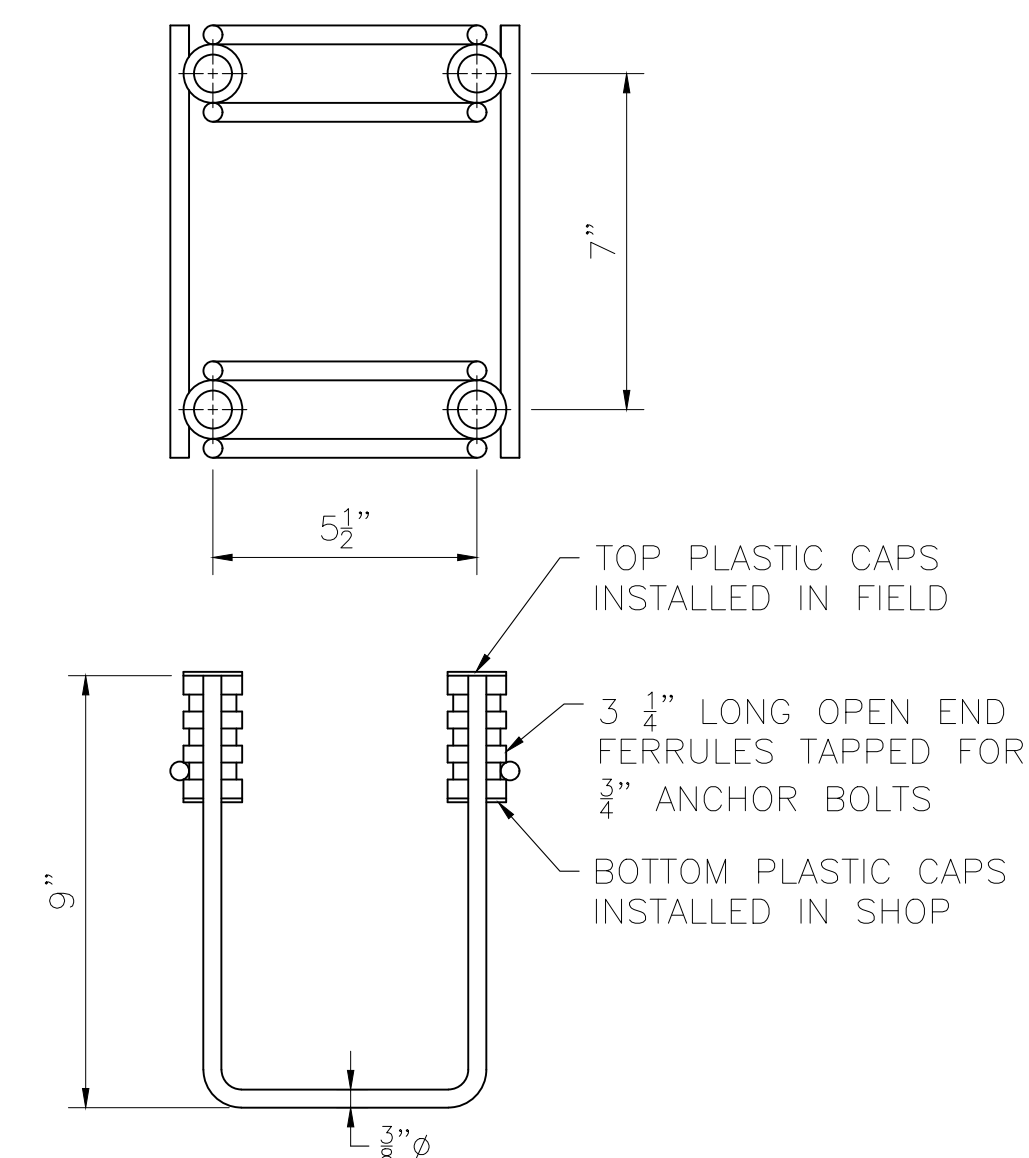
SECTION 9

SCALE: 3" = 1'-0"



### BASE PLATE DETAIL

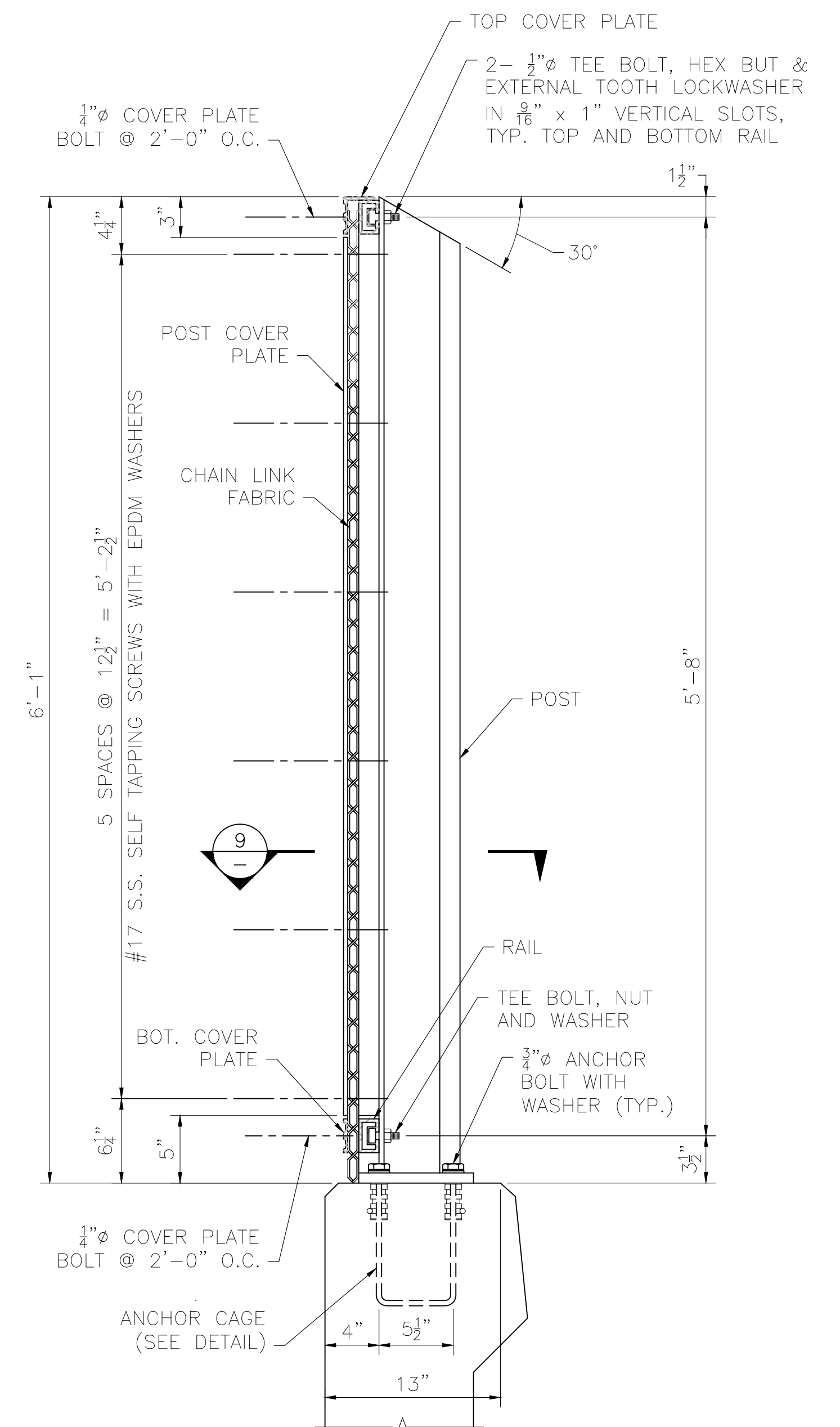
SCALE: 3" = 1'-0"



NOTE:  
GALVANIZED OR ELECTROPLATED FINISH

ANCHOR CAGE

SCALE: 3" = 1'-0"



## SECTION 8

SCALE 1-1/2"=1'-0"

GENERAL NOTES:

1. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR POSTS, IF POSSIBLE.
2. RAILS SHALL HAVE AN EXPANSION JOINT IN THE PANEL OVER A BRIDGE EXPANSION JOINT AND AT 30 FOOT MAXIMUM SPACING ELSEWHERE.
3. BOTTOM OF POST BASE PLATE TO BE SET ON A  $\frac{1}{4}$ " MOLDED FABRIC BEARING PAD (M9.16.2). THE THICKNESS OF THE PAD SHALL BE IGNORED BY THE DETAILER.
4. THE CHAIN LINK FABRIC SHALL BE SECURED BY KNUCKLING TOGETHER THE CUT ENDS OF THE FABRIC WIRE IN A MANNER SIMILAR TO THE ORIGINALLY MANUFACTURED END.
5. WHERE THE R.O.W. FENCE MUST MEET THE SCREEN, USE THE SQUARE END TO HIGHWAY GUARDRAIL TRANSITION DETAIL.
6. THE SCREEN END TREATMENT TO BE USED (SQUARE OR TAPERED) IS SPECIFIED ELSEWHERE ON THE CONSTRUCTION DRAWINGS.
7. POST SPACING SHALL BE UNIFORM BETWEEN TAPERED ENDS.
8. SET POSTS PERPENDICULAR TO GRADE FOR GRADES UP TO 3%. SET POSTS PLUMB FOR GRADES GREATER THAN 3%.
9. USE 2" x 6 GA. FABRIC

FINISHES:

1. POSTS, RAILS, COVER PLATES AND SPLICE PLATES SHALL RECEIVE A DARK BRONZE ANODIZED FINISH.
2. CHAIN LINK FABRIC SHALL RECEIVE A 4±1 MIL POLYESTER POWDER COAT FINISH. THE COLOR SHALL BE DARK BRONZE TO MATCH COLOR OF ANODIZED ALUMINUM FRAMEWORK.
3. #17 SELF TAPPING SCREWS AND 1/2" Ø COVER PLATE BOLTS TO BE COLORED TO MATCH THE ANODIZED EXTRUSIONS.

MATERIALS:

EXTRUSIONS & PLATES\_\_\_\_\_ASTM B 221, ALLOY 6061-T6

CHAIN LINK FABRIC\_\_\_\_\_AASHTO M 181 TYPE III (ALLOY 6061-T89 OR T94)

SELF TAPPING SCREWS\_\_\_\_\_TYPE 304 STAINLESS STEEL WITH  $\frac{1}{4}$ " THICK EPDM  
(ETHYLENE PROPYLENE DIENE MONOMER) WASHERS

ANCHOR BOLTS\_\_\_\_\_AASHTO M 164 GALVANIZED  
(ROTATION CAPACITY TEST NOT REQUIRED)

TEE BOLTS\_\_\_\_\_ASTM A 307 GALVANIZED OR TYPE 304 STAINLESS S

COVER PLATE BOLTS\_\_\_\_\_TYPE 304 STAINLESS STEEL WITH OVERSIZED STAINL  
WASHER AND STAINLESS NUT WITH NYLON INSERT

## TYPE II PROTECTIVE SCREEN

*
4AP 4AN

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SHEET 13 OF 24 SHEETS      BRIDGE NO. B-01-012 & B-01-014 (\*)



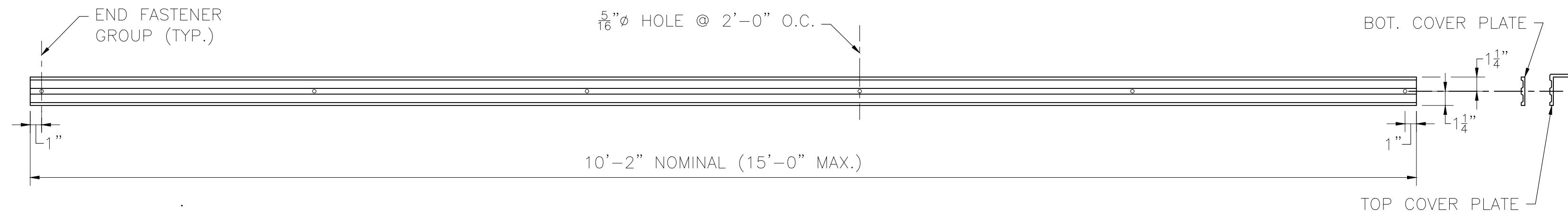
BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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TYPE II PROTECTIVE SCREEN 2

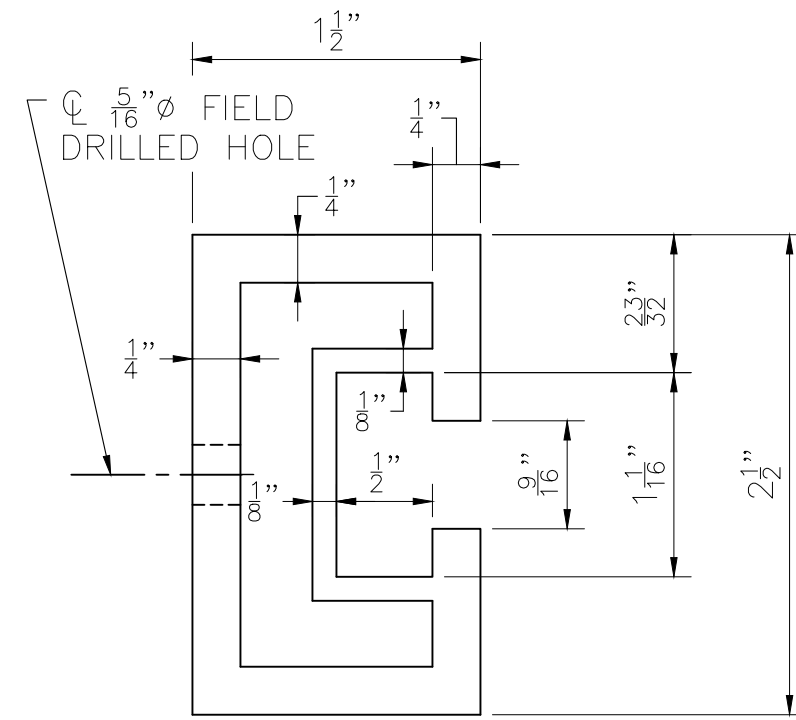
COVER PLATE NOTES:

- COVER PLATES MAY BE CONTINUOUS OVER A RAIL SPLICE. COVER PLATES SHALL BE FIELD CUT AS REQUIRED TO CLEAR THE EXPANSION JOINT. SEE DETAIL AT EXPANSION JOINT.
- FIELD DRILL  $\frac{5}{16}$ "  $\phi$  HOLE 1" FROM THE FIELD CUT END OF A COVER PLATE, UNLESS THERE IS AN EXISTING HOLE WITHIN 6" FROM THE COVER PLATE END.
- FIELD PAINT THE FIELD CUT ENDS OF THE COVER PLATES TO MATCH THE ANODIZED COLOR.



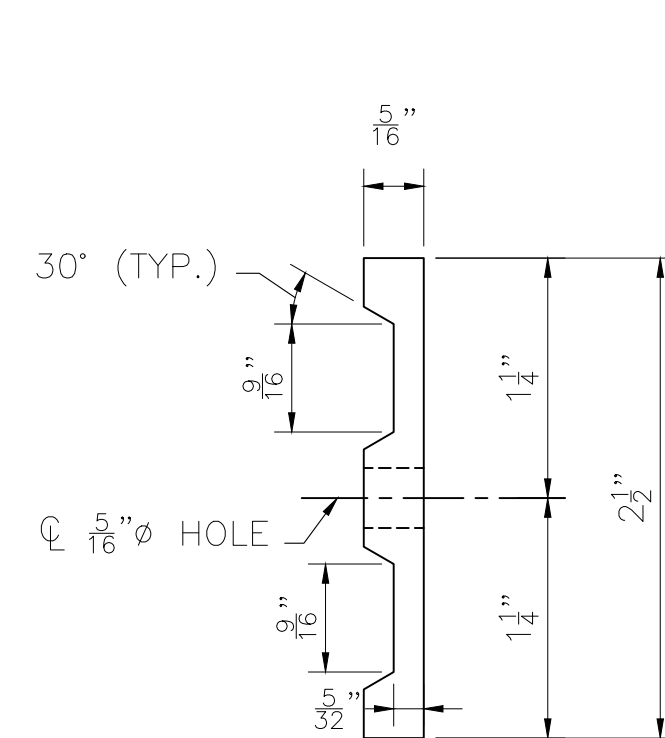
TOP AND BOTTOM COVER PLATE

SCALE: 1-1/2" = 1'-0"



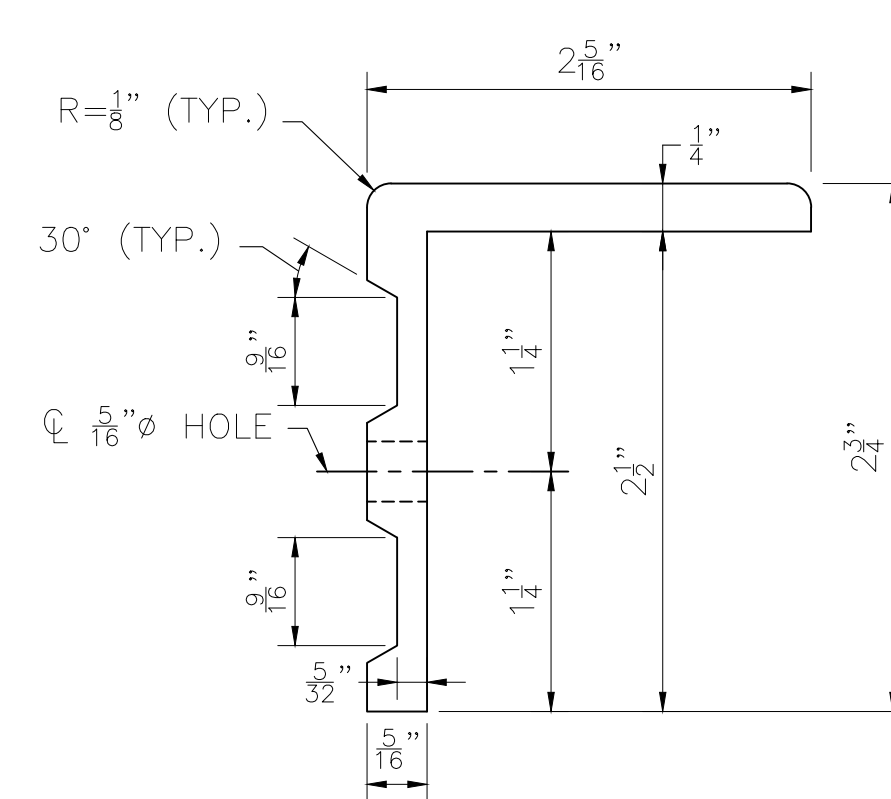
RAIL EXTRUSION

FULL SCALE



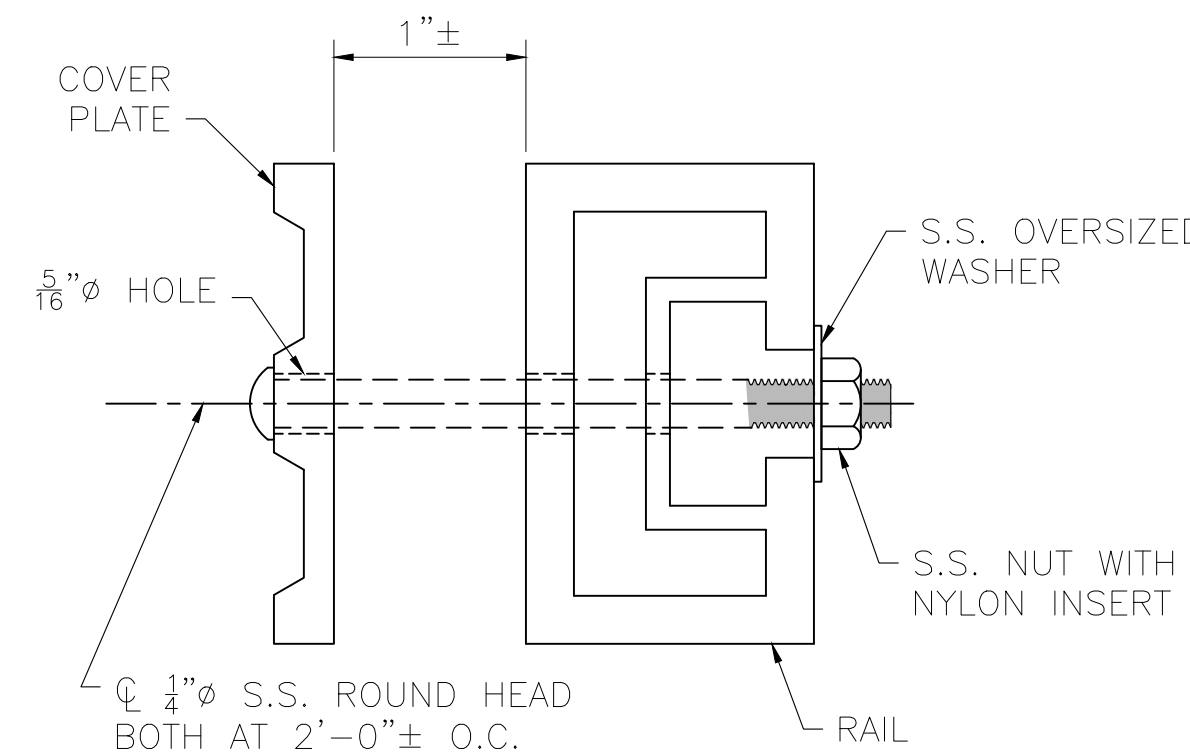
BOTTOM COVER PLATE EXTRUSION

FULL SCALE



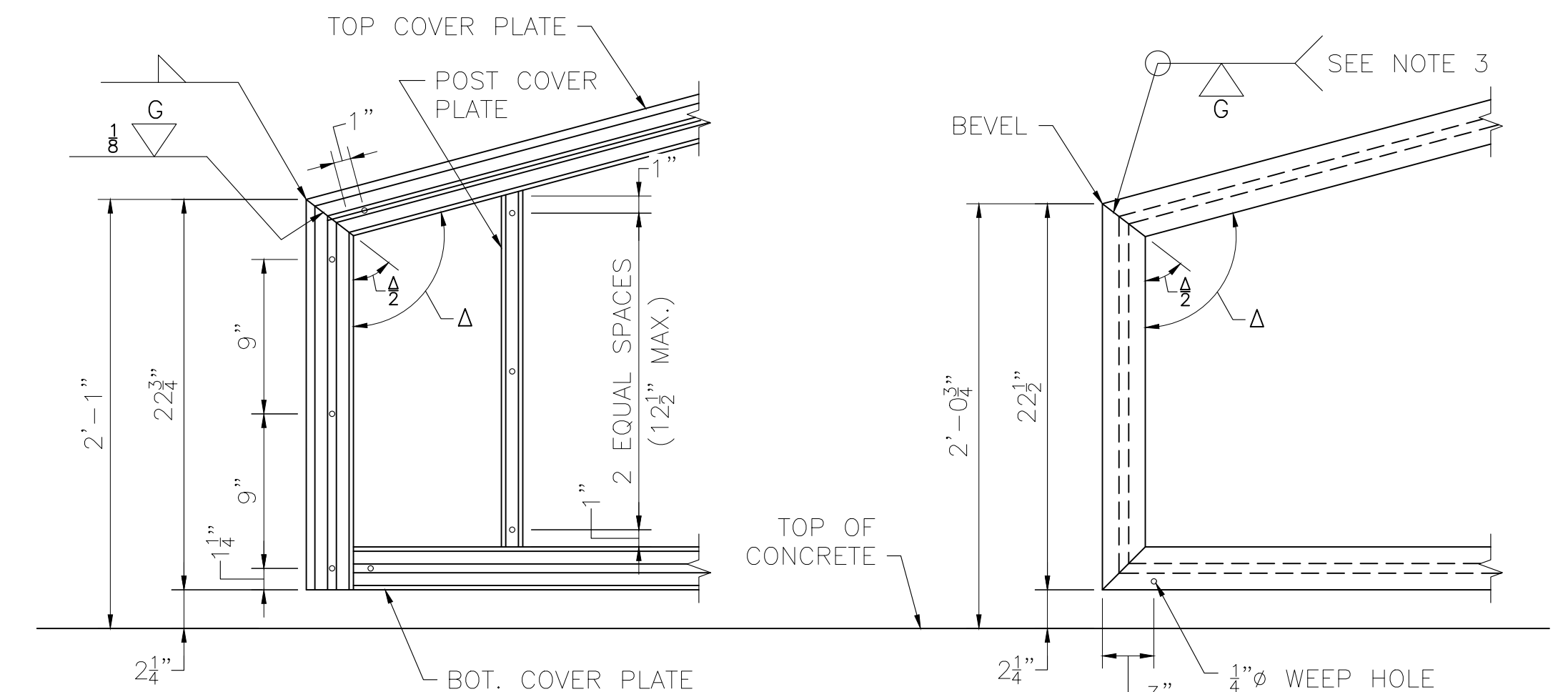
TOP COVER PLATE EXTRUSION

FULL SCALE



RAIL AND COVER PLATE DETAIL

FULL SCALE



COVER PLATE DETAILS

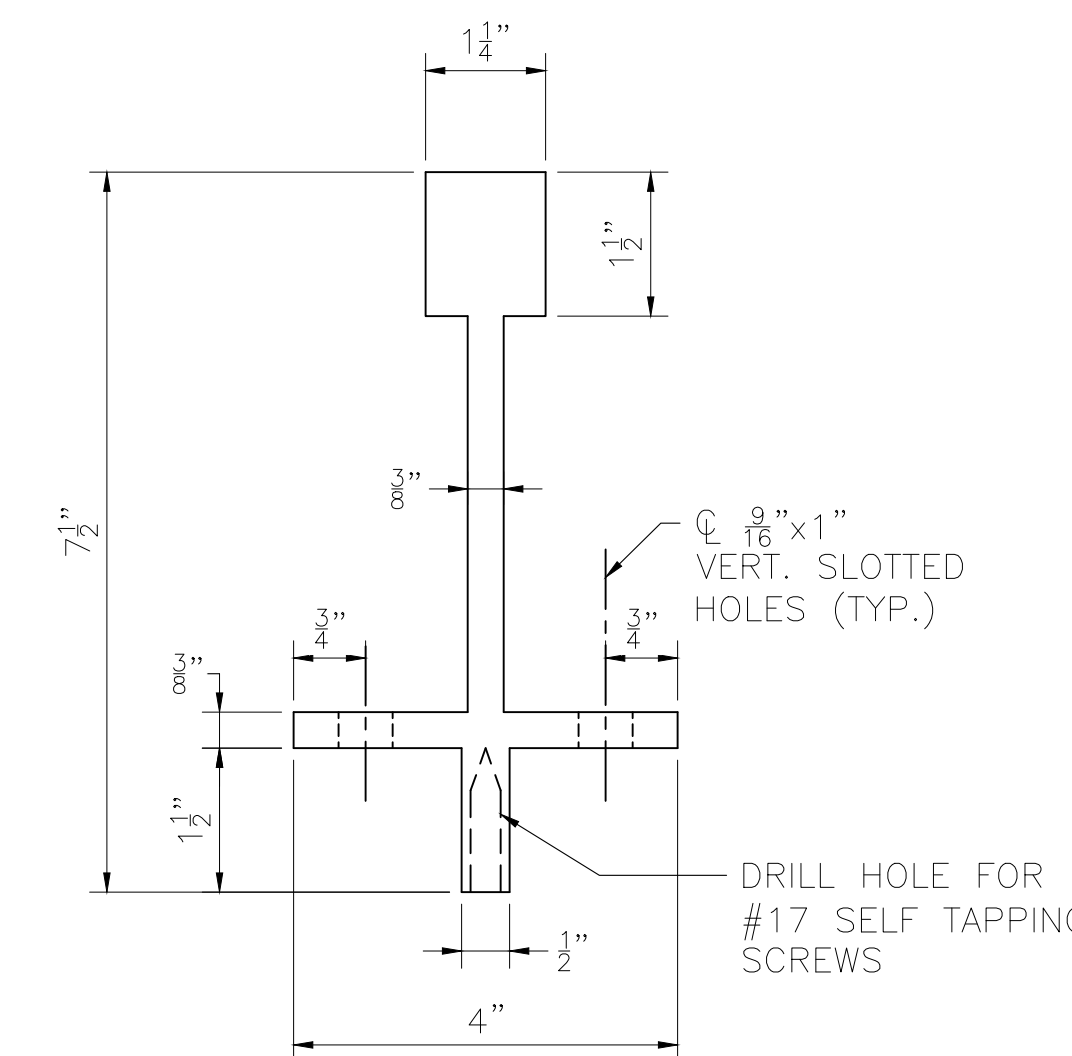
RAIL DETAILS

NOTES:

- WELDING OF TOP COVER PLATE AND RAILS OF NON-TAPERED END IS SIMILAR.
- WELDS AND MITERING TYPICAL FOR ALL ANGLED CORNERS.
- WELD TYPICAL FOR TOP AND BOTTOM END CORNERS OF RAIL. INTERRUPT WELD AT SLOT IN BACK OF RAIL.

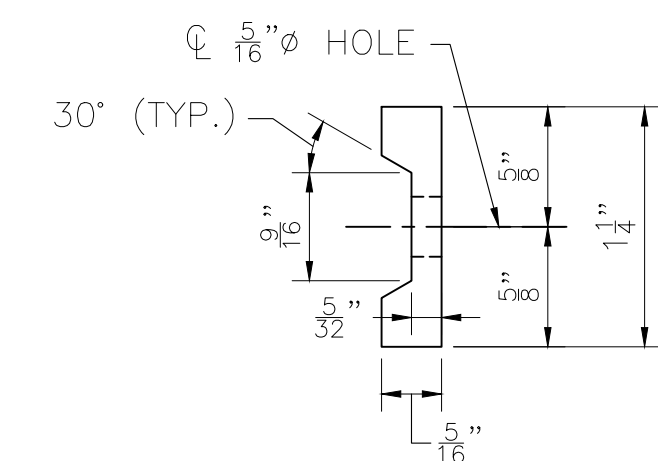
TAPERED END DETAILS

SCALE: 1-1/2" = 1'-0"



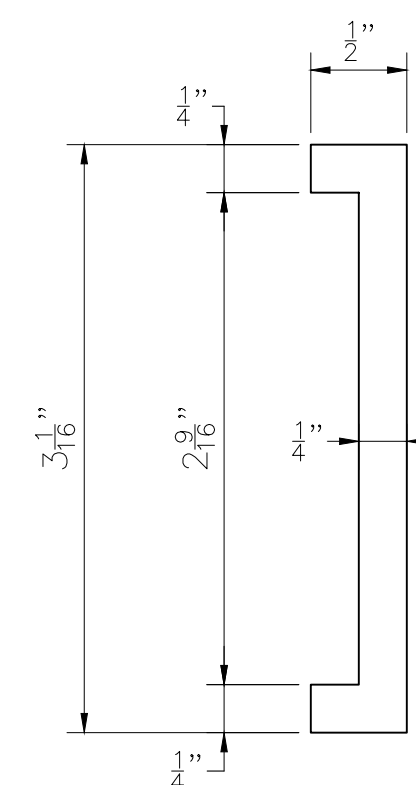
POST EXTRUSION

SCALE: 6" = 1'-0"



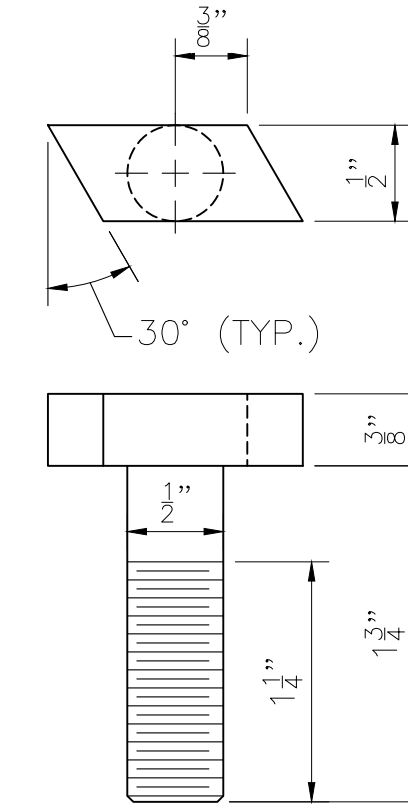
POST COVER PLATE EXTRUSION

FULL SCALE



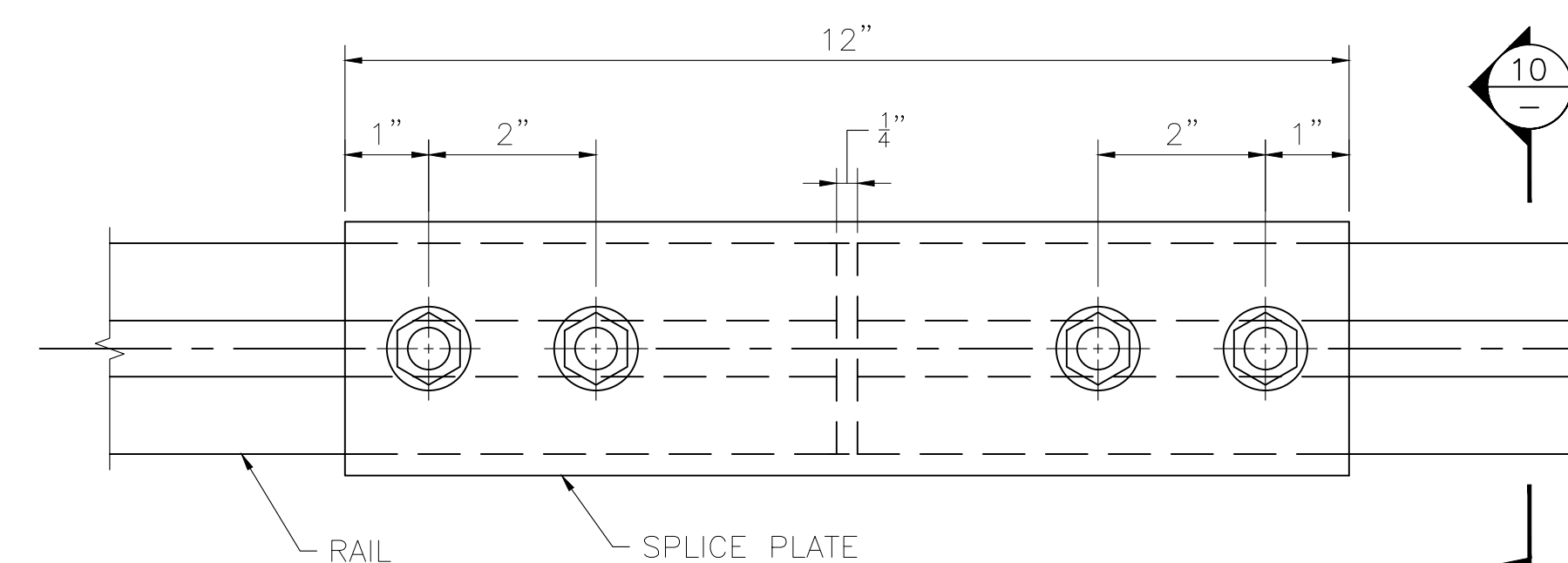
SPLICE PLATE EXTRUSION

FULL SCALE



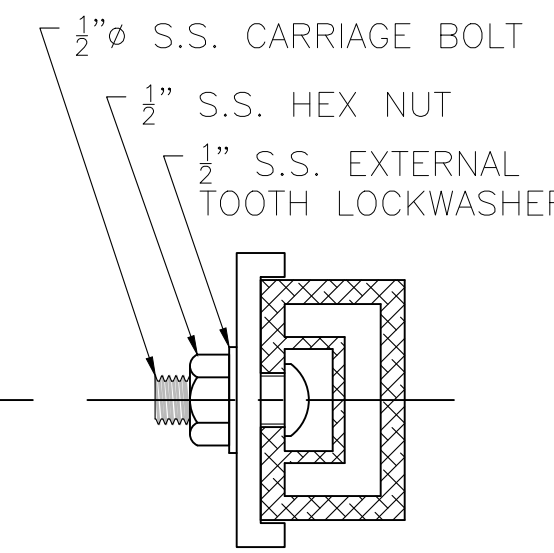
TEE BOLT

FULL SCALE



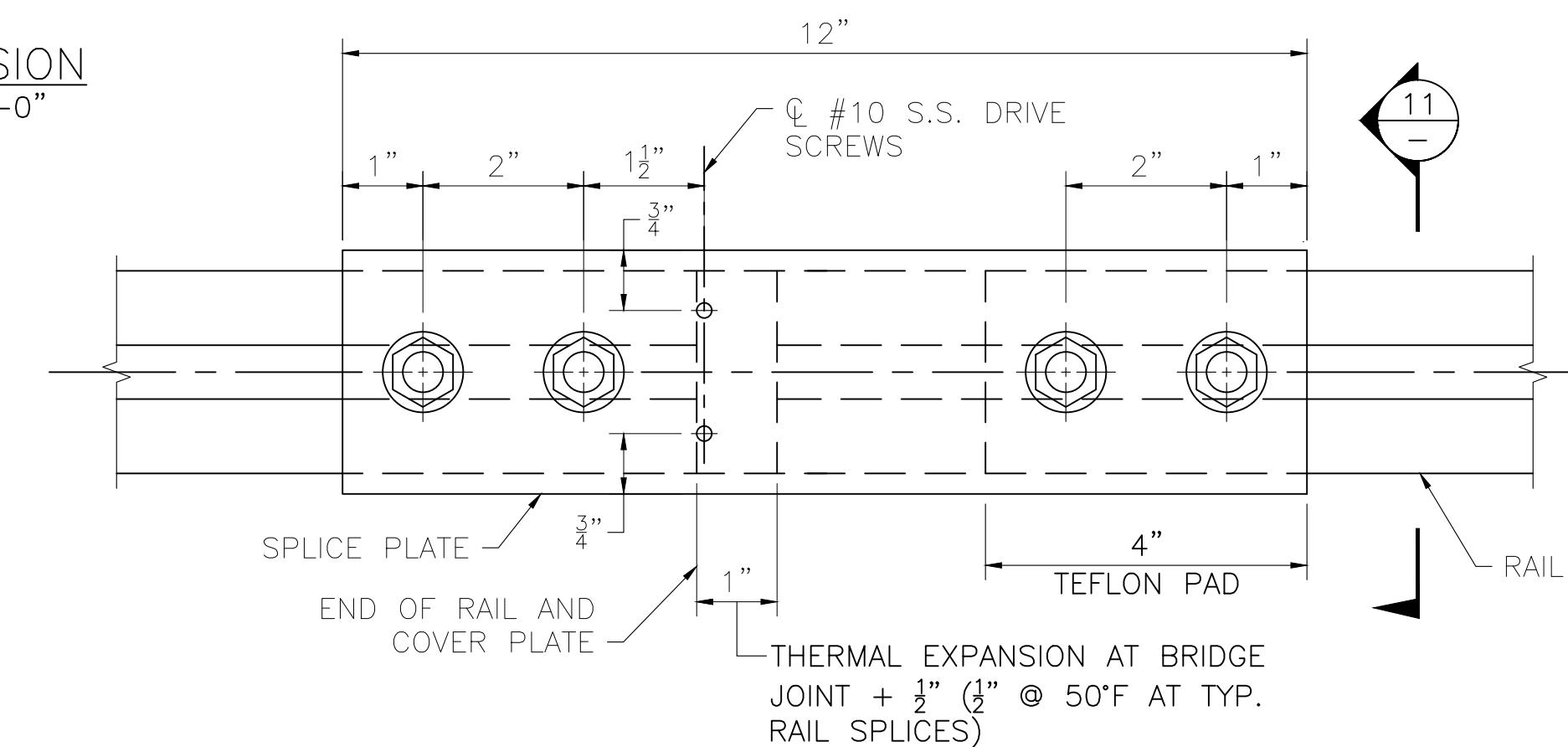
DETAIL AT SPLICE JOINT

SCALE: 6" = 1'-0"



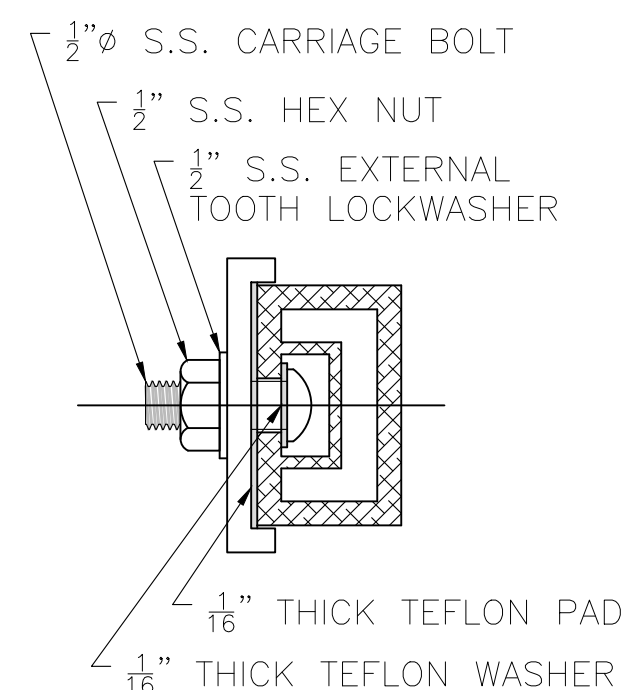
SECTION 10

SCALE: 6" = 1'-0"



DETAIL AT EXPANSION JOINT

SCALE: 6" = 1'-0"

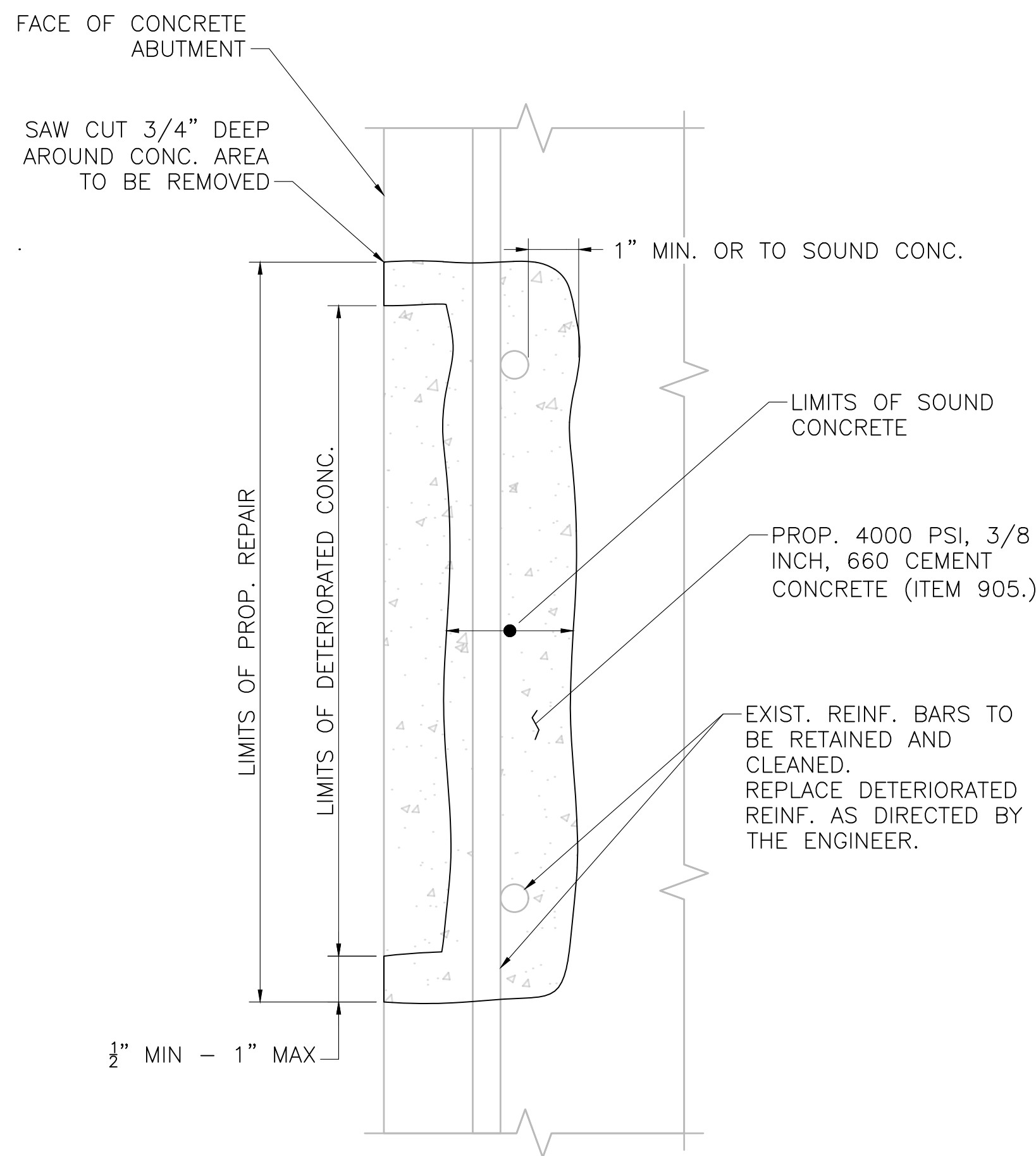


SECTION 11

SCALE: 6" = 1'-0"

TYPE II PROTECTIVE SCREEN

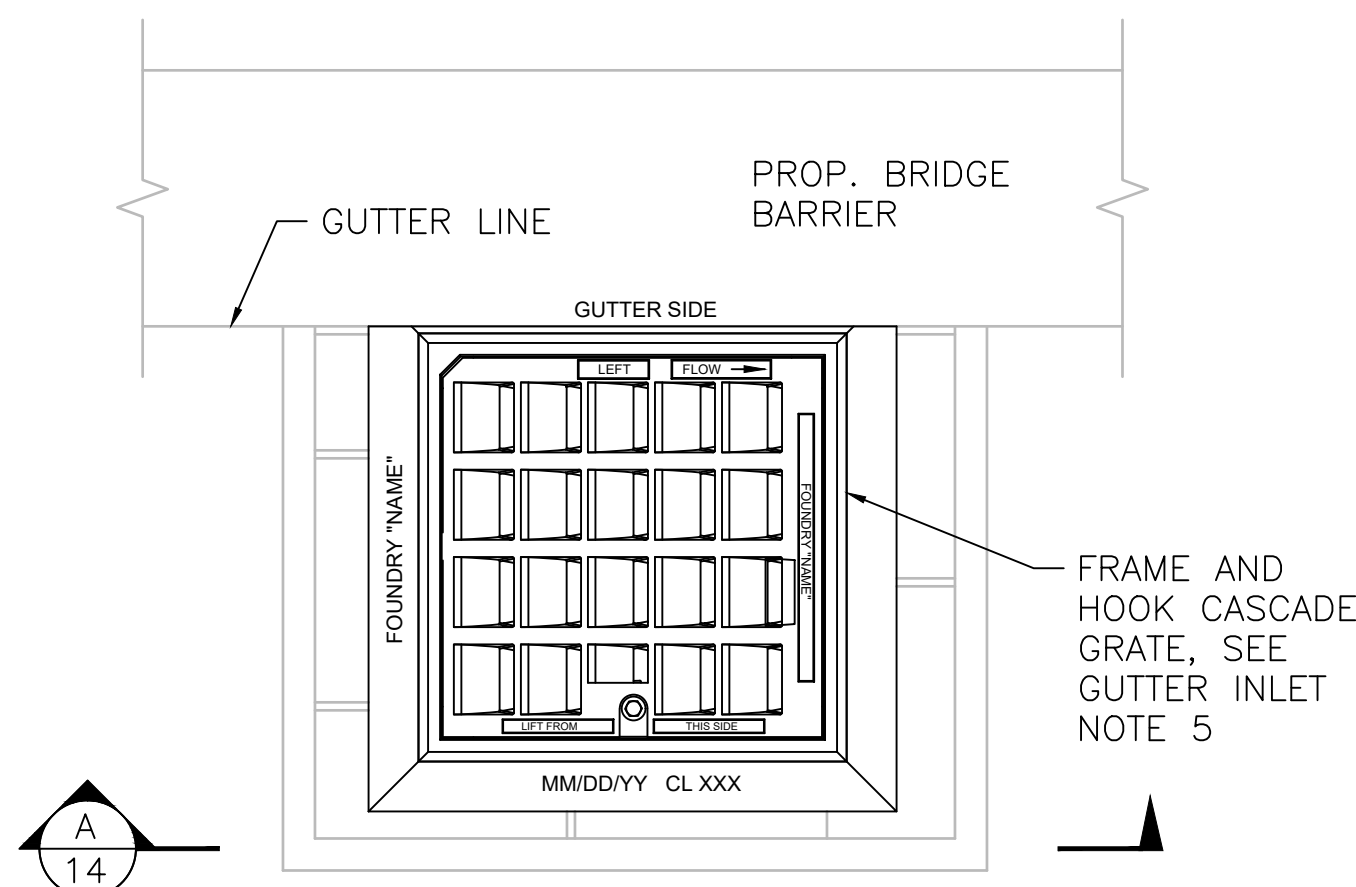
SHEET 13 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)



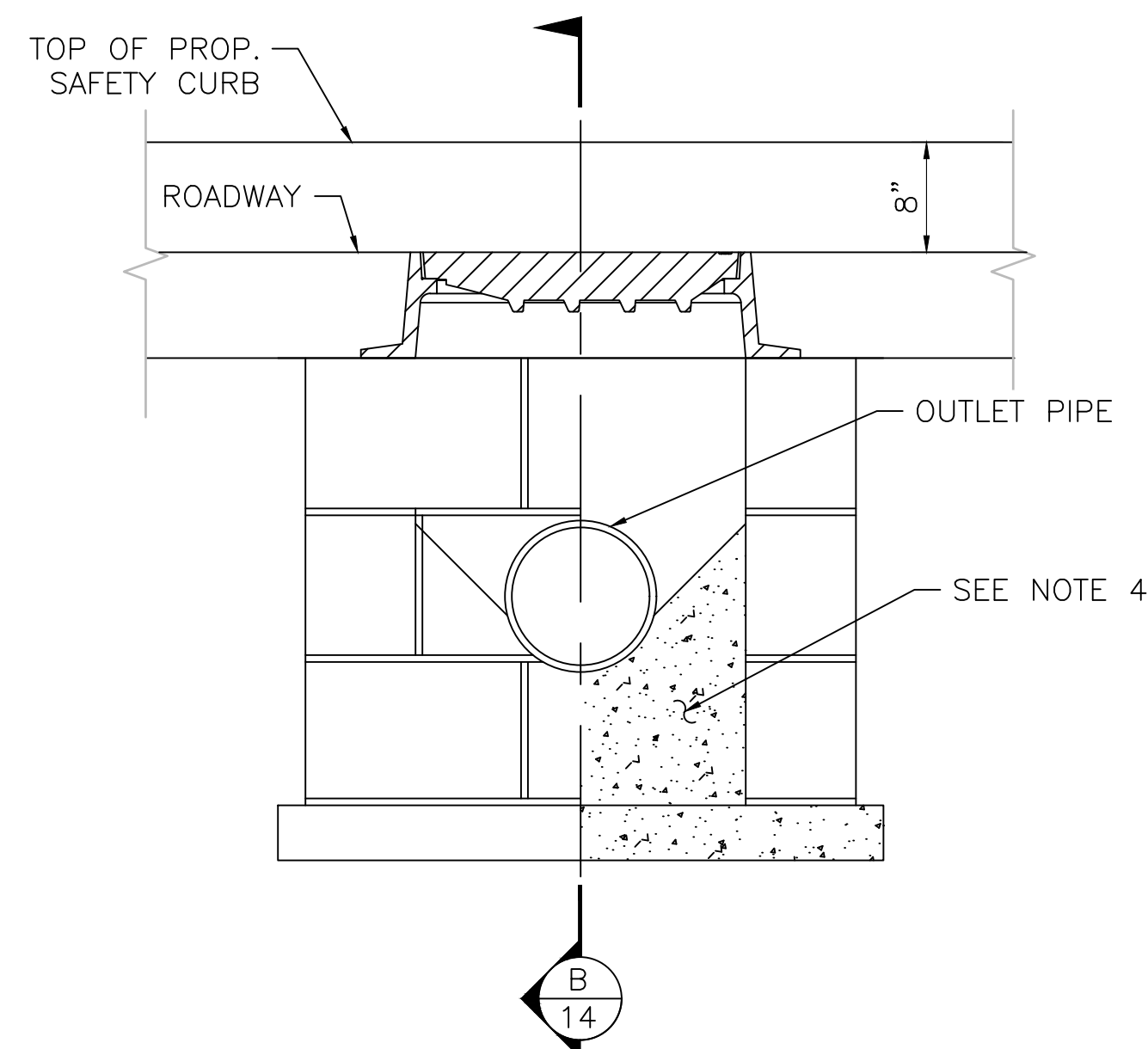
SUBSTRUCTURE REPAIR DETAIL  
NOT TO SCALE

NOTES:

1. FOR USE IF REINFORCING BARS ARE EXPOSED DURING EXCAVATION.
2. IF THERE IS LESS THAN 1½" CONCRETE COVER, THEN THE CONTRACTOR SHALL BUILD OUT THE FORM TO ENSURE A MINIMUM OF 1½" COVER IS PROVIDED.



GUTTER INLET TOP PLAN  
SCALE: 1" = 1'-0"



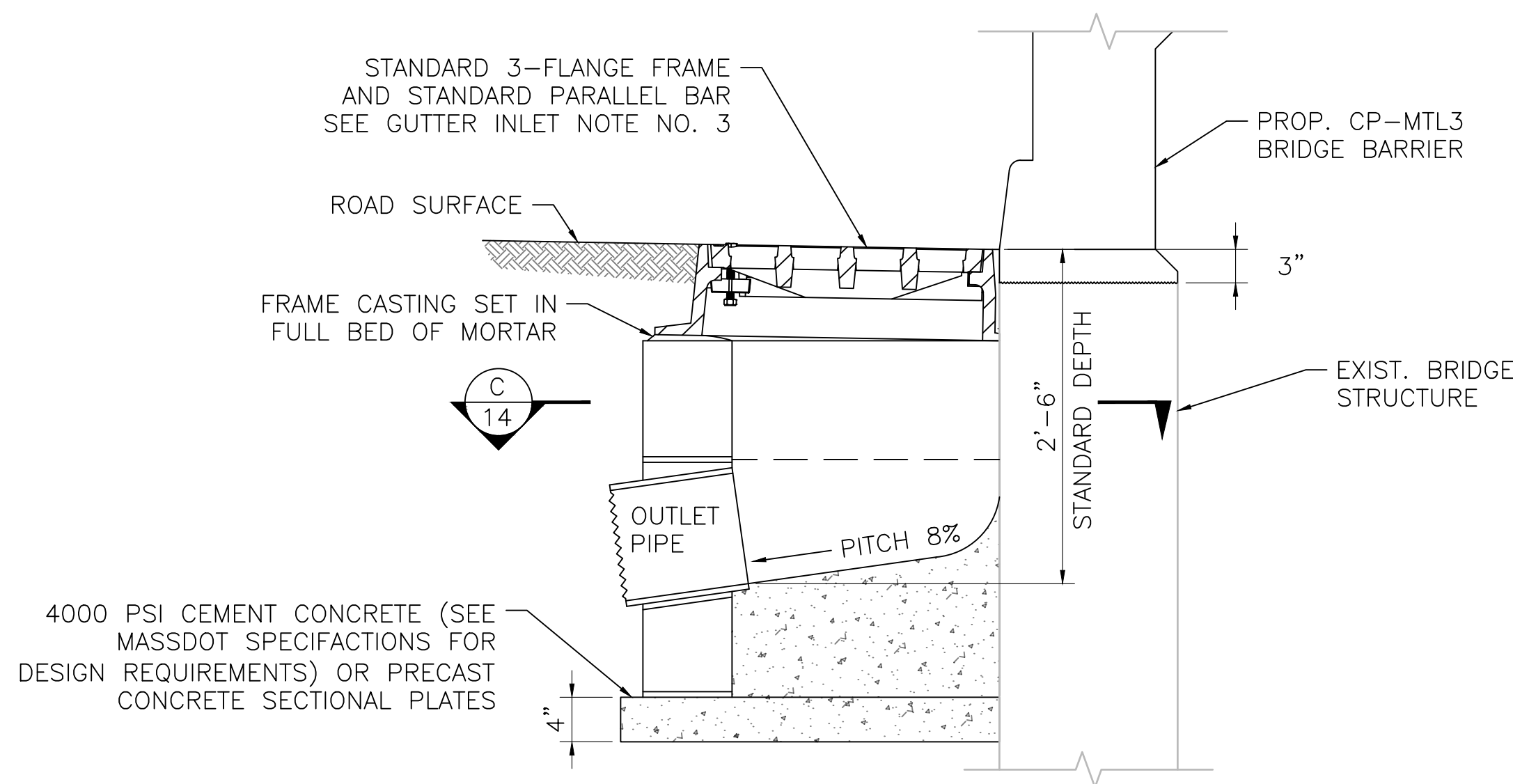
GUTTER INLET FRONT ELEVATION – SECTION A  
SCALE: 1" = 1'-0"

GUTTER INLET NOTES:

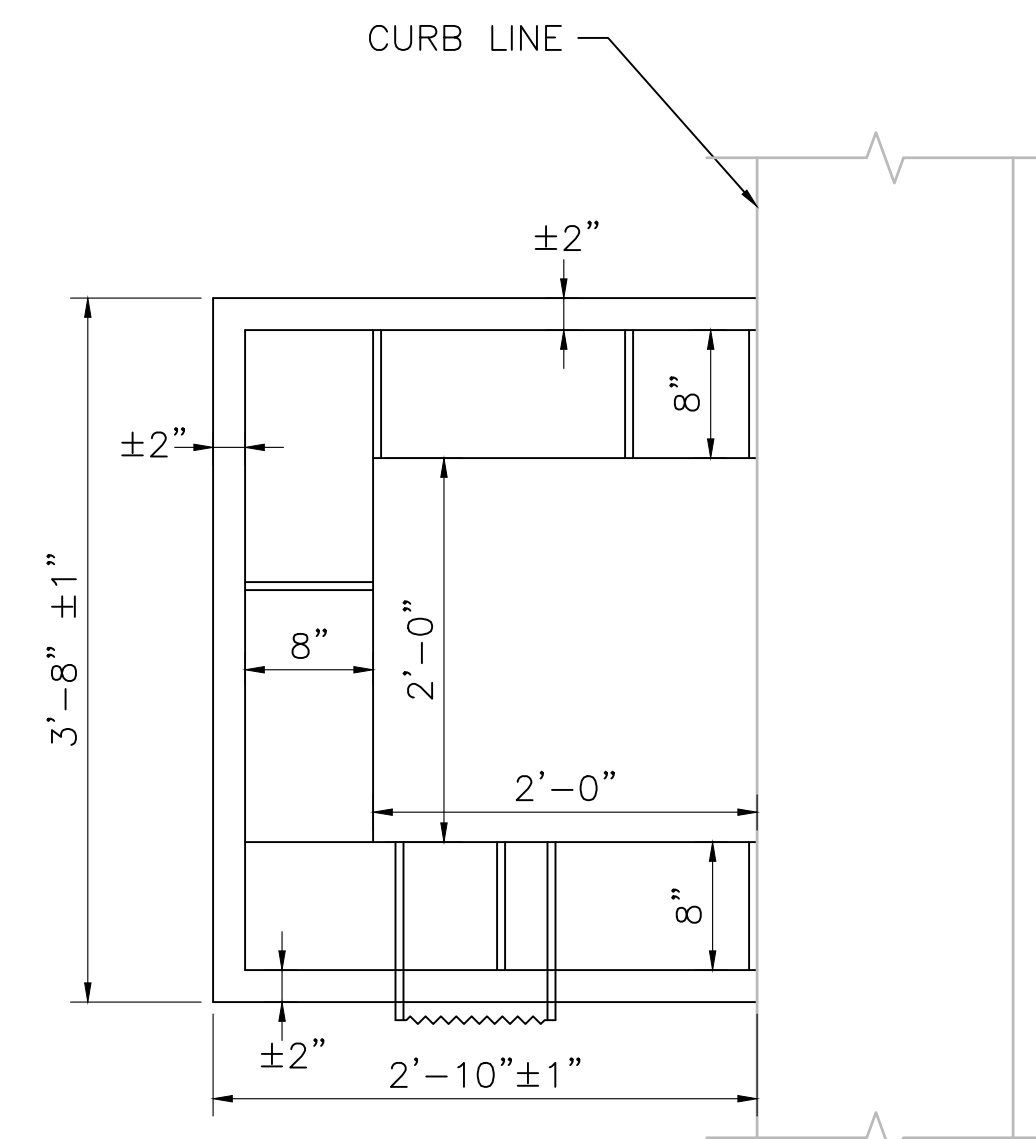
1. BRIDGE MAY BE USED BETWEEN TOP COURSE AND FRAME FOR GRADE ADJUSTMENT.
2. A CASCADE GRADE IS TO BE USED.
3. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHODS, SEE STANDARD SPECIFICATIONS.
4. INVERT TO BE CONSTRUCTED OF BRICK AS SHOWN IN DETAILS FOR BRICK GUTTER INLET OR 4000 PSI CEMENT CONCRETE MASONRY (SEE MASSDOT SPECIFICATIONS FOR DESIGN REQUIREMENTS) (IF HANDMIXED SEE STANDARD SPECIFICATIONS)
5. FRAME AND HOOK LOCK CASECADE GRADE – FLOW FROM RIGHT ASSEMBLY TO BE USED ON WEST SIDE OF BRIDGE AND FRAME AND HOOK LOCK CASECADE GRADE – FLOW FROM LEFT ASSEMBLY TO BE USED ON EAST SIDE OF BRIDGE

SURFACE PREPARATION FOR CONCRETE REPAIR NOTES:

1. THE CONTRACTOR SHALL EXERCISE CARE WHEN REMOVING CONCRETE AROUND REINFORCEMENT TO ONLY REMOVE THE DETERIORATED CONCRETE AND TO LIMIT THE SOUND CONCRETE REMOVED TO THE MINIMUM NECESSARY TO EFFECT A GOOD REPAIR.
2. EXTENT, LOCATION, AND REPAIR TYPE OF ALL CONCRETE REPAIRS TO BE FIELD VERIFIED AND APPROVED BY THE ENGINEER AFTER CONTRACTOR HAS SOUNDED AND MARKED OUT ALL REPAIR AREAS. REPAIR CONFIGURATIONS SHOULD BE KEPT AS SIMPLE AS POSSIBLE, PREFERABLY WITH SQUARE CORNERS.
3. SAW CUT ALONG NEAT LINES AROUND REPAIR AREA PRIOR TO CONCRETE EXCAVATION. USE SAW CUT DEPTH OF ¾" OR LESS AS REQUIRED TO AVOID CUTTING REINFORCING STEEL (REFER TO SPECIAL PROVISIONS).
4. REMOVE DETERIORATED AND DELAMINATED CONCRETE, UNDERCUT EXPOSED REINFORCING STEEL TO PROVIDE MINIMUM CLEARANCE AROUND BARS. REMOVE ADDITIONAL CONCRETE AS REQUIRED TO PROVIDE MINIMUM REQUIRED THICKNESS OF REPAIR MATERIAL.
5. IF REINFORCING STEEL IS EXPOSED, CLEAN BY MECHANICAL MEANS AND HIGH PRESSURE WASHING WITH WATER THAT CONTAINS NO DETERGENTS OR BOND INHIBITING CHEMICALS. WHERE ACTIVE CORROSION HAS OCCURRED THAT WOULD INHIBIT BONDING, ABRASIVE BLAST CLEAN STEEL TO SSPC-SP5 AND COAT WITH A ZINC-RICH PRIMER CONFORMING TO MASSDOT STANDARD SPECIFICATION M7.04.11 BEFORE PLACING NEW CONCRETE.
6. AFTER PATCH REMOVALS AND EDGE PREPARATIONS ARE COMPLETE, REMOVE BOND INHIBITING MATERIALS (DIRT, GREASE, LOOSELY BONDED AGGREGATE) BY ABRASIVE BLASTING (SP5) 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.
7. THOROUGHLY PRE-WET CONCRETE REPAIR AREA FOR 24 HOURS PRIOR TO REPAIR CONCRETE PLACEMENT. SUBSTRATE SHALL BE SATURATED SURFACE DRY (SSD) WITH NO STANDING WATER AT TIME OF REPAIR CONCRETE PLACEMENT.
8. PLACEMENT AND SUBSEQUENT CURING SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THE SPECIAL PROVISIONS.
9. ALL SURFACES SHALL BE RUBBED TO PRODUCE A SMOOTH FINISH TO MATCH EXISTING SURFACES.



GUTTER INLET BASE ELEVATION – SECTION B  
SCALE: 1" = 1'-0"



GUTTER INLET BASE PLAN – SECTION C  
SCALE: 1" = 1'-0"

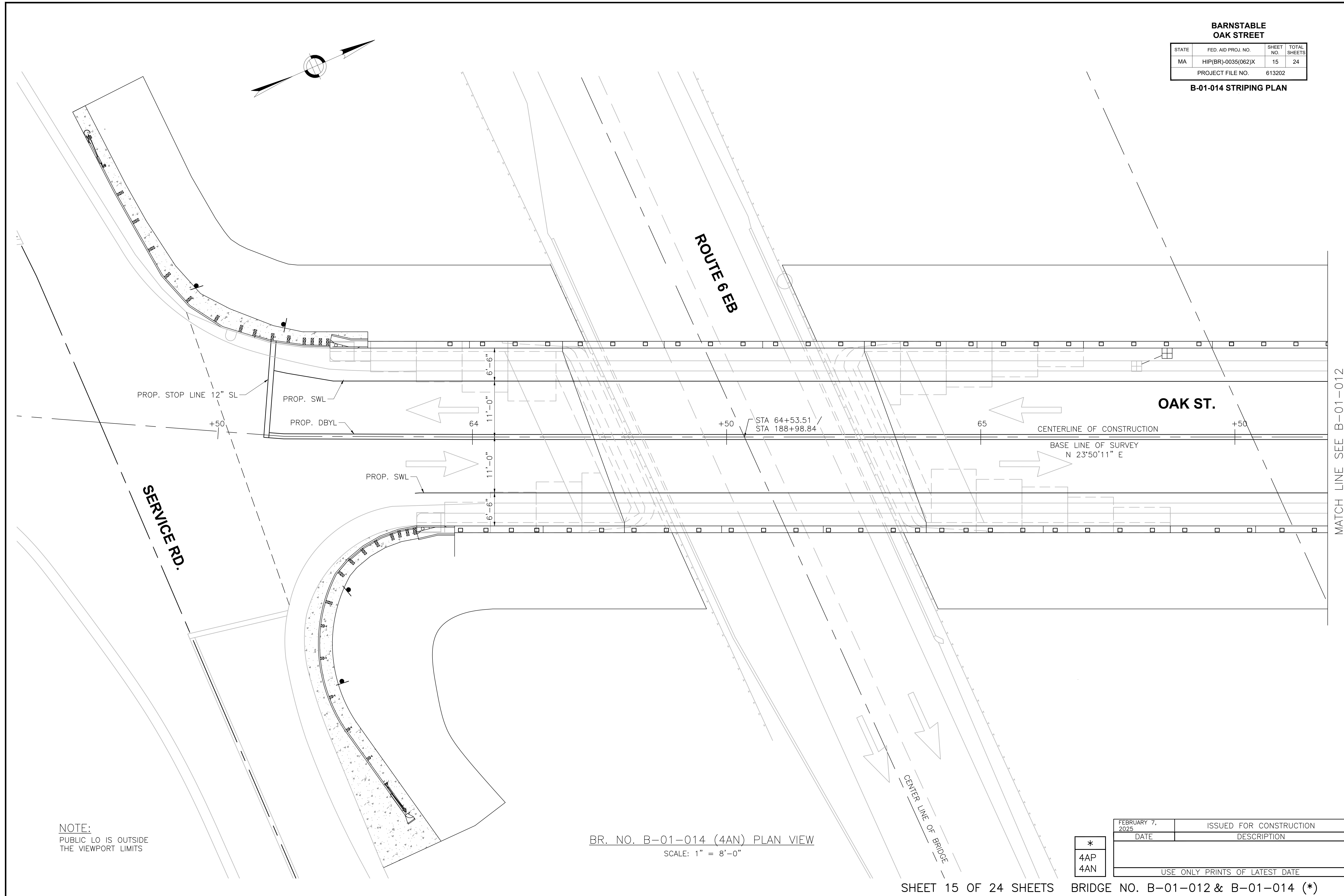
FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	



BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	15	24
PROJECT FILE NO.		613202	

B-01-014 STRIPING PLAN



NOTE:  
PUBLIC LO IS OUTSIDE  
THE VIEWPORT LIMITS

BR. NO. B-01-014 (4AN) PLAN VIEW  
SCALE: 1" = 8'-0"

\*  
4AP  
4AN

FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

SHEET 15 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

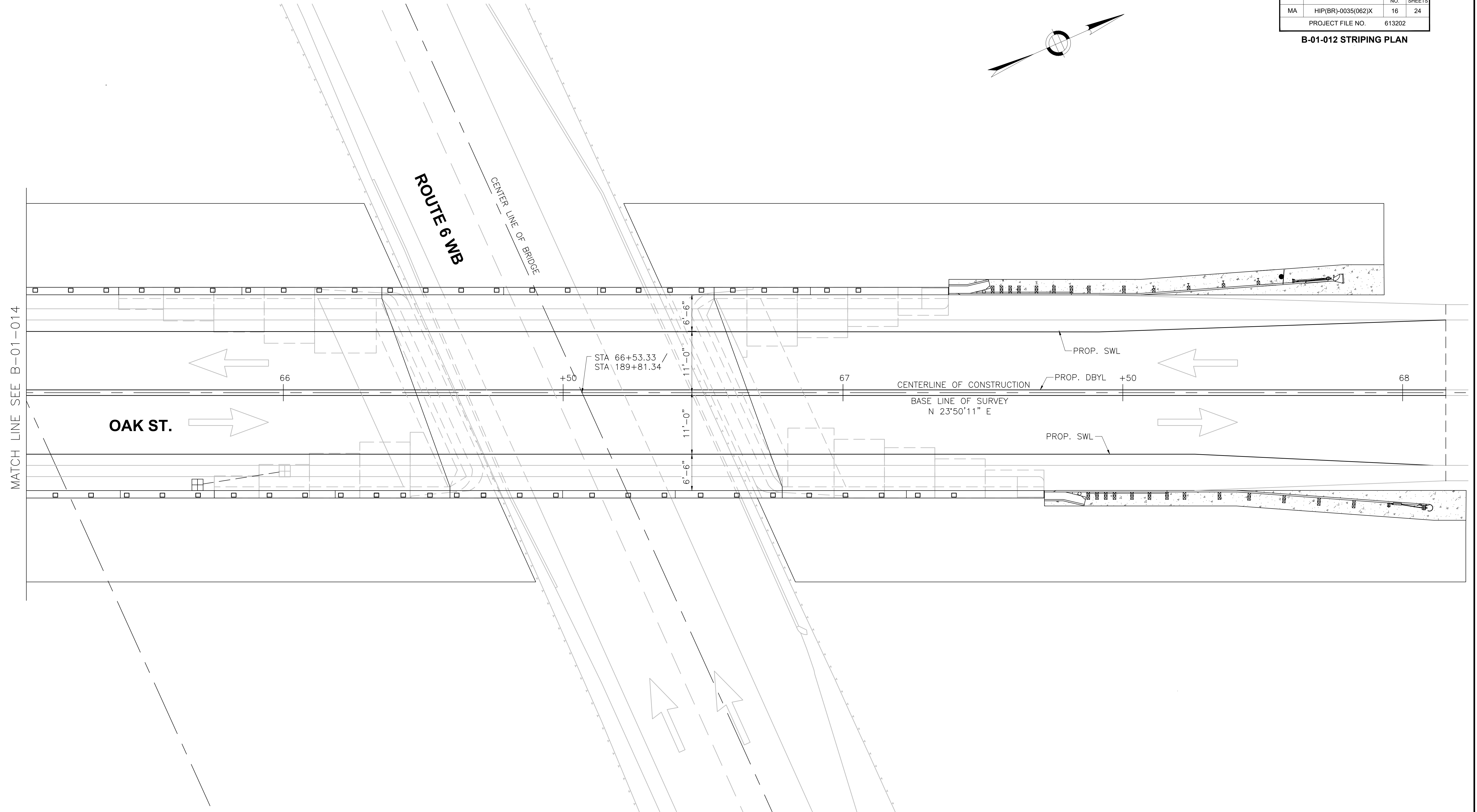
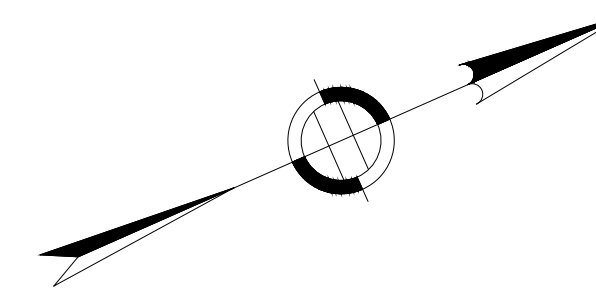
MATCH LINE SEE B-01-012

BARNSTABLE

OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	16	24
PROJECT FILE NO.		613202	

B-01-012 STRIPING PLAN



NOTE:  
PUBLIC LO IS OUTSIDE  
THE VIEWPORT LIMITS

BR. NO. B-01-012 (4AP) PLAN VIEW  
SCALE: 1" = 8'-0"

\*  
4AP  
4AN

FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

SHEET 16 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

GENERAL NOTES:

1. DIMENSIONS SHOWN ARE TAKEN FROM ORIGINAL DESIGN DRAWINGS AND ARE NOT GUARANTEED. STATIONING SHOWN IS FOR REFERENCE ONLY AND HAS NOT BEEN ESTABLISHED BY SURVEY. THE CONTRACTOR SHALL ESTABLISH HIS OWN BASELINE NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE COST OF THE CONTRACT.
2. ALL DIMENSIONS, ELEVATIONS AND DETAILS SHOWN FOR EXISTING CONDITIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS, ELEVATIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENT AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF, AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER. ANY INTERFERENCE WITH THE PROPOSED CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER.
3. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
4. AT A MINIMUM, A 10' LANE MUST BE MAINTAINED IN EACH DIRECTION AT ALL TIMES.
5. THE CONTRACTOR MUST MAINTAIN ACCESS TO ALL PROPERTIES WITHIN THE PROJECT LIMITS FOR THE DURATION OF THE PROJECT.
6. USE DETAILS ONLY WHERE APPROPRIATE AND WHERE SIGNS WILL NOT INTERFERE WITH OTHER OPERATIONAL SIGNS.
7. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
8. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
9. THESE TEMPORARY TRAFFIC CONTROL PLANS ARE NOT INTENDED TO BE INCLUSIVE OF ALL SETUPS NECESSARY TO COMPLETE THE PROJECT. FOR TEMPORARY TRAFFIC CONTROL DETAILS NOT INCLUDED IN THESE PLANS SEE THE MASSDOT WORK ZONE SAFETY TYPICAL DETAILS AND DRAWINGS FOR TEMPORARY TRAFFIC CONTROL.

CONSTRUCTION SIGNING:

1. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
2. ALL SIGN LEGEND, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. ALL CONSTRUCTION SIGNS SHALL BE BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND UNLESS OTHERWISE NOTED.
4. ADVANCE WARNING SIGNS SHALL REMAIN IN PLACE FOR THE ENTIRE DURATION OF THE PROJECT, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. ALL SIGNS, INCLUDING EXISTING, THAT ARE NOT REPRESENTATIVE OF ACTUAL WORK CONDITIONS SHALL BE EITHER COVERED OR REMOVED WHEN NOT APPLICABLE.
6. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY MUST PASS THE CRITERIA SET FORTH IN MASH 2016.
7. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
8. ADVANCE WARNING SIGNS SHALL BE PLACED ON BOTH SIDES OF INTERCHANGE RAMP.

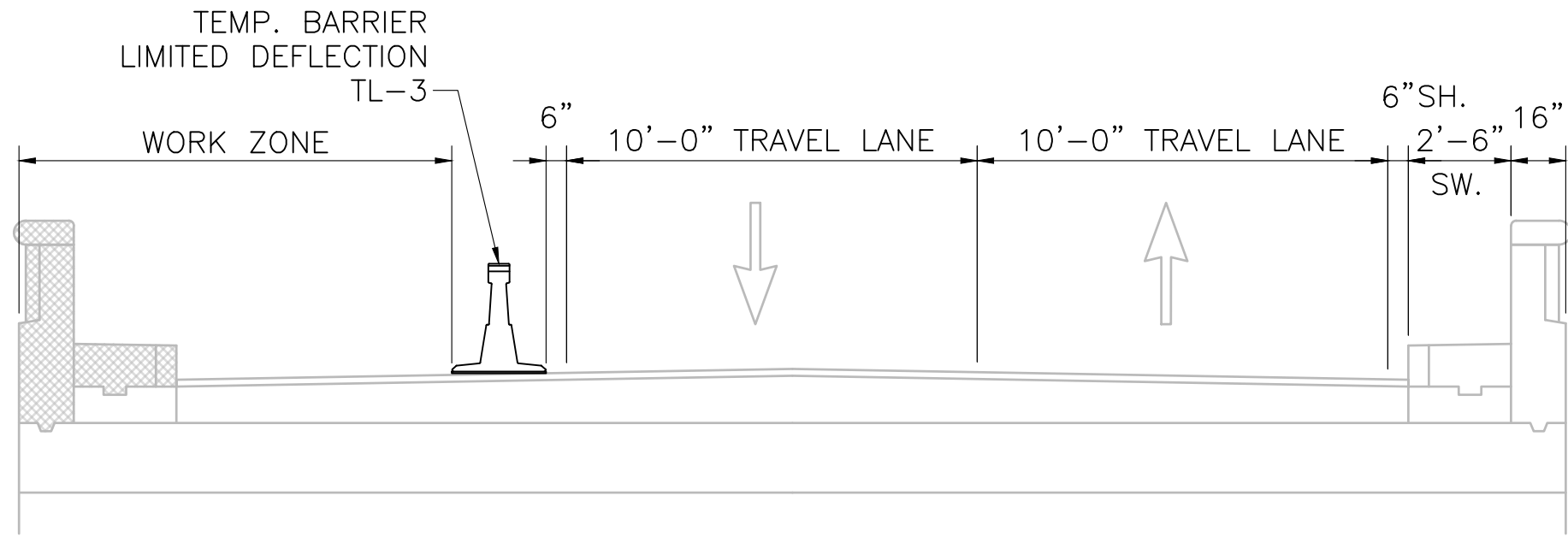
CHANNELIZATION:

1. PLASTIC DRUMS WITH ANY LIGHTING DEVICE MOUNTED TO THEM MUST PASS THE CRITERIA SET FORTH IN MASH 2016.
2. THE MAXIMUM SPACING BETWEEN CHANNELIZATION DEVICES IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH, OR AS OTHERWISE SPECIFIED IN THESE PLANS.
3. THE FIRST TEN DRUMS OF ANY MERGING OR SHIFTING TAPER THAT IS DEPLOYED BETWEEN DUSK AND DAWN SHALL BE EQUIPPED WITH SEQUENTIAL FLASHING WARNING LIGHTS.
4. PEDESTRIAN CHANNELIZING DEVICES SHALL CONFORM TO FIGURE PED-3 IN THE MASSDOT WORK ZONE SAFETY TYPICAL DETAILS AND DRAWINGS FOR TEMPORARY TRAFFIC CONTROL. THE HAND TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PEDESTRIAN PATH.

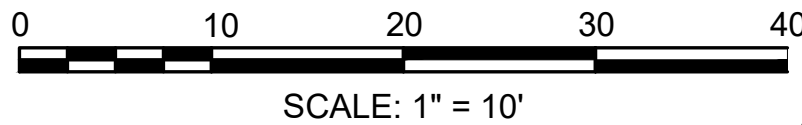
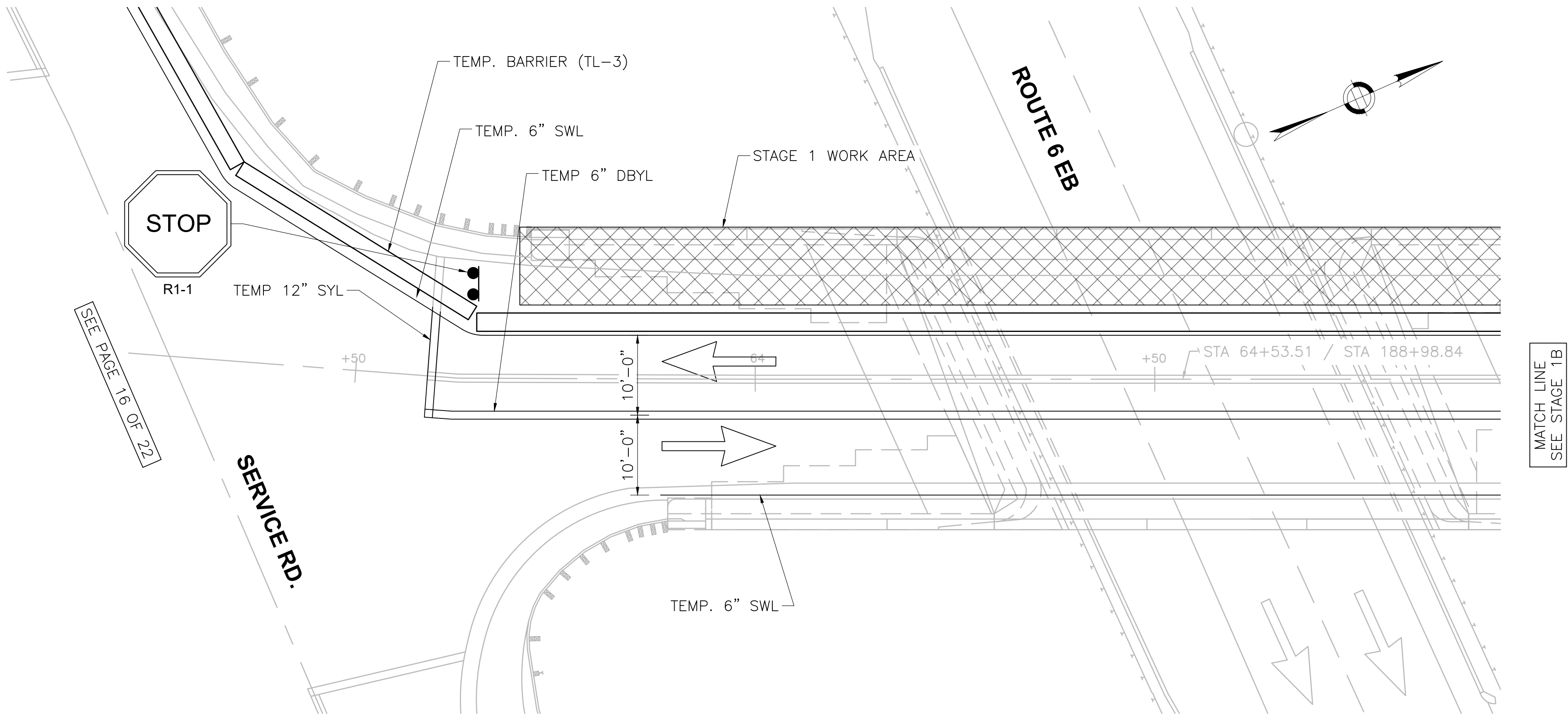
BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	17	24
PROJECT FILE NO.		613202	

STAGE 1A - SB LANE CLOSURE AND NOTES



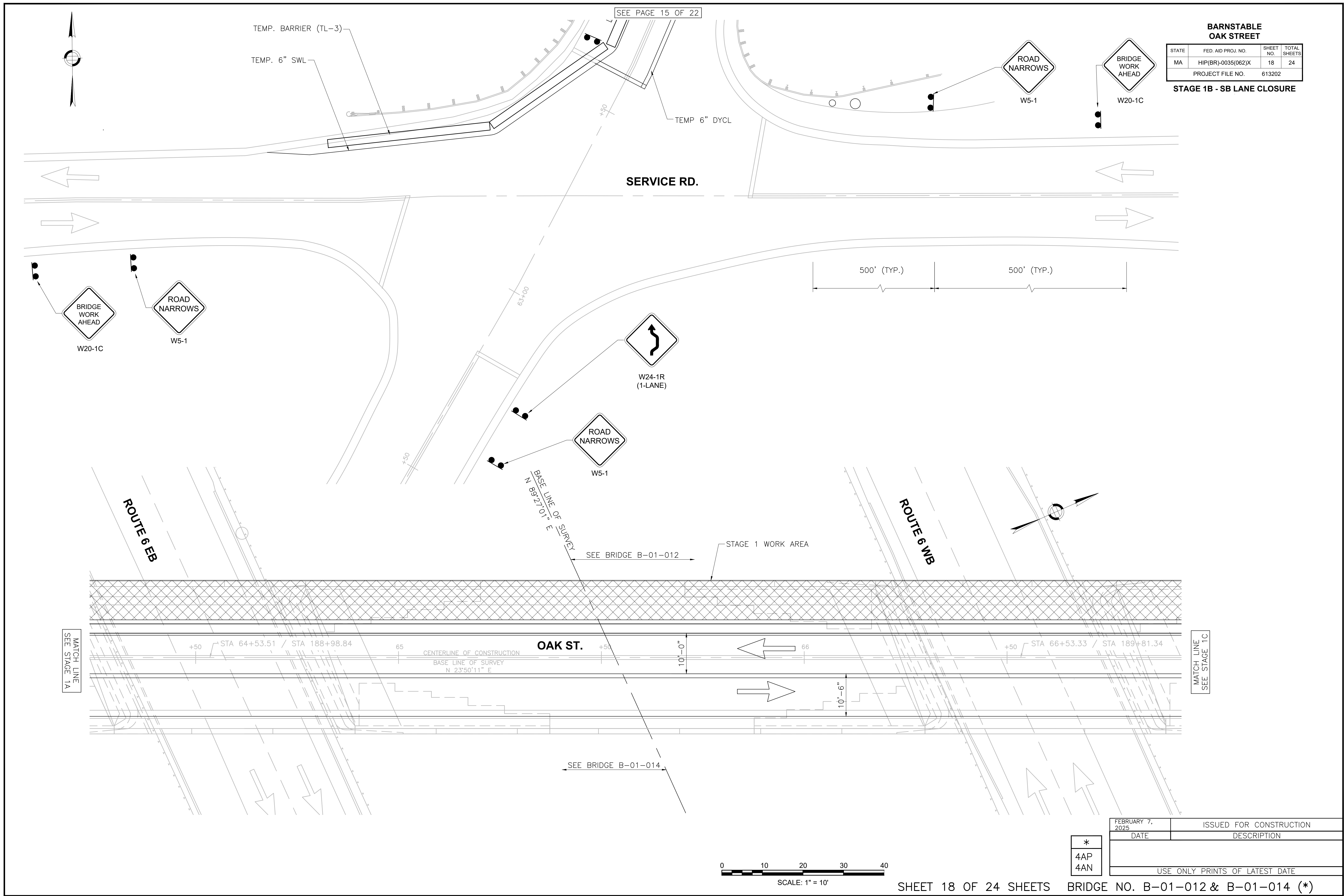
TYPICAL SECTION  
SCALE: 1" = 4'-0"  
(LOOKING NORTH)



SHEET 17 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

*
4AP
4AN

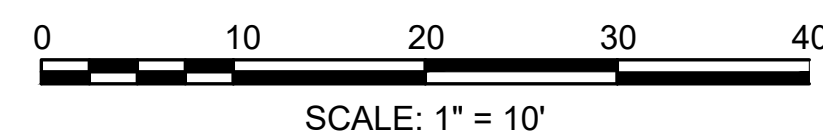
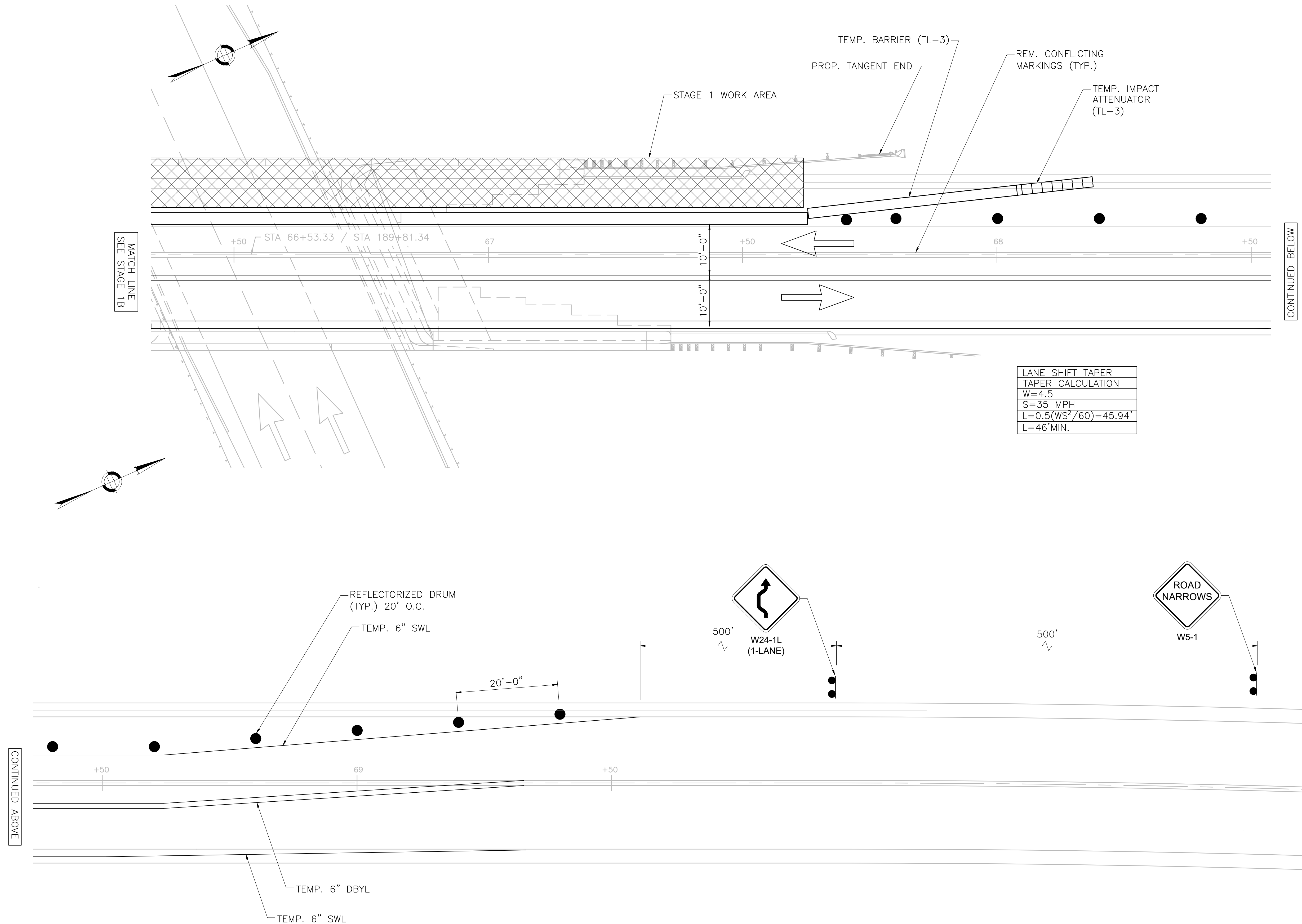
FEBRUARY 7, 2025	ISSUED FOR CONSTRUCTION
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BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	19	24
PROJECT FILE NO.		613202	

STAGE 1C - SB LANE CLOSURE



SHEET 19 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

\*  
4AP  
4AN

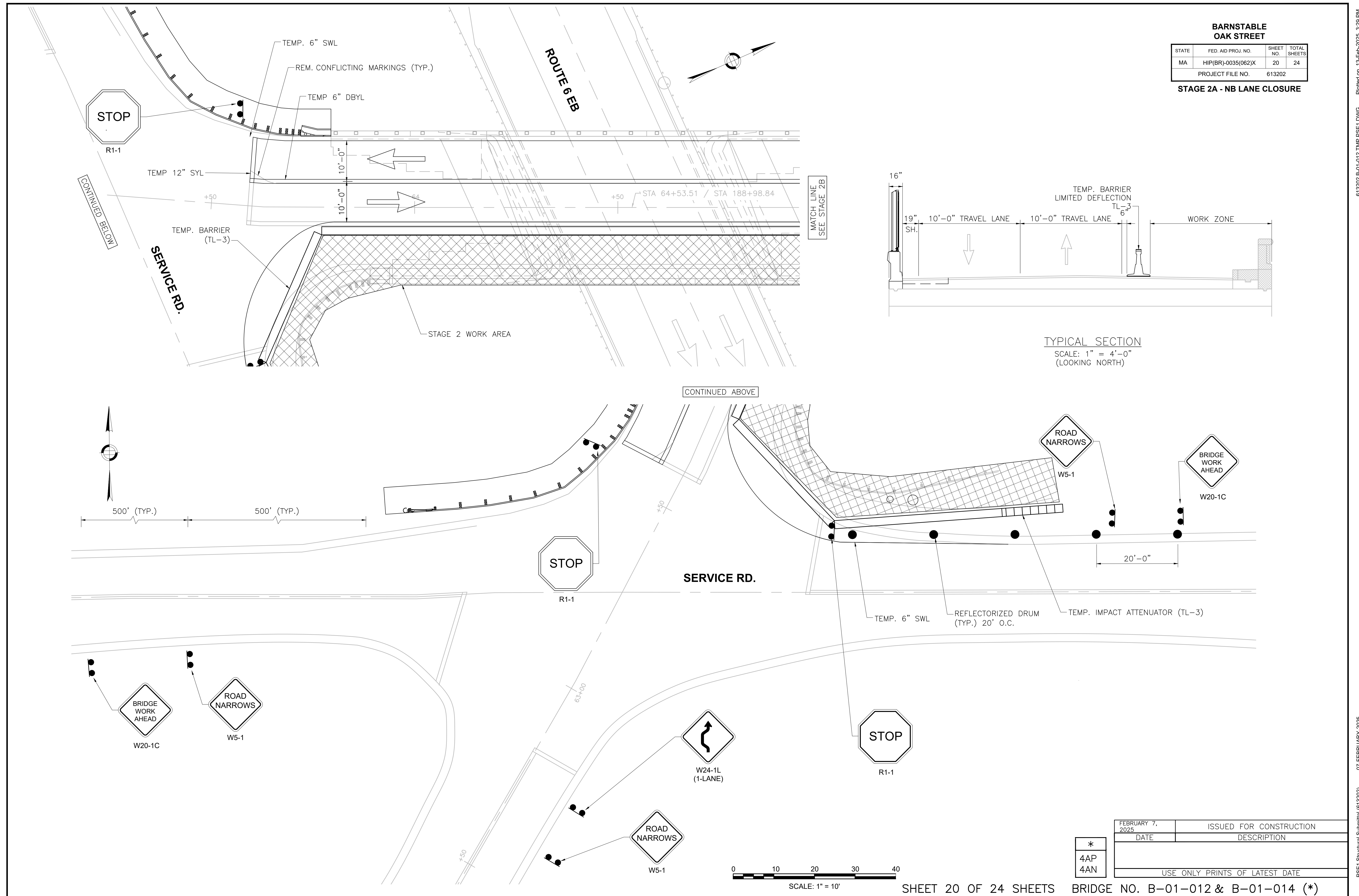
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BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	20	24
PROJECT FILE NO.		613202	

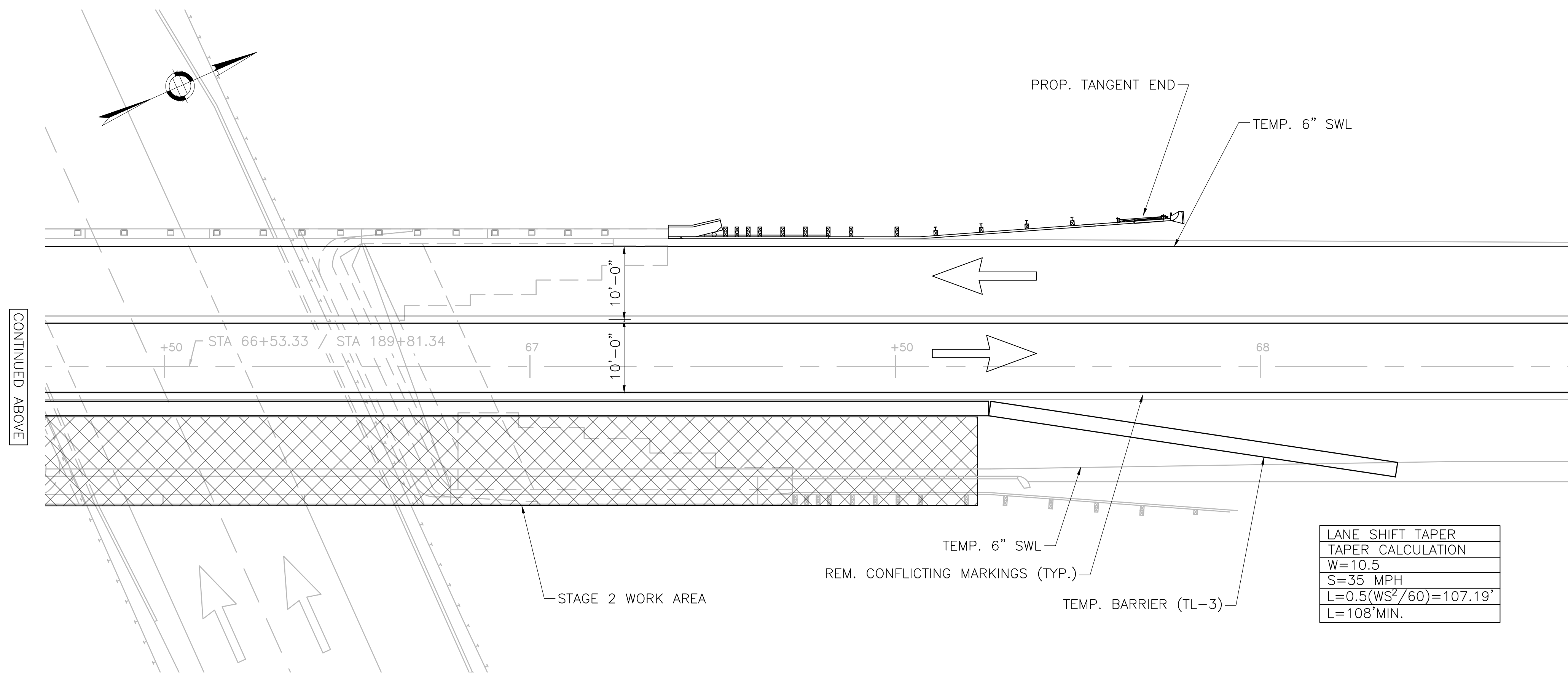
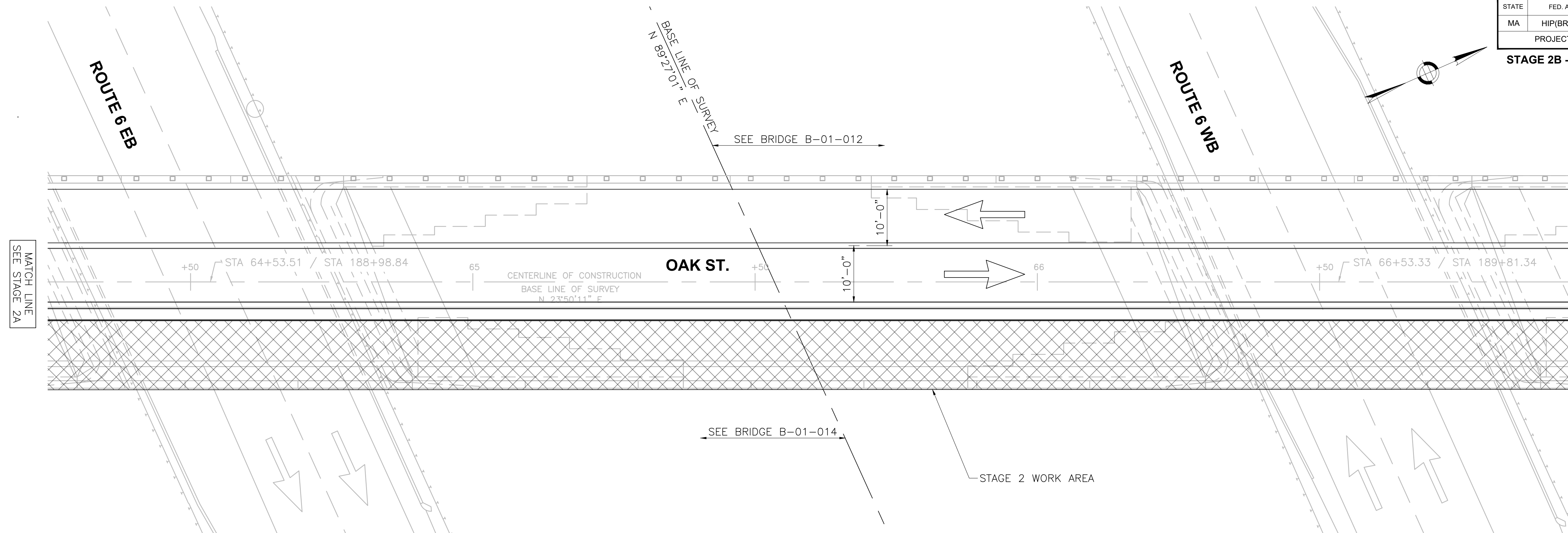
STAGE 2A - NB LANE CLOSURE



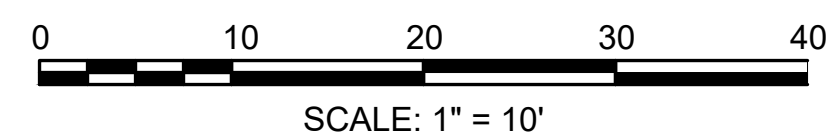
BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	21	24
PROJECT FILE NO.		613202	

STAGE 2B - NB LANE CLOSURE



LANE SHIFT TAPER TAPER CALCULATION
W=10.5
S=35 MPH
$L=0.5(W^2/60)=107.19'$
L=108' MIN.



SHEET 21 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

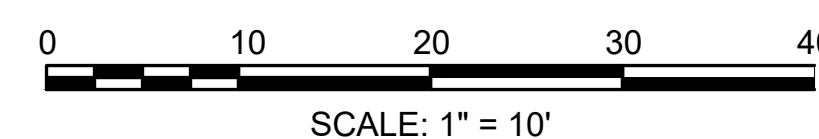
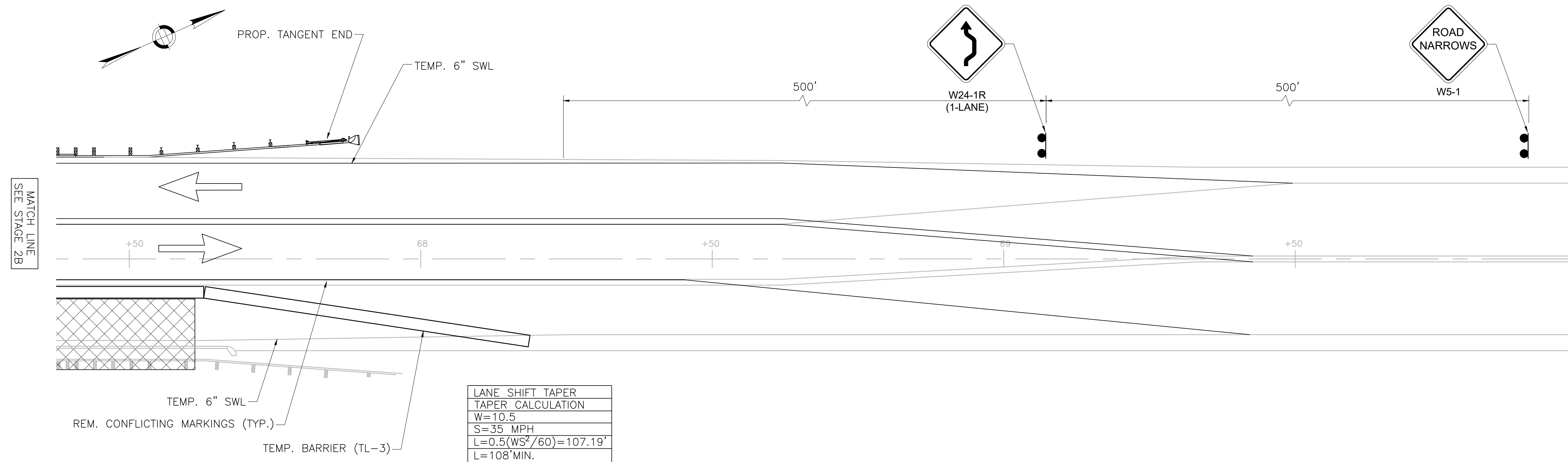
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USE ONLY PRINTS OF LATEST DATE	

BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	22	24
PROJECT FILE NO.		613202	

STAGE 2C - NB LANE CLOSURE



SHEET 22 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

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4AN

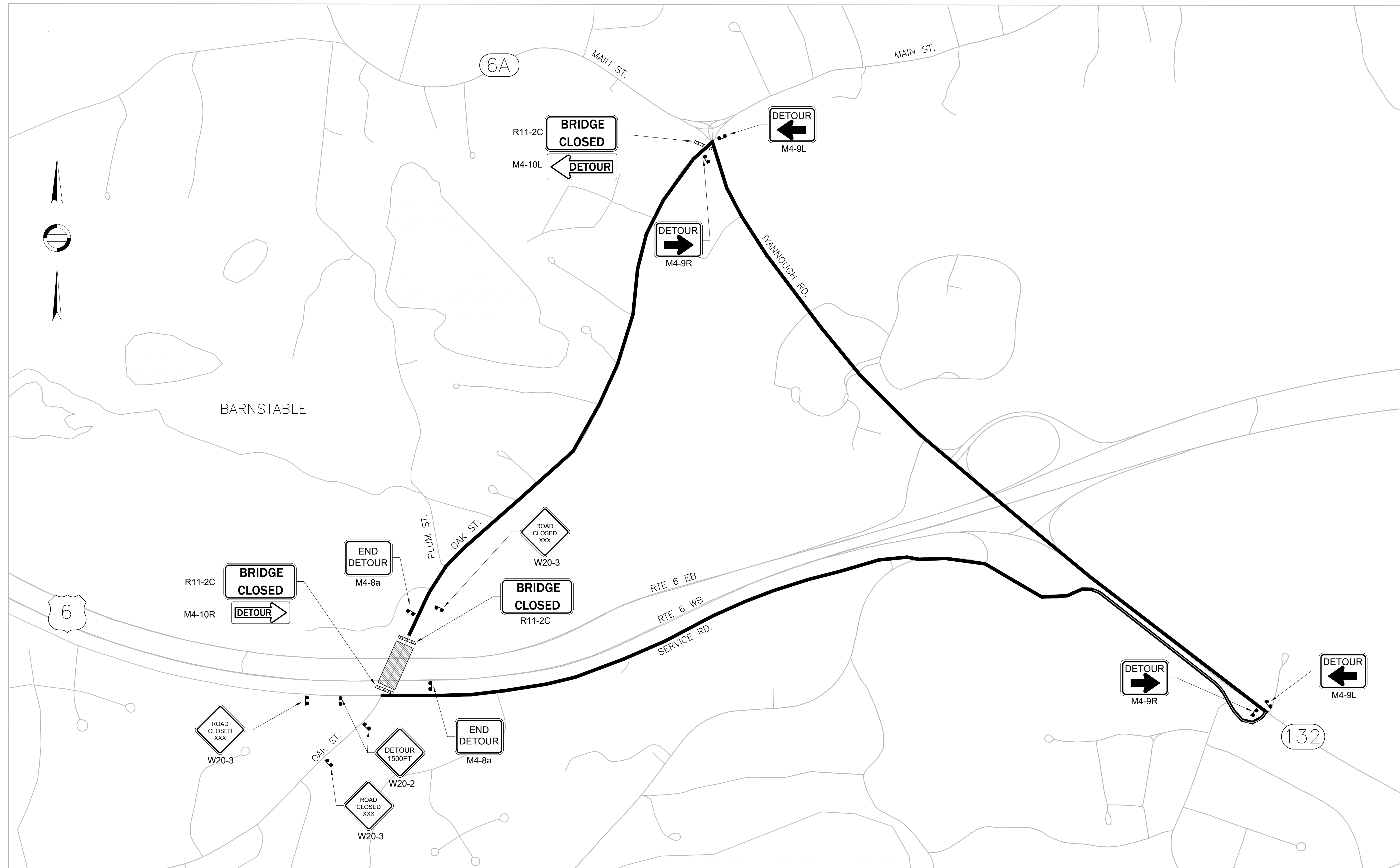
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**BARNSTABLE  
OAK STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	23	24
PROJECT FILE NO.		613202	

### DETOUR MAP



DETOUR MAP  
SCALE: 1" = 400'

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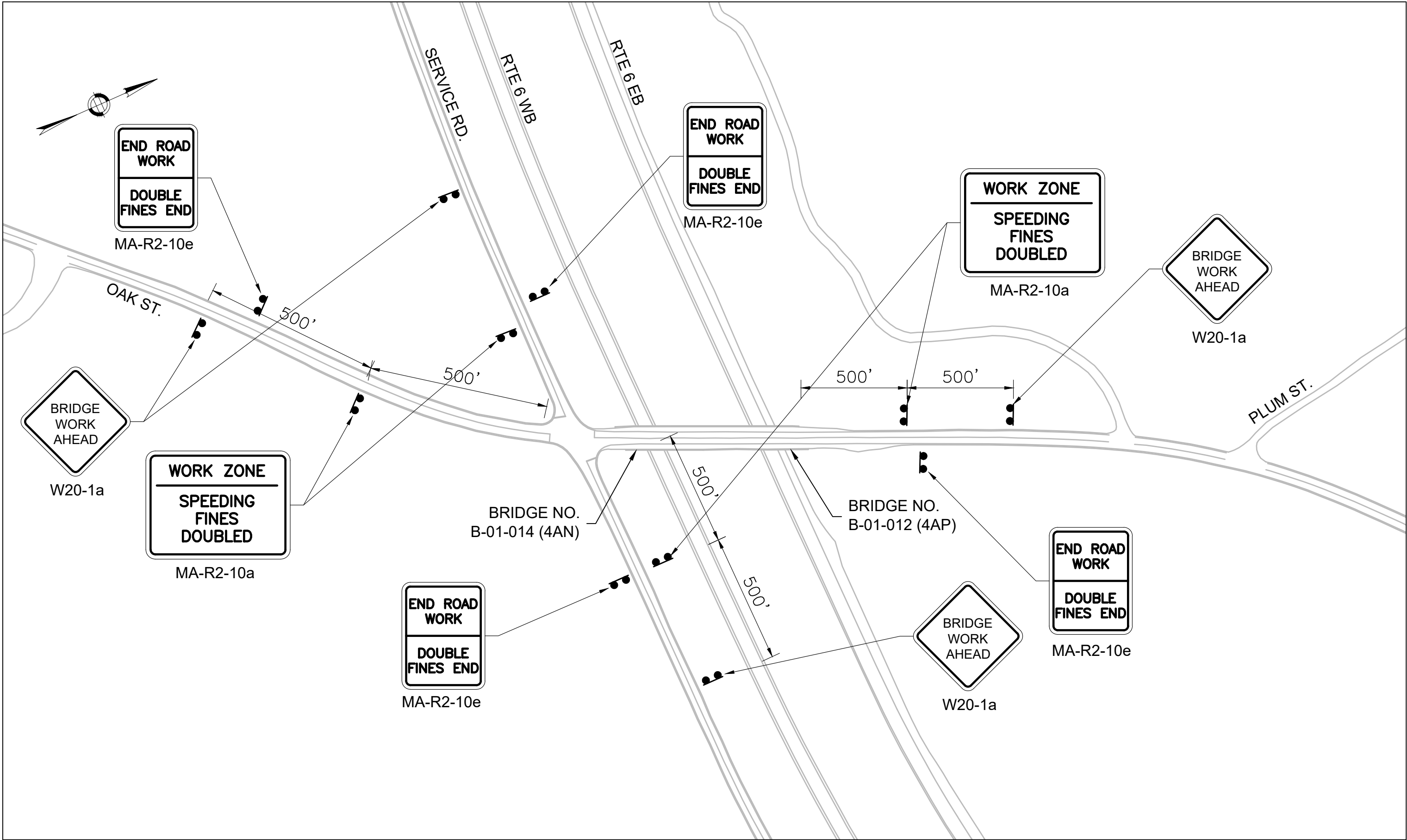
SHEET 23 OF 24 SHEETS BRIDGE NO. B-01-012 & B-01-014 (\*)

TRAFFIC SIGN SUMMARY

IDENTIFI- CATION NUMBER	SIZE OF SIGN		SIGN DIAGRAM	# REQ'D	COLOR			UNIT AREA S.F.	AREA IN SQUARE FEET
	WIDTH	HEIGHT			BACK- GROUND	LEGEND	BORDER		
MA-R2-10a	48"	36"		6	FLUOR. ORANGE	BLACK	BLACK	12	72
MA-R2-10e	36"	48"		6	FLUOR. ORANGE	BLACK	BLACK	12	72
					WHITE	BLACK	BLACK		
W4-2L**	48"	48"		1	FLUOR. ORANGE	BLACK	BLACK	16	16
W4-2R**	48"	48"		1	FLUOR. ORANGE	BLACK	BLACK	16	16
W5-1	36"	36"		4	FLUOR. ORANGE	BLACK	BLACK	9	36
W20-1C	36"	36"		6	FLUOR. ORANGE	BLACK	BLACK	9	54
W20-5R** (1/2 MILE)	48"	48"		1	FLUOR. ORANGE	BLACK	BLACK	16	16
W20-5L** (1/2 MILE)	48"	48"		1	FLUOR. ORANGE	BLACK	BLACK	16	16
W21-5aR**	48"	48"		1	FLUOR. ORANGE	BLACK	BLACK	16	16
W21-5aL**	48"	48"		1	FLUOR. ORANGE	BLACK	BLACK	16	16
W21-5bR**	48"	48"		1	FLUOR. ORANGE	BLACK	BLACK	16	16
W21-5bL**	48"	48"		1	FLUOR. ORANGE	BLACK	BLACK	16	16
M4-10L	48	18"		1	FLUOR. ORANGE	BLACK	BLACK	6	6

\* TEXT DIMENSIONS PER CHAPTER 2 OF THE 2009 MUTCD AND MASSDOT STANDARDS. TOTAL AREA = 547 SF

\*\* SIGNS ARE USED AS PART OF THE DAILY SETUPS USING THE FLIP BOOK DETAILS, NOT PART OF THE LONG TERM TTCP



ADVANCE SIGN PLAN  
SCALE: 1" = 150'

TRAFFIC SIGN SUMMARY

IDENTIFI- CATION NUMBER	SIZE OF SIGN		SIGN DIAGRAM	# REQ'D	COLOR			UNIT AREA S.F.	AREA IN SQUARE FEET
	WIDTH	HEIGHT			BACK- GROUND	LEGEND	BORDER		
W24-1R (1-LANE)	36"	36"		1	FLUOR. ORANGE	BLACK	BLACK	9	9
W24-1L (1-LANE)	36"	36"		1	FLUOR. ORANGE	BLACK	BLACK	9	9
M4-9L	30"	24"		2	FLUOR. ORANGE	BLACK	BLACK	5	10
M4-9R	30"	24"		2	FLUOR. ORANGE	BLACK	BLACK	5	10
M4-10R	48	18"		1	FLUOR. ORANGE	BLACK	BLACK	6	6
W20-4**	36"	36"		2	FLUOR. ORANGE	BLACK	BLACK	9	18

BARNSTABLE  
OAK STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	HIP(BR)-0035(062)X	24	24
PROJECT FILE NO.		613202	

SIGN LEGEND

R11-2C	48	30"		3	FLUOR. ORANGE	BLACK	BLACK	10	20
W20-2	36"	36"		2	FLUOR. ORANGE	BLACK	BLACK	9	18
W20-3	36"	36"		3	FLUOR. ORANGE	BLACK	BLACK	9	27
M4-8a	24"	18"		2	FLUOR. ORANGE	BLACK	BLACK	3	6
W20-7**	36"	36"		2	FLUOR. ORANGE	BLACK	BLACK	9	18
R1-1	36"	36"		2	FLUOR. RED	WHITE	BLACK	9	18

\*  
4AP  
4AN

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# WORK ZONE SAFETY

## *Temporary Traffic Control*

*Typical Details and  
Massachusetts Guidelines  
for MassDOT, Municipalities,  
Utilities, and Contractors*

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## INTRODUCTION

This guide has been prepared to assist in the planning and installing of temporary traffic controls in maintenance, utility, or short-term construction work areas (work lasting 10 hours or less). This guide serves to assist with the many decisions that must be made for each work site. Special planning for traffic control is necessary on a case by case basis because conditions can vary widely among work locations. **Since this guide cannot cover every situation, representative illustrations covering typical short-term construction, maintenance, and utility operations are presented.**

**All typical traffic control device setups illustrated should be considered as guides.** The traffic control devices that are shown, the arrangement or position of the devices, and the distances prescribed in the tables are based on the Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) and the Massachusetts Amendments to the MUTCD (MA Amendments), but these illustrations only present minimum standards. The provision of safe work zones for all roadway users and roadway workers affected by these activities is paramount. Traffic controls may be expanded or improved upon whenever deemed necessary. Traffic movement through the work site all traffic control devices shall be periodically observed and inspected at all locations.

If necessary, Part 6 of the MUTCD and the MA Amendments, Chapter 17 (Work Zone Management) of MassDOT's Project Development & Design Guide, and the "Traffic Engineering and Safety Section" of the MassDOT web site: (<https://www.massdot.state.ma.us/highway/Departments/TrafficandSafetyEngineering.aspx>), as well as MassDOT District offices can provide additional guidance, information, and suggestions for work zone setups.

## RESPONSIBILITIES FOR TRAFFIC CONTROL

Short-term construction, maintenance, and utility work on or near the roadway creates a potentially hazardous situation, typically requiring the use of temporary traffic controls. These controls are important to protect both work crews and the road users. It is the responsibility of each maintenance foreman to establish and maintain safe and effective controls.

Usually the supervisor, working with the crew, plans the traffic control procedures for proposed work sites. The foreman is responsible for re-requesting, storing, and maintaining all traffic control devices necessary for their crews.

The foreman is responsible for placing the devices according to these guidelines. They must inspect each installation and observe traffic flow through the area. The foreman is generally authorized to make adjustments to the original installations that, in their judgment, are necessary to improve the control of traffic and establish greater safety.

All necessary traffic control devices must be installed before work begins and properly maintained during the work period. They must also be removed as soon as they are no longer relevant to the roadway conditions.

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In situations such as night time road or lane closures, detours, or other unusual conditions on state highways, the District Traffic Maintenance Engineer (DTME) should be advised. If the DTME is absent, the section foreman shall follow the instructions of the District Maintenance Engineer.

### **TRAFFIC CONTROL DEVICES**

Traffic control devices regulate the movement of road users, warn of unexpected or unusual roadway conditions, and inform them how to maneuver safely through or around the work area. All signs, channelizing devices, barricades, and other miscellaneous traffic control devices should work together to guide traffic safely and efficiently. Common temporary traffic control devices are outlined and described below.

#### **Signs**

Temporary traffic control zone (TTCZ) signs are the primary means of providing information and directions to roadway users. All signs must be retroreflective per MassDOT's latest standard.

Warning signs call attention to unexpected conditions and to situations that might not be readily apparent to road users on or adjacent to a roadway. Warning signs alert road users to conditions that might call for a reduction of speed or an action in the interest of safety and efficient traffic operations. Nearly all warning signs for construction and work areas have black legends and borders on a fluorescent orange background.

Regulatory signs shall be used to inform road users of selected traffic laws or regulations and indicate the applicability of the legal requirements. Regulatory signs typically have black legends and borders on a white background.

#### **Channelizing Devices**

When used properly, traffic cones, reflectorized plastic drums, and barricades guide traffic through the work area along an appropriate travel path. It takes roadway users a certain distance along the roadway to safely move away from the upcoming active work site. These transition distances are based on the following taper length (L) formulas:

$L = WS^2/60$  for speeds of 40 mph or less; or

$L = WS$  for speeds of 45 mph or more; where

- $L$  = minimum length of taper in feet,
- $S$  = posted speed limit or typical travel speed in miles per hour prior to the work, and
- $W$  = width of lane closure in feet.

The spacing of channelizing devices (in feet) is approximately equal to the existing speed of traffic (in mph).

#### **Warning Lights**

Rotating beacons and other flashing lights mounted on work vehicles, signs, or channelizing devices help alert roadway users to the work area. They may also be used to warn roadway users of hazards within the work area. The first 10 drums in any taper shall be equipped with sequential flashing lights.



### Arrow Boards

Arrow boards are a special type of sign that are highly visible work zone warning devices. They are particularly effective on highways, where both speed and volume are high. Arrow boards in the non-directional, CAUTION, mode (four corner flashing) may be used to indicate that a shoulder is closed. Arrow boards in the arrow mode shall only be used when a travel lane is dropped on a multi-lane road and one lane of traffic must merge with another. All arrow boards should be located at the beginning of each lane or shoulder closure taper without extending outside of it. Arrow boards shall flash at a rate of 25 to 40 flashes per minute. Arrow boards shall not be used to indicate a lane shift.

### BASIC REQUIREMENTS

In every work situation, the temporary traffic control setup must: Give roadway users sufficient advance warning of the work area; advise roadway users of the proper actions to take and travel paths to follow; and provide protection to roadway users, workers, and the work area. These three general requirements can be met as outlined below.

#### Provide Advance Warning

Warning devices along the approaches to a work area alert roadway Users to changes to road and operating conditions. Roadway users are usually alerted to these dangers via a sign or series of signs installed in the same order as the roadway user generally would expect to see them on long-term construction projects.

The initial project limit sign is usually a general warning such as "ROAD WORK 1500 FT". Other operational warning signs then provide the roadway user with more specific information about the situation. A minimum of three advance warning signs (the initial project limit sign and two operational warning signs) is recommended when work is located on the traveled way. Warning lights and flags can be used to attract attention to the signs. A highly visible work area helps reinforce the advance warnings.

#### Advise and Direct Travelers

Operational warning signs provide information to the road-way user such as the type of work being performed, special conditions to watch for, or actions to take. These include signs such as, SHOULDER WORK, RIGHT LANE CLOSED, DETOUR 500 FT, ROAD CLOSED to THRU TRAFFIC, POLICE OFFICER AHEAD, etc. All of these signs must be located far enough in advance of the work area that the roadway user has sufficient time to react to them appropriately. For projects in Urban Areas, see detail: Typical Device Spacing for minimum sign spacing.

#### Protect Travelers, Workers, and the Work Area

The primary protection of any work area is its own visibility. Traffic cones, reflectorized plastic drums, portable breakaway barricades, etc. are used to make the work area visible and separate workers from traffic.

PAGE 4

Other devices, such as flashing lights, flags, delineators, temporary lighting, and portable changeable message signs (PCMS) can be used to provide additional emphasis and visibility.

Workers must protect themselves by being alert to their work situation, wearing safety vests and hard hats, and by facing traffic whenever possible.

Work vehicles can also add protection when they are equipped with truck mounted attenuators, rotating beacons, flashing lights, flashing arrow boards, etc. and are parked between workers and oncoming traffic. However, workers should not position themselves between two closely parked vehicles. No private personal vehicles are allowed within the work site.

### PLANNING GUIDELINES

Decisions regarding selection of work area traffic control devices require a knowledge and understanding of the specifics of each work zone. As there may be vast differences between situations, three main variables need to be considered prior to determining the need for, or the selection of, traffic control devices: 1) location of work, 2) type of roadway, and 3) speed of traffic.

Compiling information about these variables will help with planning a safe work area control. Each of these variables is explained below.

#### Location of Work

The choice of traffic controls needed for a short-term construction, maintenance, or utility operation depends upon the work zone's location. As a general rule, the closer the active work site is to the roadway, the more control devices are needed. Work can take place:

- Away from the shoulder or edge of pavement. No special devices are needed if work is confined to an area 15 or more feet from the edge of the shoulder. A general warning sign, such as ROAD WORK AHEAD, should be used if workers and equipment must occasionally move closer to the roadway.
- On or near the shoulder/ edge of pavement. This area should be signed as if work were on the road itself, since it is part of the roadway users' recovery area. Advance warning and operational signs are needed, as well as channelization devices to direct traffic and keep the work area visible to roadway users.
- On the median of a divided highway. Work in this location may require traffic control in both directions of traffic. Advance warning and channelization devices should be used if the median is narrow.
- On the roadway. This condition requires detailed protection for workers and sufficient warning to roadway users. Advance warning must provide a general message that work is taking place as well as information about specific hazards and specific actions the roadway user must take.

## TYPE OF ROADWAY

The characteristics of the roadway also have an important influence on the selection of work area traffic control. The roadway, itself, may present special hazards. You should plan for maximum protection, using the worst hazard present as your guide to signing the work area. Some general considerations are described below for road conditions.

**One-way roads:** A one-way road requires signage on both sides of the road if it carries two or more lanes in one direction, ensuring roadway users in all lanes are alerted and informed.

### Two-way roads:

- **Undivided:** Two-way, undivided roads will usually require controls for both directions of traffic. When the active work site is well off the roadway, controls for the opposite lane may be eliminated.
- **Divided:** Work on divided multi-lane roadways can often be handled as work along a one-way road (i.e. signs are provided along both sides of the roadway along the direction affected). If the work is in the median, both directions of traffic must be controlled, and both approaches should be double signed (i.e. have all 3 advance warning signs on both sides of each direction).

## EFFECTS OF SPEED ON WORK ZONES

Speed is an important consideration in the use of work area traffic control devices. As a general rule, the greater the speed of traffic approaching a work area, the greater the size, number, and spacing of control devices.

**Size.** The standard size for most warning signs is 36 x 36 inches on conventional roadways and 48 x 48 inches on freeways and expressways. Signs larger than the standard 36 x 36 inches may be desirable on high-speed conventional roads.

**Position.** Install signs far enough in advance of the work area so the roadway users have time to react to them (see charts associated with diagrams for spacing).

## OTHER FACTORS

**Sight Obstructions.** To ensure safety, work areas must be visible. Assess the placement of the temporary traffic control devices by driving through the area, and determine if the devices can be easily seen and provide sufficient time for roadway users to react in a safe manner. Extra precaution should be enacted in areas where horizontal or vertical curves may obstruct a roadway user's clear view of road activities ahead.

**Police/Flaggers.** It should be noted that the MUTCD does not require police/flaggers for stationary setups. If police/flaggers are used, a police/flagger ahead sign should be used in advance of any point where the police/flagger is stationed to control road users.

## PROCEDURES FOR WORK AREA TRAFFIC CONTROL

### 1. PLAN YOUR WORK

**Inspect** location of work area and its surroundings.

**Analyze:**

- Location of work in relation to the traveled way, intersecting road-ways, driveways, and sight distances;
- Type of roadway and traffic involved; and
- Volume and speed of traffic.

**Meet and discuss** the work and necessary traffic control with the crew.

**Study** representative illustrations in this guide to develop a temporary traffic control plan (TTCP).

**Other Considerations:**

- Base your traffic control plan on the premise that all roadway users are unfamiliar with the area.
- The closer the work area location is to traffic, the more controls are needed.
- Plan for maximum protection.
- Select and inspect the temporary control devices needed (including all warning signs), if they are not in good condition, REPLACE THEM!
- Then collect and transport them to the work site.
- Determine their proper placement.
- Install signs and other traffic control devices prior to allowing personnel or equipment onto the roadway.
- Make sure signs are reflective, accurate, clean, and meet specifications. Completely cover any existing permanent signs that will conflict with the messages of the new work area control signs.

### 2. INSTALLING/REMOVING TEMP. TRAFFIC CONTROL DEVICES

Care must be exercised when installing and removing temporary traffic control (TTC) devices. The traffic control needed to perform the operation safely is dictated by the location on the roadway the operation will occur: in a shoulder or a lane, in the left lane or right, etc. In all cases, installing TTC begins and ends as a mobile operation.

A shadow vehicle with a truck mounted attenuator (TMA) shall be used to protect workers installing and removing TTC devices on all roadways with a posted speed limit of 45 MPH or greater as directed by the engineer. TTC devices shall not be installed or removed from a shadow vehicle with a TMA. TTC devices shall be installed or removed from a work operation vehicle only and a shadow vehicle with a TMA shall be used to protect the workers installing or removing the devices.

## **PROCEDURES FOR WORK AREA TRAFFIC CONTROL (CONT.)**

### **3. INSTALL TRAFFIC CONTROL DEVICES AT WORK SITE FOR LOWER SPEED ( $\leq 40$ MPH) ROADWAYS:**

- 1) All devices shall be installed in order with the flow of traffic.
- 2) Where one direction of traffic is being affected, the first sign installed should be the sign farthest from the work site, and on the same side as the work.
- 3) Where two directions of traffic are affected, install signs for opposing traffic first, starting with the sign farthest from the work area. When signs for opposing traffic have been installed, install signs on the same side as the work area, again beginning with the sign farthest from the active work site.
- 4) Once signs are in place, other traffic control devices shall be installed in the same manner as the signs.

### **FOR HIGHER SPEED ( $\geq 45$ MPH) ROADWAYS:**

- 1) All devices shall be installed in order with the flow of traffic.
- 2) Install all advance warning signs, beginning with the ROAD WORK XXX (W20-1) sign and ending with the END ROAD WORK/DOUBLE FINES END (MA-R2-10E) sign.
- 3) Install all signs beginning with the opposite side which will be closed (for a right lane closure; first, install all signs on the left side (shoulder) and then install all signs on the right side (shoulder). No signs shall be erected on the roadway unless delineated by traffic control devices.
- 4) If required, install shoulder taper as the mobile operation advances.
- 5) Install arrow board on the shoulder prior to the merging taper or as close to the beginning of the merging taper as possible.
- 6) Install channelizing devices to form a merging taper. Use of a shadow vehicle with a TMA during installation is required on roads with speed limits of 45 MPH or greater or as directed by the Engineer.
- 7) Install traffic control devices along the buffer space at the appropriate spacing.
- 8) Continue placing devices along the work space at the appropriate spacing.
- 9) Install devices for the termination area as necessary.
- 10) Place the shadow vehicle with a TMA in advance of the first work crew or hazard approached by motorists. Multiple shadow vehicles may be required based on the number of lane and shoulder closures implemented.

### **4. INSPECT WORK AREA SIGNING AND CONTROL DEVICES**

- 1) Assess the placement of the temporary traffic control devices by driving through the work area. All approaches to the work zone should be checked.
- 2) Ensure roadway users will have sufficient time to read signs and react in a safe manner.

### PROCEDURES FOR WORK AREA TRAFFIC CONTROL (CONT.)

- 3) Check visibility of entire work area. If approaching roadway users can't see the work area well, or if they can't see ahead to traffic that may already be queued on the approach because of the work, additional traffic control devices should be deployed.
- 4) Check to ensure the proper temporary traffic control devices are positioned to protect workers from traffic (where possible).
- 5) Ensure all workers wear safety vests, hard hats, and all other necessary safety equipment. All worker safety gear should be in good condition. All reflective gear should be clean and highly visible in the dark.
- 6) Record in the log book the number and location of all signs and devices.

#### Considerations:

- Work area signs should never be blocked from view or obscured by vegetation, existing signs, or other obstructions.
- Flags, flashing lights, and edge line traffic cones can be used to improve visibility.

### 5. REMOVE TRAFFIC CONTROL DEVICES AT WORK SITE

**All workers and equipment should be clear from work site BEFORE removing signs and other devices.**

#### FOR LOWER SPEED ( $\leq 40$ MPH) ROADWAYS:

- 1) Remove signs and other devices within the delineated area when work is complete.
- 2) Remove other traffic control devices in the reverse order in which they were installed
- 3) Remove signs in the reverse order in which they were installed (i.e. sign closest to the work area to be removed first).
- 4) When the operation is complete, uncover any existing permanent signs covered in Step 2.
- 5) Record in the log book the time at which the signs were removed.

#### FOR HIGHER SPEED ( $\geq 45$ MPH) ROADWAYS:

All TTC devices for a stationary lane closure on a multi-lane roadway, except advance warning signs, should be removed against the flow of traffic in the following sequence:

- 1) Remove the channelizing devices starting from the end of the activity area working back to the widest part of the merging taper.
- 2) A shadow vehicle with TMA shall be positioned to protect workers removing devices and work backwards as the setup is removed from the roadway.

### PROCEDURES FOR WORK AREA TRAFFIC CONTROL (CONT.)

- 3) Place the removal vehicle on the shoulder, and remove the channelizing devices from the merging taper by hand onto the work vehicle.
- 4) Remove the arrow board once traffic is clear and it is safe to do so.
- 5) Circle back and moving with the flow of traffic, remove the advance warning signs starting with the opposite side from previous lane closure first.
- 6) At no time shall workers run across the multilane roadway to remove signs on both sides of the road simultaneously.
- 7) Record in the log book the time at which the signs were removed

### RAMP FACILITIES

At all times it is necessary to control the on and off-ramp traffic during the installation and breakdown of traffic control devices. Use of temporary traffic slow-downs or rolling roadblocks is recommended to allow for the safety of workers handing temporary traffic control devices on ramp facilities. A shadow vehicle with a TMA shall be used to protect the workers installing or removing the devices. At no time shall the work operation vehicle be used as the shadow vehicle with the TMA.

### USE OF THIS GUIDE

Illustrations showing minimum standards for short-term construction, maintenance, and utility operations are arranged in this guide by type of operation. The users of this guide should compare all illustrated examples and examine their differences. After gathering information about the work zones using the general guidelines as outlined, proceed as follows:

- 1) Turn to the Index. Consider the type of operations and the type of roadway upon which work will occur.
- 2) Select the figure that most closely matches the conditions where you plan to work. Remember that all diagrams represent minimum standards.
- 3) Read the title of the illustration to ensure that it is appropriate to your location. Study the layout of traffic control devices and read all notes.
- 4) Consult the appropriate tables, as directed on each illustration to determine taper length and proper spacing of signs. Notice that distances change when speeds change. Also note that these are guidelines, only, and they must be adapted to your specific work area.
- 5) Use the **“PROCEDURES FOR WORK AREA TRAFFIC CONTROL”** for assistance in completing all necessary steps to provide effective and safe work area traffic control.





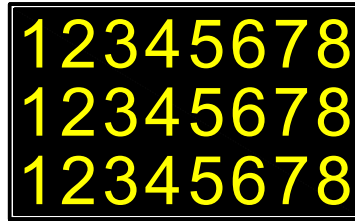
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Work Zone Safety  
Standard Details  
and Drawings

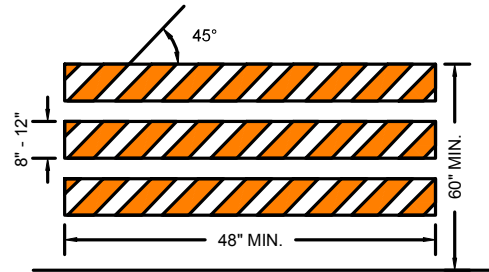
FIGURE 1  
TYPICAL TRAFFIC CONTROL DEVICES  
NOT TO SCALE



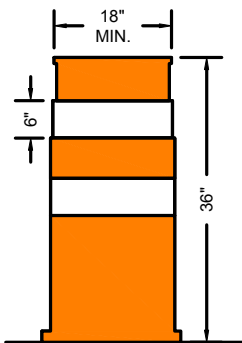
**SIGN**



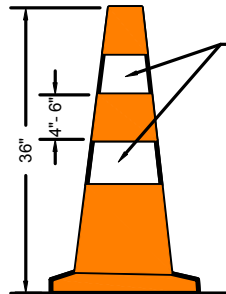
**PORTABLE CHANGEABLE  
MESSAGE SIGN (PCMS)**



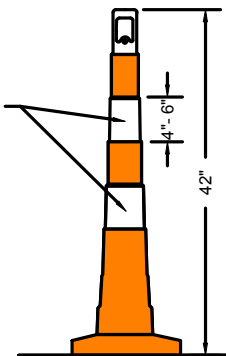
**TYPE III BARRICADE**



**DRUM**

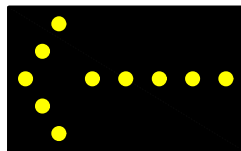


RETROFLECTIVE  
BANDS

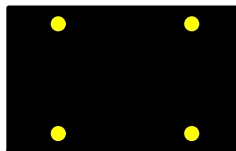


**CONES**

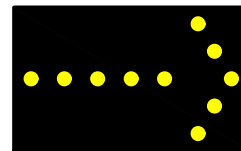
Cones may be used for all daytime operations. For night work, drums should be used to form the taper(s) and cones can be used along the tangent section of the work setup.



**LEFT**

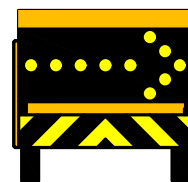


**CAUTION**



**RIGHT**

**ARROW BOARD (WITH MODE)**



**TRUCK MOUNTED ATTENUATORS**

Truck Mounted Attenuators (TMA) shall be positioned between the start of the work area and the end of the designated buffer zone. The TMAs are to be positioned in each temporarily closed lane. This includes shoulders ( $\geq 8$  feet) whether combined with a travel lane closure or being closed alone. These TMA conditions are required on roadways with speeds of 45 MPH or greater. TMAs can be used on other roadways at the discretion of the engineer. TMAs shall be used for the deployment and removal of all traffic control devices, including all advance warning signs.

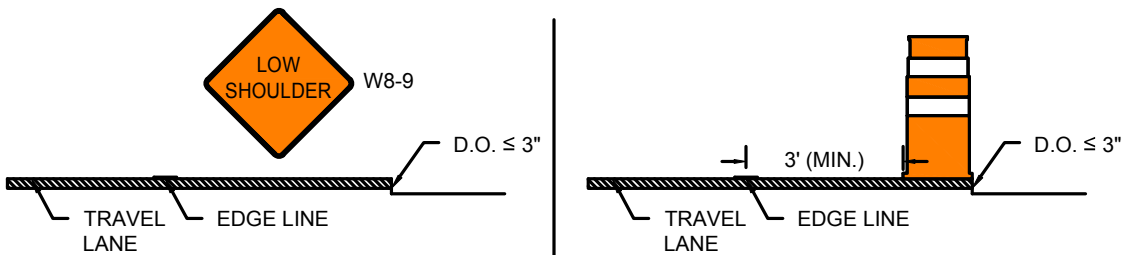


## SHORT-TERM PAVEMENT EDGE DROP-OFFS

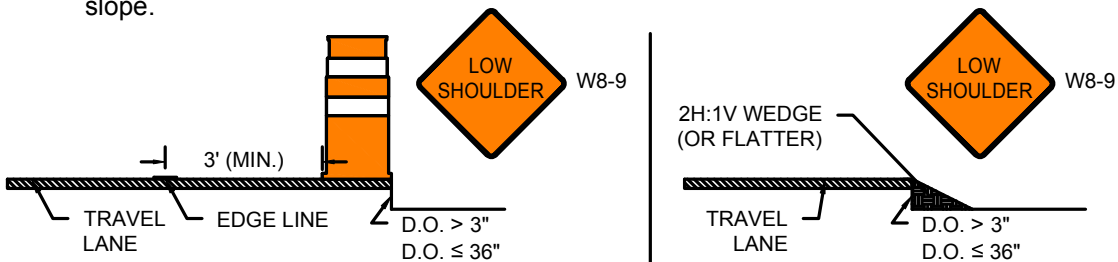
*Note that this guidance is adopted from the Roadside Design Guide, 4th Edition.*

Pavement drop-offs may occur during paving, excavation, and other construction activities. Drop-offs create hazards for vehicles if not properly mitigated. The following applies for all roads with speed limits greater than 30 mph; for roads with speed limits of 30 mph or less, treatments for pavement edge drop-offs are at the discretion of the Engineer. Drop-offs between adjacent, open travel lanes should not exceed 2", and any drop-off in excess of 3" should not be left unattended without one of these mitigation measures applied.

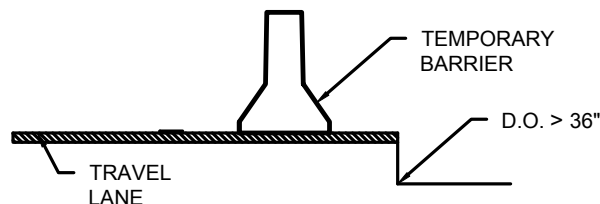
- Shoulder drop-offs 3" or less adjacent to a shoulder or active travel lane should be mitigated by:
  - ✓ A W8-9 (LOW SHOULDER) sign in advance of and at regular intervals throughout the treatment; or
  - ✓ The placement of drums on the traffic side of the drop-off.



- Shoulder drop-offs greater than 3" but less than or equal to 36" should be mitigated by:
  - ✓ A W8-9 (LOW SHOULDER) sign in advance of and at regular intervals throughout the treatment and the placement of drums on the traffic side off the drop-off, offset at least 3' from the travel lane; or
  - ✓ A W8-9 (LOW SHOULDER) sign in advance of and at regular intervals throughout the treatment and the placement of a temporary wedge of material along the face of the drop-off. The wedge should consist of stable material placed on a 2H:1V or flatter slope.



- Shoulder drop-offs greater than 36" must be protected by temporary barrier.





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# Work Zone Safety Standard Details and Drawings

## TYPICAL DEVICE SPACING

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	320	305	20	55
45-55	500 / 1000 / 1000	660	495	40	40
60-65	1000 / 1600 / 2600	780	645	40	50

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

MINIMUM SPACING OF ADVANCE WARNING SIGNS FOR URBAN ROADWAYS	
ROAD TYPE	DISTANCE BETWEEN SIGNS
URBAN (LOW SPEED)	100 FT
URBAN (HIGH SPEED)	350 FT

### NOTES

1. 40 FT = 10 FT PAVEMENT MARKING + 30 FT SKIP

### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

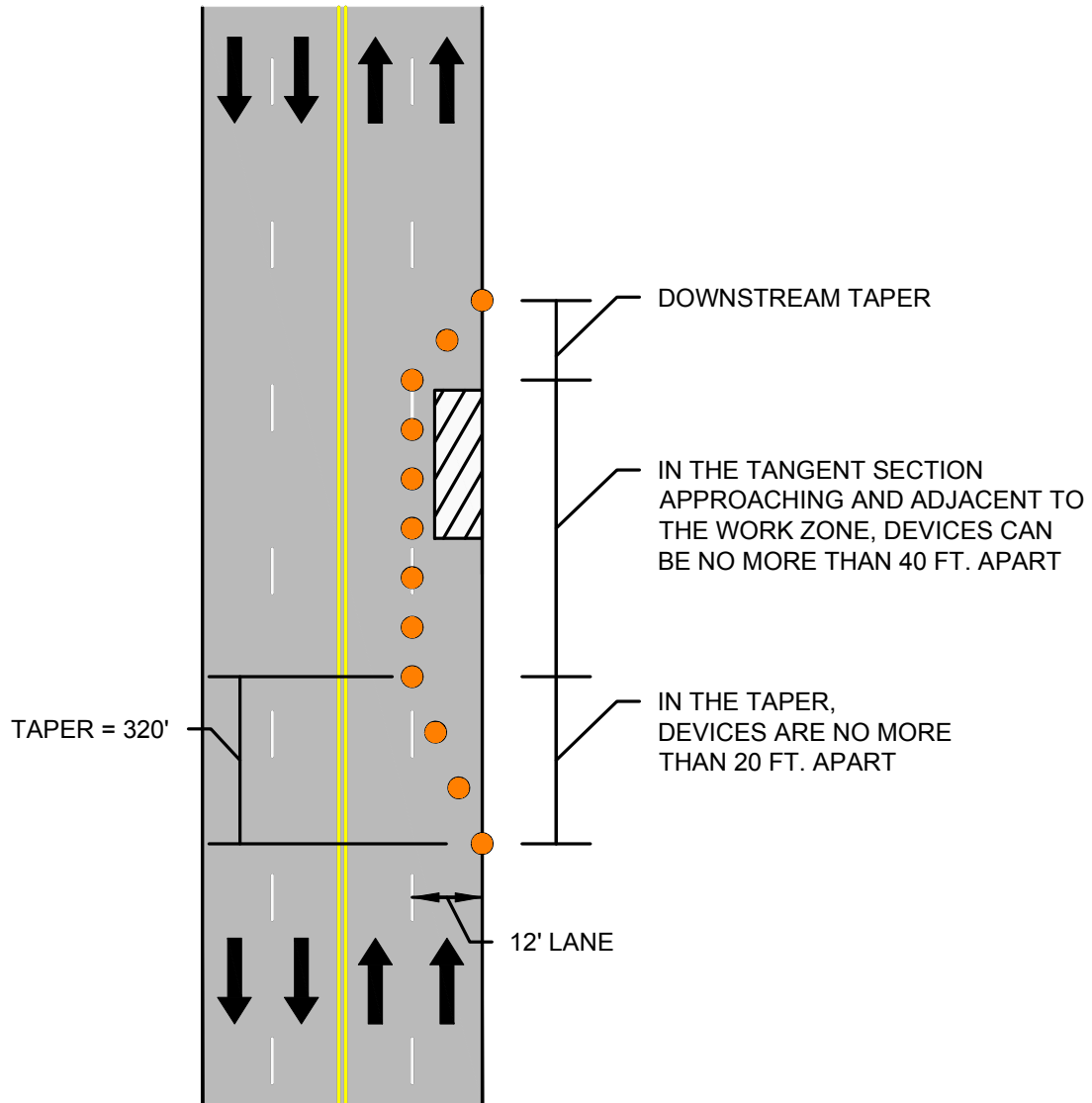


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
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## FLAGGING GUIDANCE

### Guidance for Flagging Operations

**NOTE:**

A flagger shall always be aware of their surroundings and have a good escape route. A flagger shall never be positioned directly beside or against construction equipment. When a flagger is required to direct traffic in an area where the escape route is partially blocked by a traversable obstruction such as a guardrail, the flagger shall be physically capable of traversing that obstruction. Prior to commencing a project, the supervisor in charge shall review the project, including guardrail areas, for safe flagging stations. The supervisor in charge shall clearly communicate with the flagger(s), indicating any locations where they cannot safely perform their duties.

Each flagger shall be equipped with the following high visibility clothing, signaling, and safety devices:

- 1) A white protective hard hat with a minimum level of reflectivity per the requirements of ANSI, Type I, Class E&G;
- 2) A clean, unfaded, untorn lime/yellow reflective safety vest and pants meeting the requirements of ANSI 107 Class 3 with the words "Traffic Control" on the front and rear panels in minimum two (2) inch (50 millimeter) high letters;
- 3) A 24 inch "STOP/SLOW" traffic paddle conforming to the requirements of Part 6E.03 of the Manual on Uniform Traffic Control Devices (MUTCD), a weighted, reflectorized red flag, flagger station advance warning signage, and two-way radios capable of providing clear communication within the work zone between flaggers, the Contractor, and the Engineer. The traffic paddle shall be mounted on a pole of sufficient length to be seven feet above the ground as measured from the bottom of the paddle;
- 4) A working flashlight with a minimum of 15,000 candlepower and a six inch red attachable wand, a whistle with a working lanyard, and a First Aid kit that complies with the requirements of ANSI Z308.1; and
- 5) An industrial/safety type portable air horn that complies with the requirements of the U.S. Coast Guard.

A "STOP/SLOW" paddle should be the primary hand-signaling device. It shall have an octagonal shape on a rigid handle. Flag use should be limited to emergency situations.

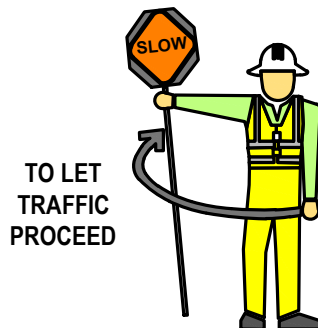


#### Properly Trained Flaggers

- Give clear messages to drivers.
- Allow distance for drivers to react.
- Coordinate with other flaggers.
- Use standard signaling methods.

#### Properly Equipped Flaggers

- Use approved stop/slow paddles.
- Use approved safety apparel.
- Use retroreflective equipment.
- Use hand held radios, as needed.
- All flaggers shall wear safety apparel that meets ANSI Class 3 requirements. The combination of vest and pants is required.



#### Proper Flagging Stations

- Good approach sight distance.
- Highly visible to traffic.
- Stand alone away from other machinery and people.
- Stand on right edge of pavement or shoulder- proceed to centerline only when first vehicle has come to stop.
- Have a good escape route.



#### Proper Advance Warning Signs

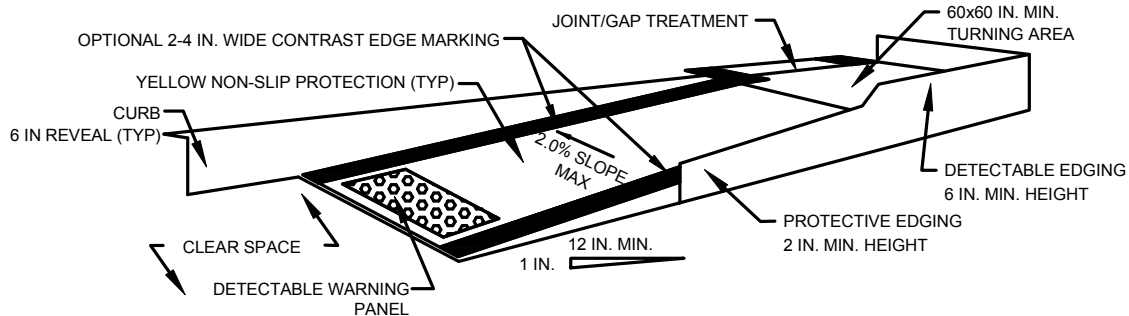
- Always use warning signs.
- Allow for reaction distance from signs.
- Remove signs if no longer necessary or not flagging.
- Use free hand in up-and-down motion to help slow traffic.



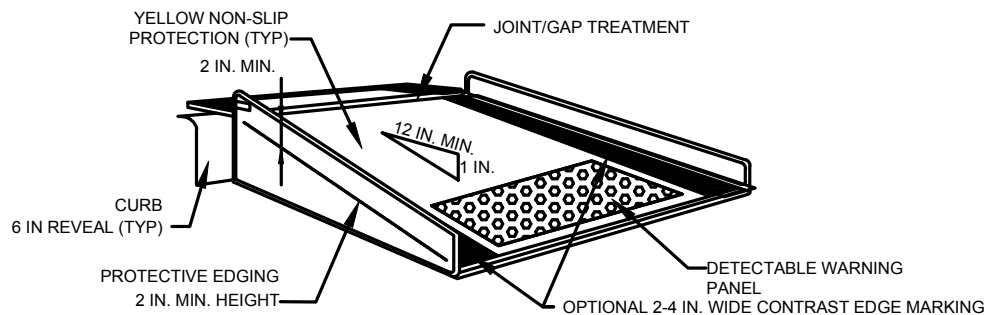
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# Work Zone Safety Standard Details and Drawings

**FIGURE 4**  
**TYPICAL PEDESTRIAN DEVICES**  
**(1 OF 2)**  
**NOT TO SCALE**



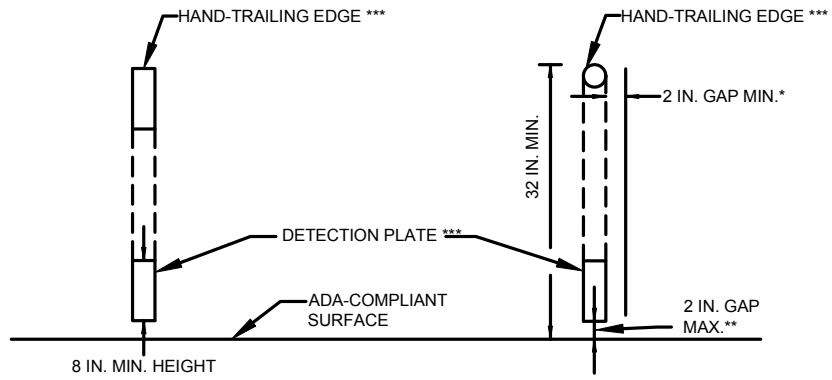
**TEMPORARY CURB RAMP-PARALLEL TO CURB**



**TEMPORARY CURB RAMP-PERPENDICULAR TO CURB**

## NOTES:

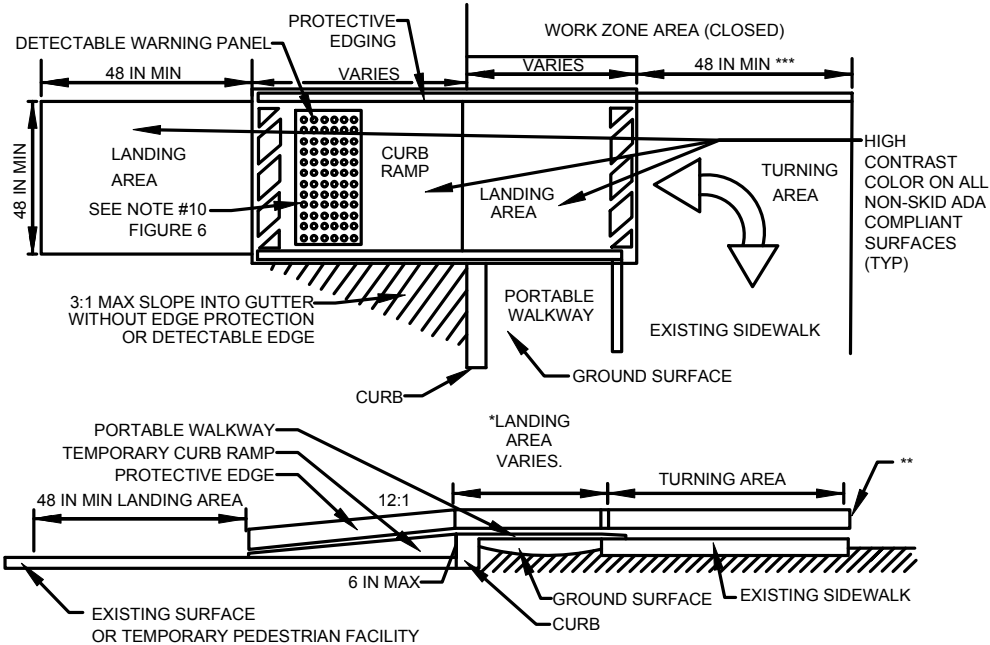
1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE, AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. PROTECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



**CROSS SECTION VIEW**

**PEDESTRIAN CHANNELIZING DEVICE**

- \* THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
- \*\* A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.
- \*\*\* THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE CONTINUOUS THROUGHOUT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.



**TEMPORARY CURB RAMP**

- \* LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
- \*\* DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
- \*\*\* 60 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK.



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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
TWO LANE UNDIVIDED ROADWAY  
HALF OF ROADWAY CLOSED  
WORK NEAR CURVE

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	50	100	20	30
45-55	500 / 1000 / 1000	100	150	40	20

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

#### NOTES

1. IF POLICE DETAIL/UNIFORMED FLAGGER SUPPORT IS REQUIRED, PROVIDE TWO UNITS.
2. MA-R2-10a LOCATED AT C/2.
3. \*\* = EXTEND ENOUGH SO TAPER IS BEFORE CURVE

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER



TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE







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Work Zone Safety  
Standard Details  
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STATIONARY OPERATIONS  
TWO LANE UNDIVIDED ROADWAY  
HALF OF ROADWAY CLOSED

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	50	100	20	30
45-55	500 / 1000 / 1000	100	150	40	20

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED REGULATORY OR WORK ZONE SPEED	SEPARATION BETWEEN RUMBLE STRIPS
36-mph to 55-mph	15-feet
35-mph and under	10-feet

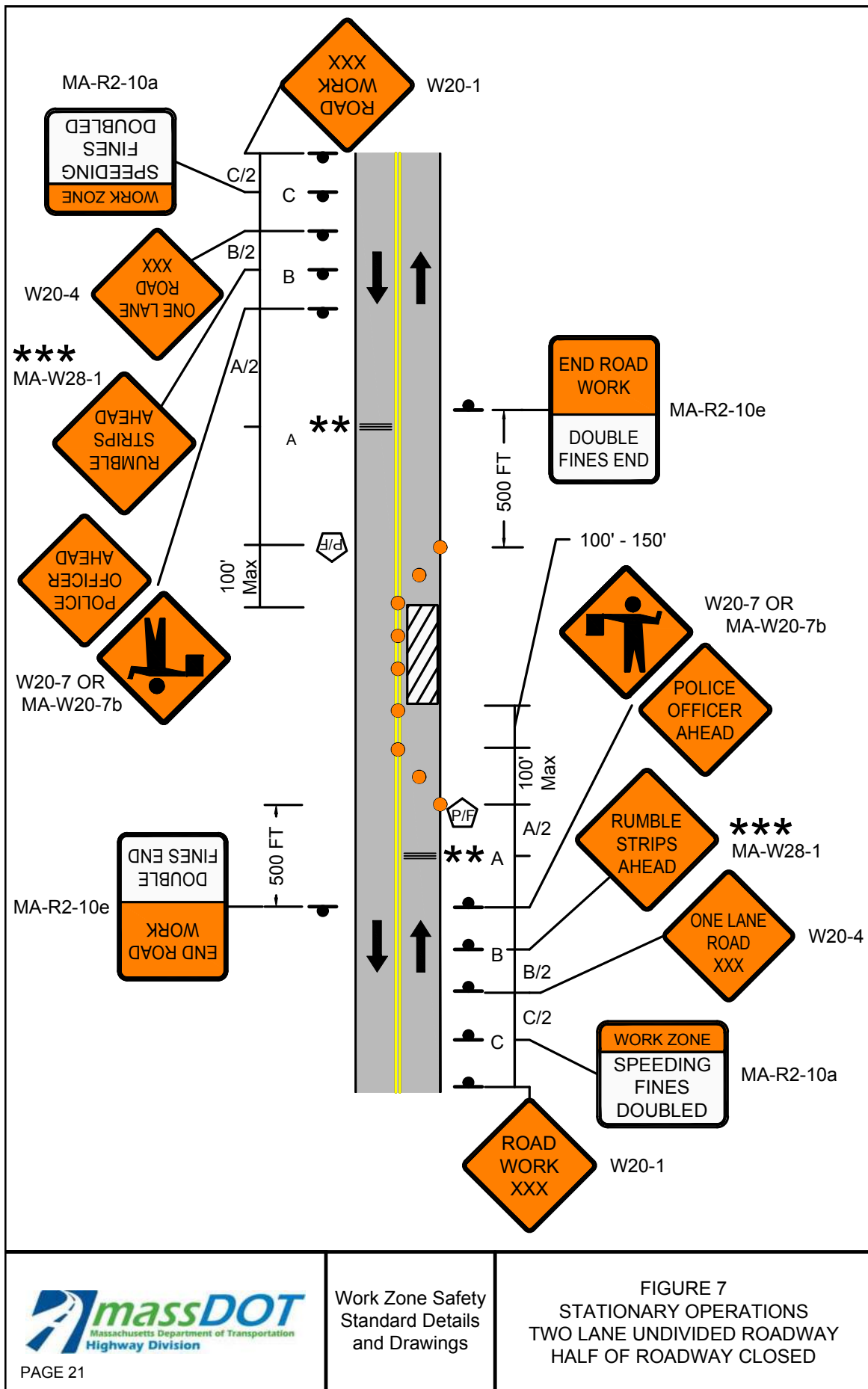
#### NOTES

1. IF POLICE DETAIL/UNIFORMED FLAGGER SUPPORT IS REQUIRED, PROVIDE TWO UNITS.
2. MA-R2-10a LOCATED AT C/2.
3. \*\* OPTIONAL AT THE ENGINEER'S DISCRETION.
4. \*\*\* SHALL BE DEPLOYED IF RUMBLE STRIPS ARE PRESENT.

#### LEGEND

	WORK ZONE
	CHANNELIZATION DEVICE
	FLASHING ARROW BOARD
	PORTABLE CHANGEABLE MESSAGE SIGN
	TRUCK MOUNTED ATTENUATOR
	RADAR SPEED FEEDBACK BOARD
	POLICE DETAIL OR UNIFORMED FLAGGER
	TEMPORARY PORTABLE RUMBLE STRIP
	TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
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and Drawings

STATIONARY OPERATIONS  
TWO LANE UNDIVIDED ROADWAY  
SHOULDER CLOSED

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		SHOULDER TAPER LENGTH (L/3) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	110	305	20	45
45-55	500 / 1000 / 1000	220	495	40	30
60-65	1000 / 1600 / 2600	260	645	40	35

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

#### NOTES

1. MA-R2-10a at C/2 and A/2.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

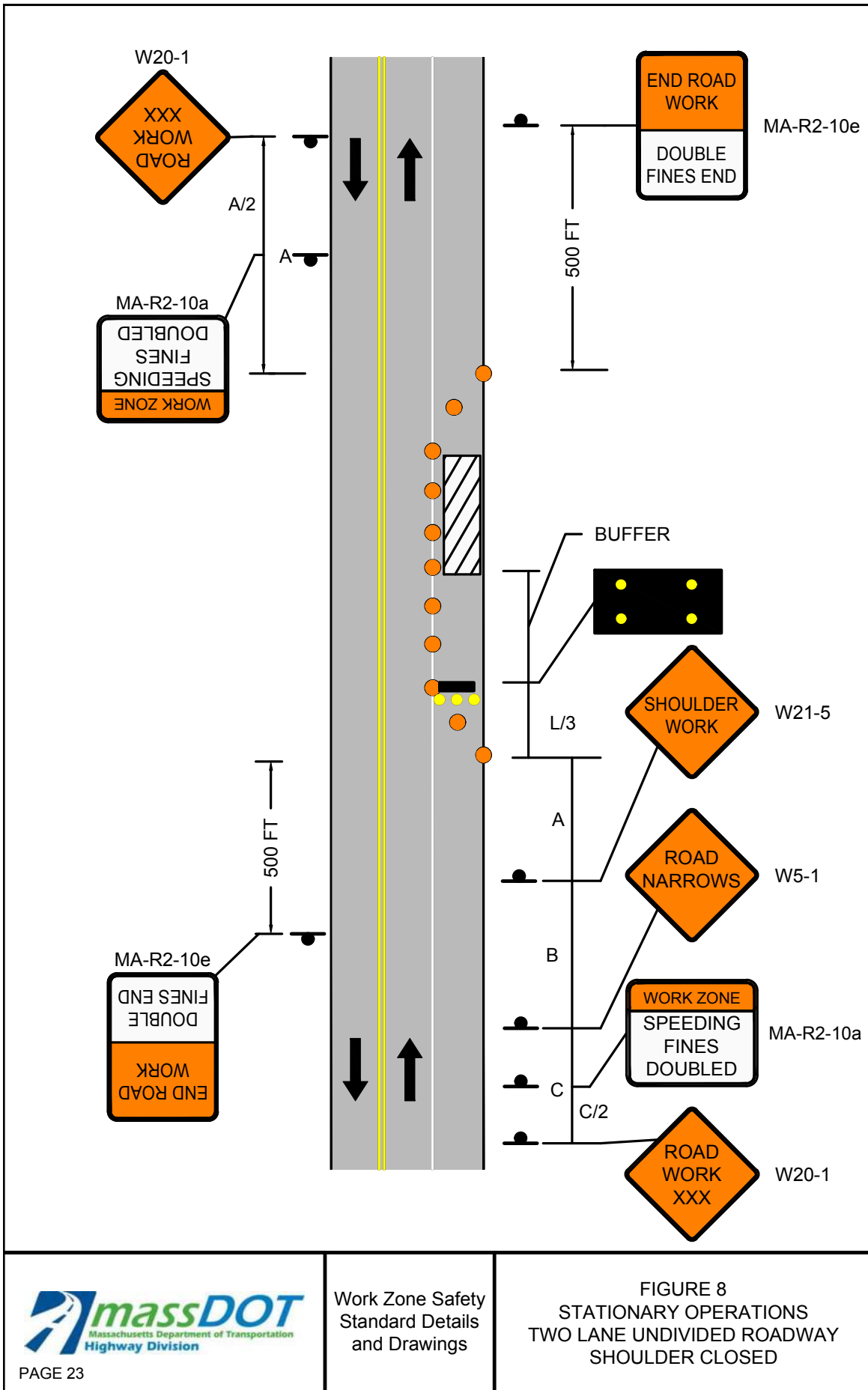


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
TWO LANE UNDIVIDED ROADWAY  
WITH TRAVERSABLE SHOULDER  
HALF OF ROADWAY CLOSED  
MAINTAIN TWO-WAY TRAFFIC

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	160	305	20	125
45-55	220	330	495	40	100
60-65	260	390	645	40	115

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

#### NOTES

1. MA-R2-10a LOCATED AT C/2.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

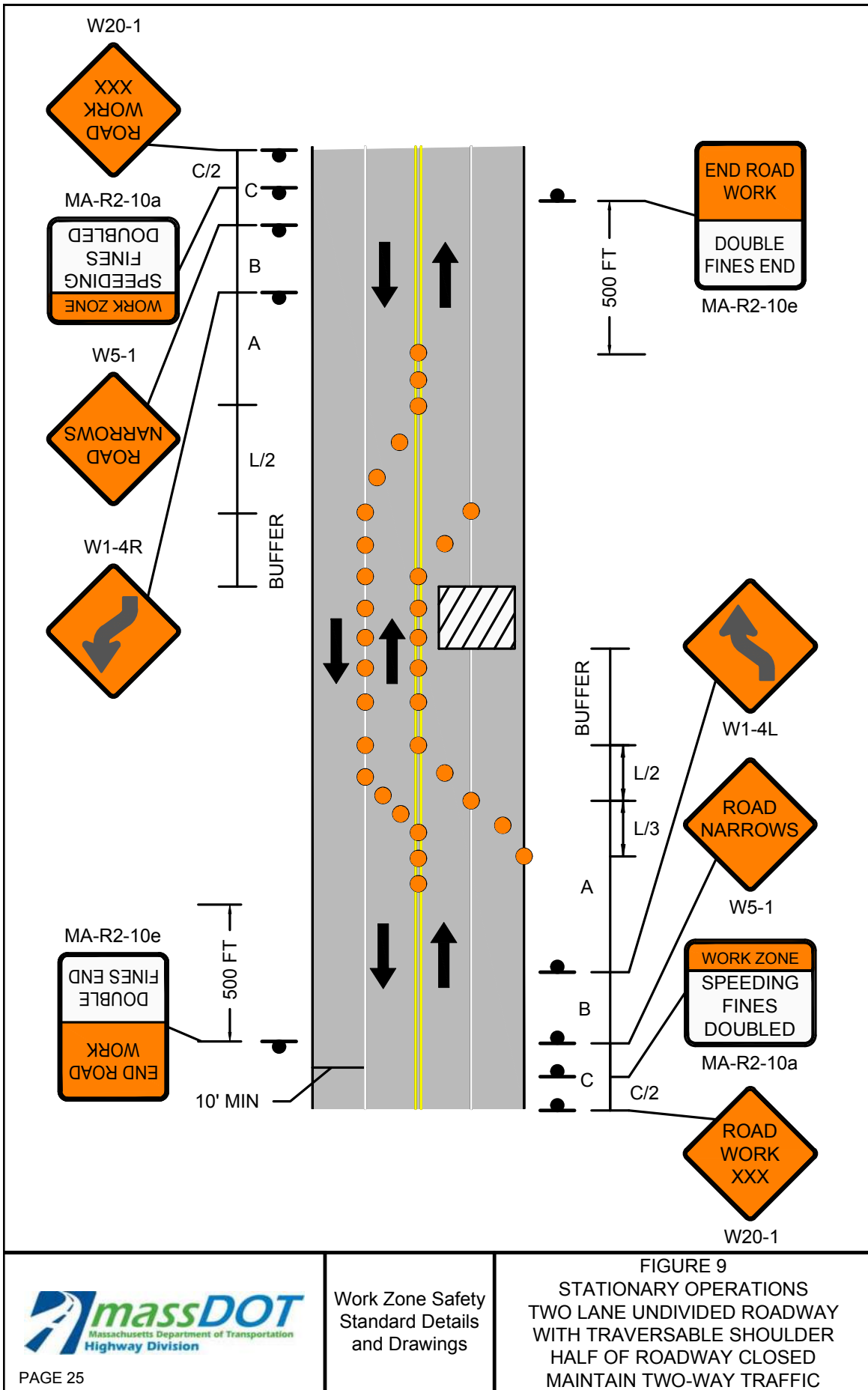


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
FOUR LANE UNDIVIDED ROADWAY  
RIGHT LANE CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	305	20	60
45-55	220	660	495	40	50
60-65	260	780	645	40	55

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

#### NOTES

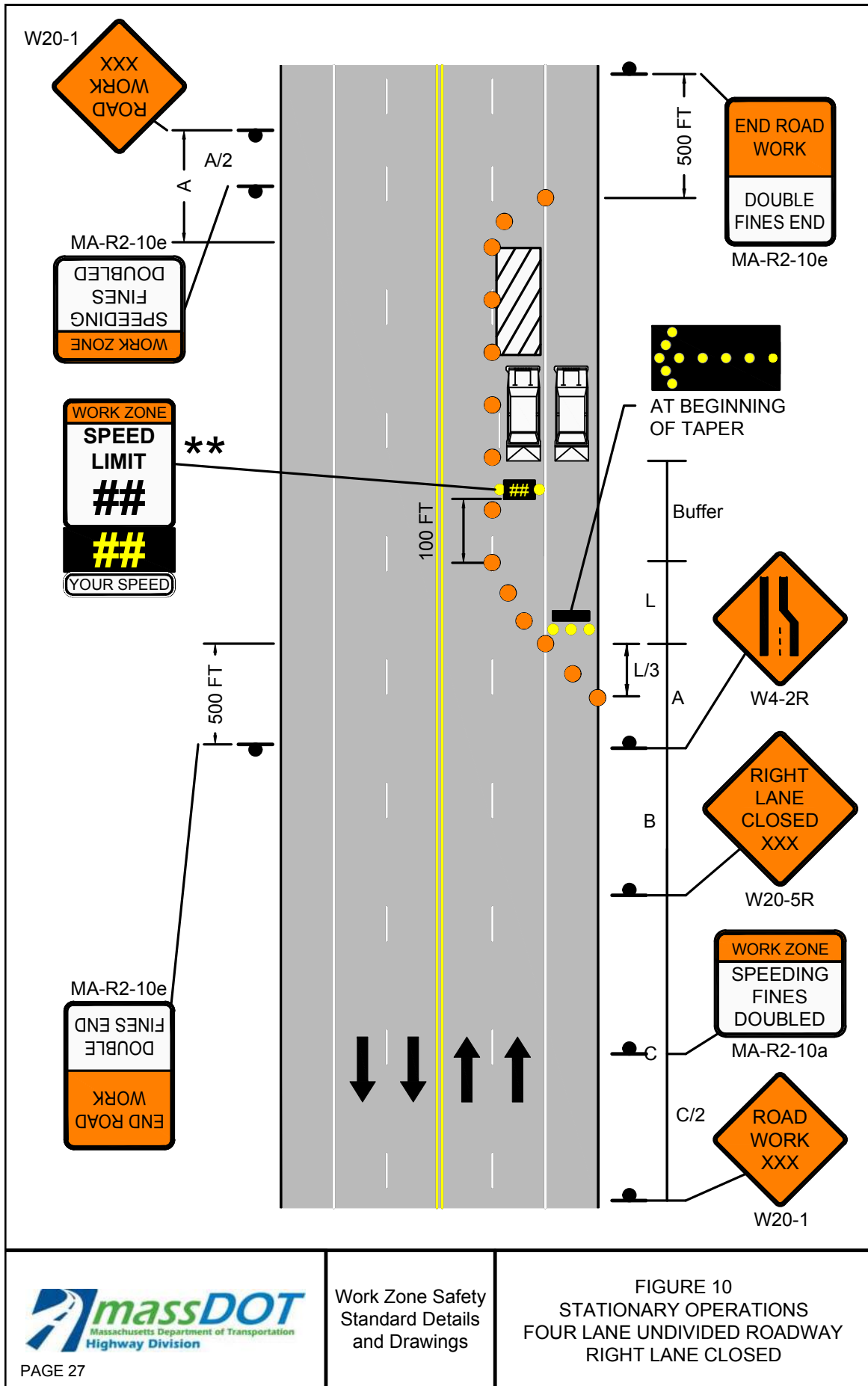
1. MA-R2-10a LOCATED AT A/2 AND C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION.

#### LEGEND

	WORK ZONE
	CHANNELIZATION DEVICE
	FLASHING ARROW BOARD
	PORTABLE CHANGEABLE MESSAGE SIGN
	TRUCK MOUNTED ATTENUATOR
	RADAR SPEED FEEDBACK BOARD
	POLICE DETAIL OR UNIFORMED FLAGGER
	TEMPORARY PORTABLE RUMBLE STRIP
	TYPE III BARRICADE

NOT TO SCALE







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Work Zone Safety  
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and Drawings

STATIONARY OPERATIONS  
FOUR LANE UNDIVIDED ROADWAY  
LEFT LANE CLOSED

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	320	305	20	105
45-55	500 / 1000 / 1000	660	495	40	80
60-65	1000 / 1600 / 2600	780	645	40	100

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

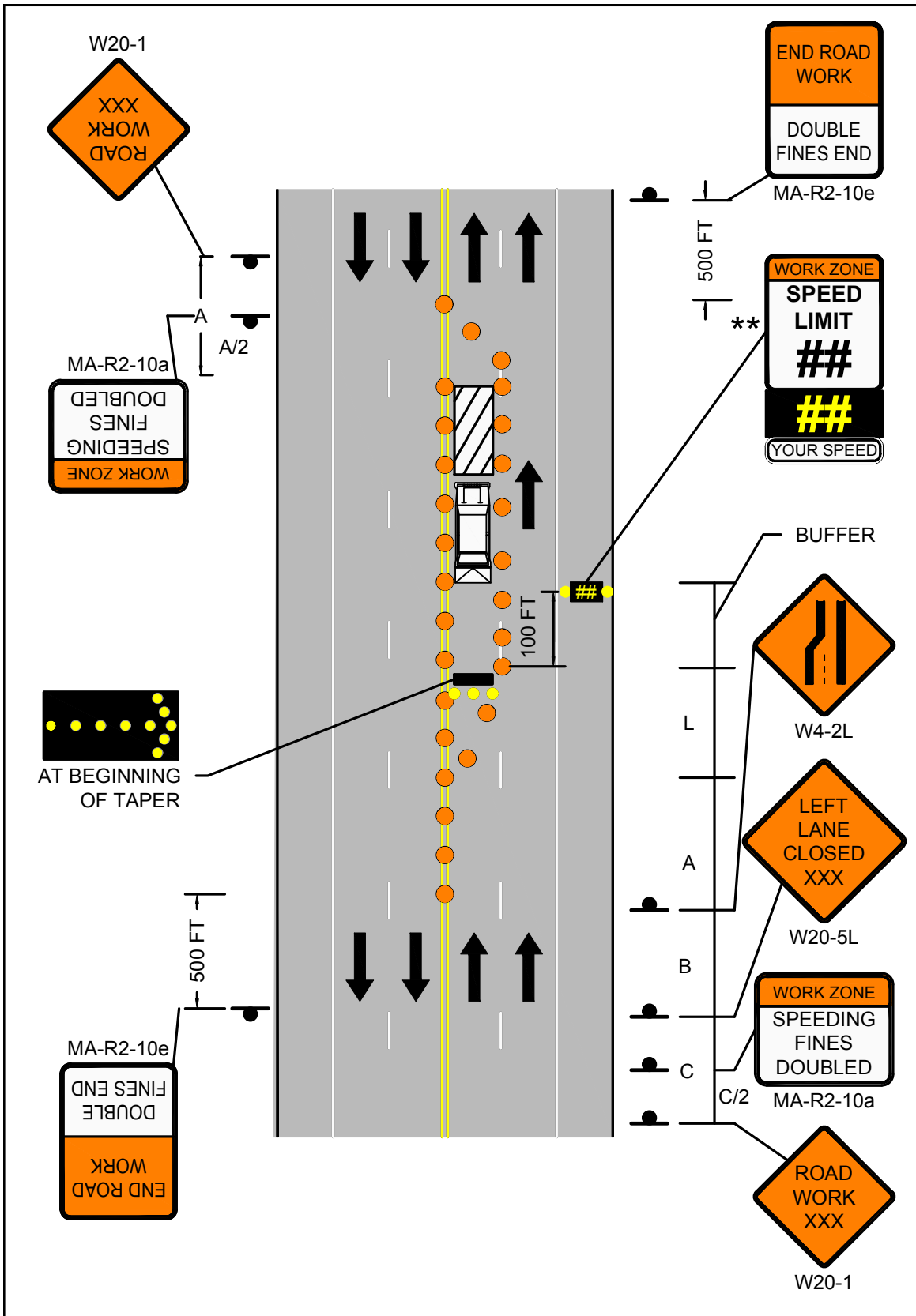
#### NOTES

1. MA-R2-10a LOCATED AT A/2 AND C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION. 2' OFFSET FROM EDGE OF TRAVEL LANE TO RADAR SPEED FEEDBACK BOARD IS REQUIRED. BOARD MAY BE MOVED FULLY OR PARTIALLY OFF PAVED SHOULDER, IF REQUIRED.

#### LEGEND

	WORK ZONE
	CHANNELIZATION DEVICE
	FLASHING ARROW BOARD
	PORTABLE CHANGEABLE MESSAGE SIGN
	TRUCK MOUNTED ATTENUATOR
	RADAR SPEED FEEDBACK BOARD
	POLICE DETAIL OR UNIFORMED FLAGGER
	TEMPORARY PORTABLE RUMBLE STRIP
	TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
Standard Details  
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STATIONARY OPERATIONS  
FOUR LANE UNDIVIDED ROADWAY  
HALF OF ROADWAY CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)					
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	160	305	20	140
45-55	220	660	330	495	40	120
60-65	260	780	390	645	40	140

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

#### NOTES

1. MA-R2-10a LOCATED AT C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION.
3. W1-4L SHALL BE PLACED AT THE MIDDLE OF THE TANGENT.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER



TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
RIGHT LANE CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	305	20	60
45-55	220	660	495	40	50
60-65	260	780	645	40	55

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

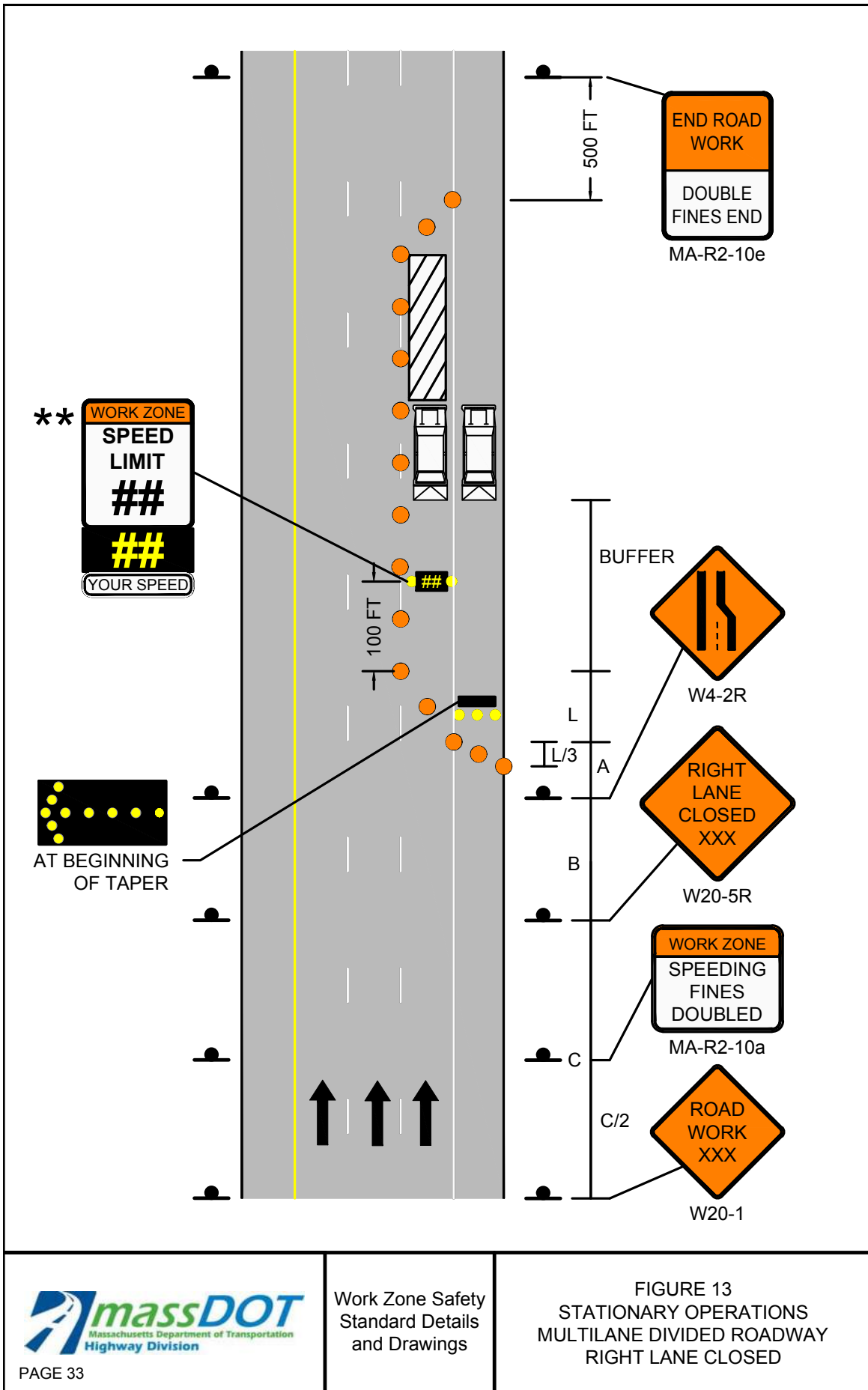
#### NOTES

1. MA-R2-10a LOCATED AT C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION.

#### LEGEND

	WORK ZONE
	CHANNELIZATION DEVICE
	FLASHING ARROW BOARD
	PORTABLE CHANGEABLE MESSAGE SIGN
	TRUCK MOUNTED ATTENUATOR
	RADAR SPEED FEEDBACK BOARD
	POLICE DETAIL OR UNIFORMED FLAGGER
	TEMPORARY PORTABLE RUMBLE STRIP
	TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
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and Drawings

STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
LEFT LANE CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	305	20	60
45-55	220	660	495	40	50
60-65	260	780	645	40	55

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

#### NOTES

1. MA-R2-10a LOCATED AT C/2.
2. \*\*OPTIONAL AT THE ENGINEER'S DISCRETION.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER



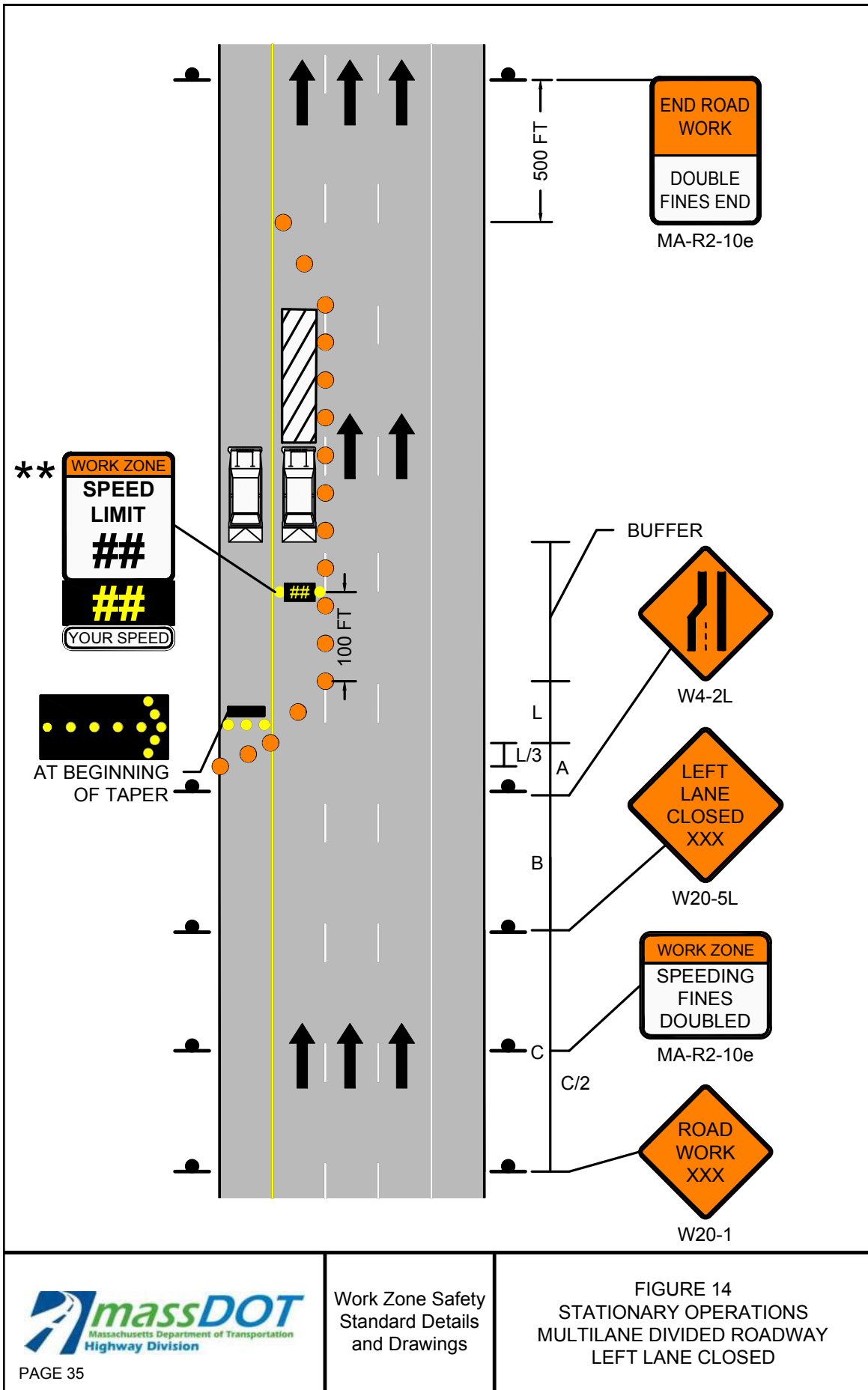
TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE







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Work Zone Safety  
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and Drawings

STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
CENTER LANE OR RIGHT/CENTER  
LANES CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)					
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	TANGENT LENGTH BETWEEN TAPERS T (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	640	305	20	110
45-55	220	660	1320	495	40	100
60-65	260	780	1560	645	40	115

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

#### NOTES

1. MA-R2-10a LOCATED AT C/2.
2. \*\*\*OPTIONAL AT THE ENGINEER'S DISCRETION.
3. \*\*\*THIS SET OF SIGNS SHALL BE LOCATED AT T/2.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

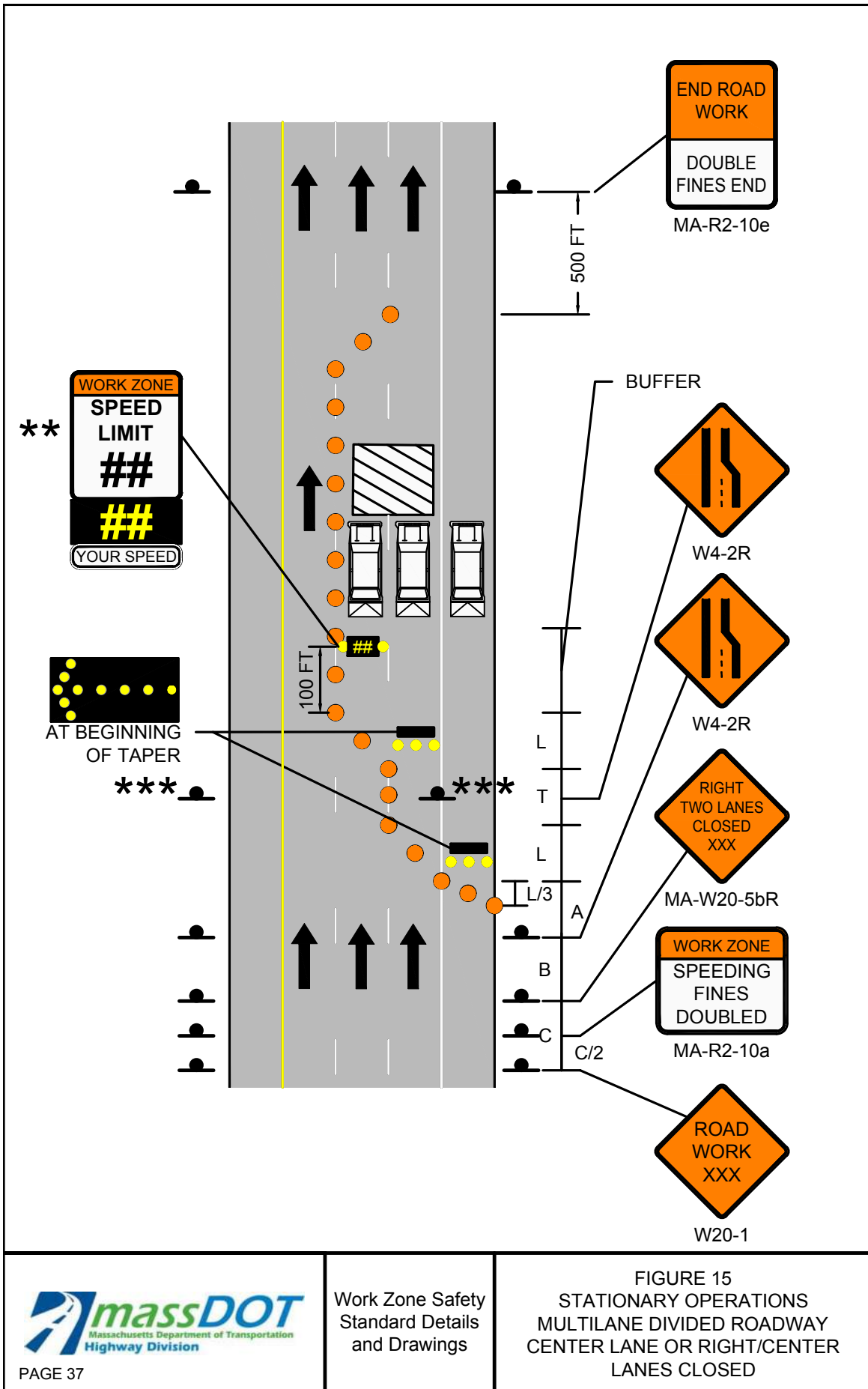


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
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STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
CENTER LANE OR LEFT/CENTER LANES  
CLOSED

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)					
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	TANGENT LENGTH BETWEEN TAPERS T (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	640	305	20	110
45-55	220	660	1320	495	40	100
60-65	260	780	1560	645	40	115

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

#### NOTES

1. MA-R2-10a LOCATED AT C/2.
2. \*\*\*OPTIONAL AT THE ENGINEER'S DISCRETION.
3. \*\*\*THIS SET OF SIGNS SHALL BE LOCATED AT T/2.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

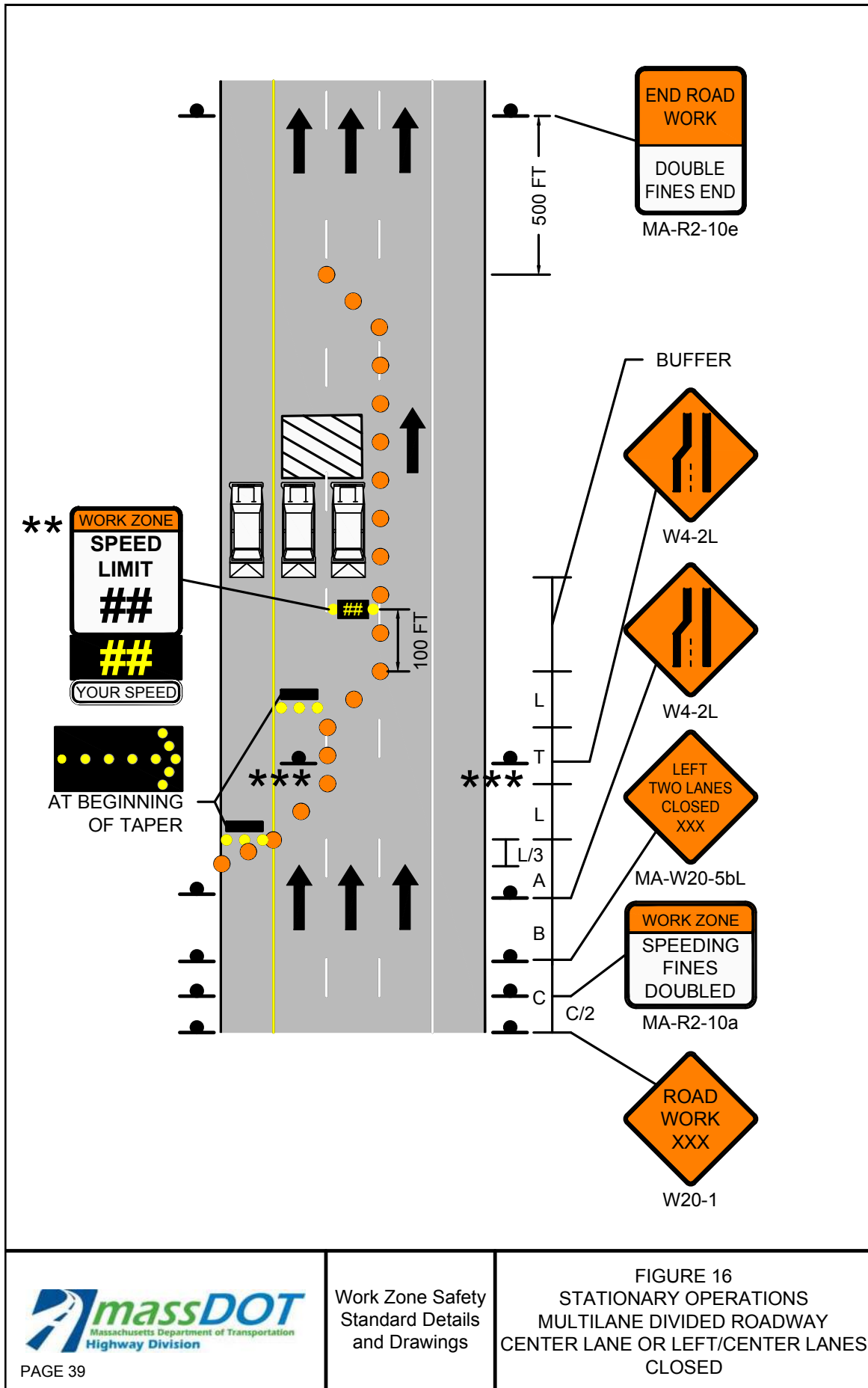


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
Standard Details  
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STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
RIGHT SIDE OF OFF RAMP CLOSED

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	160	305	20	45
45-55	500 / 1000 / 1000	330	495	40	35

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

#### NOTES

1. MA-R2-10a LOCATED AT C/2.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

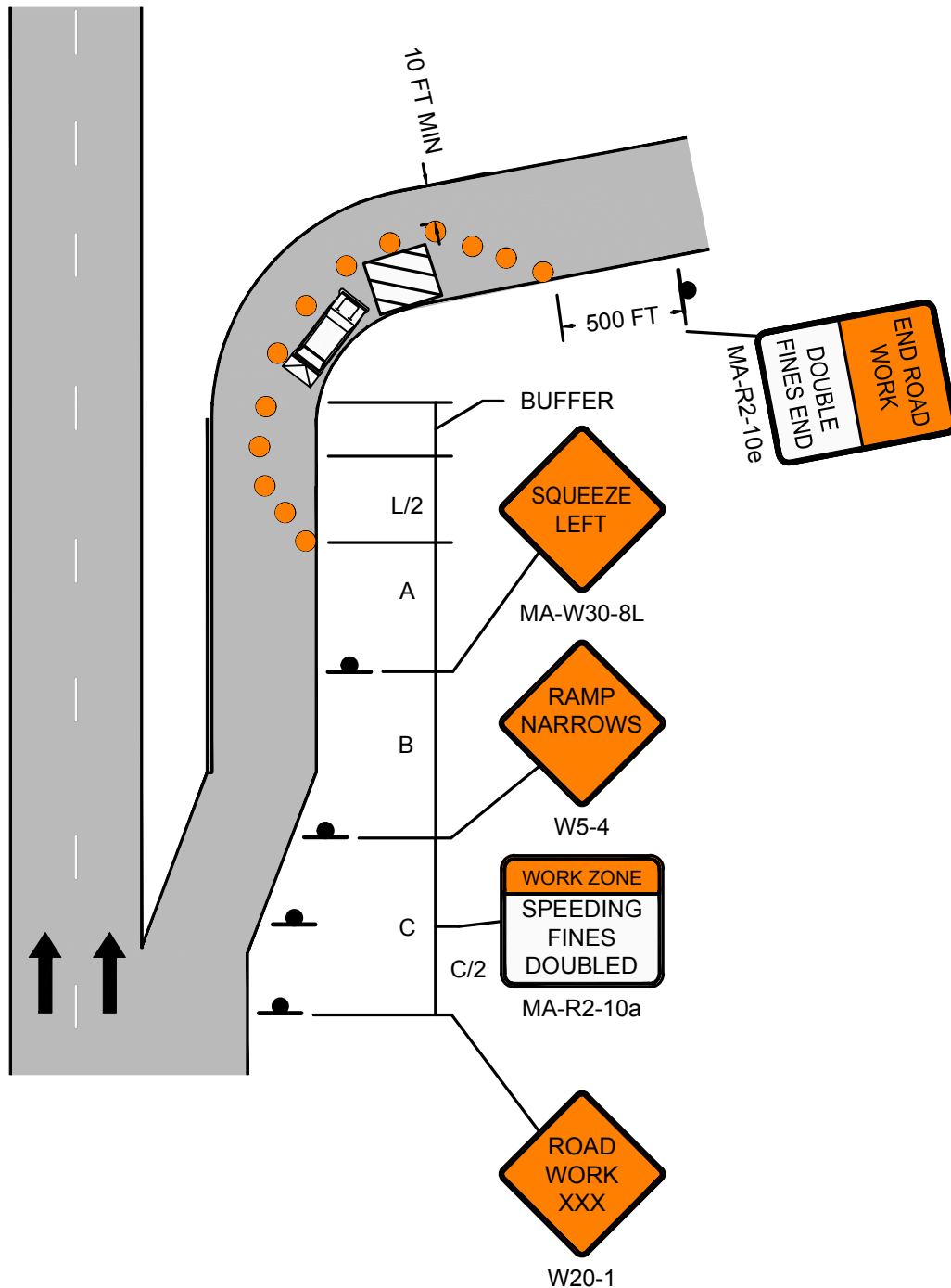


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
Standard Details  
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STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
LEFT SIDE OF OFF RAMP CLOSED

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	500 / 500 / 500	160	305	20	45
45-55	500 / 1000 / 1000	330	495	40	35

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

#### NOTES

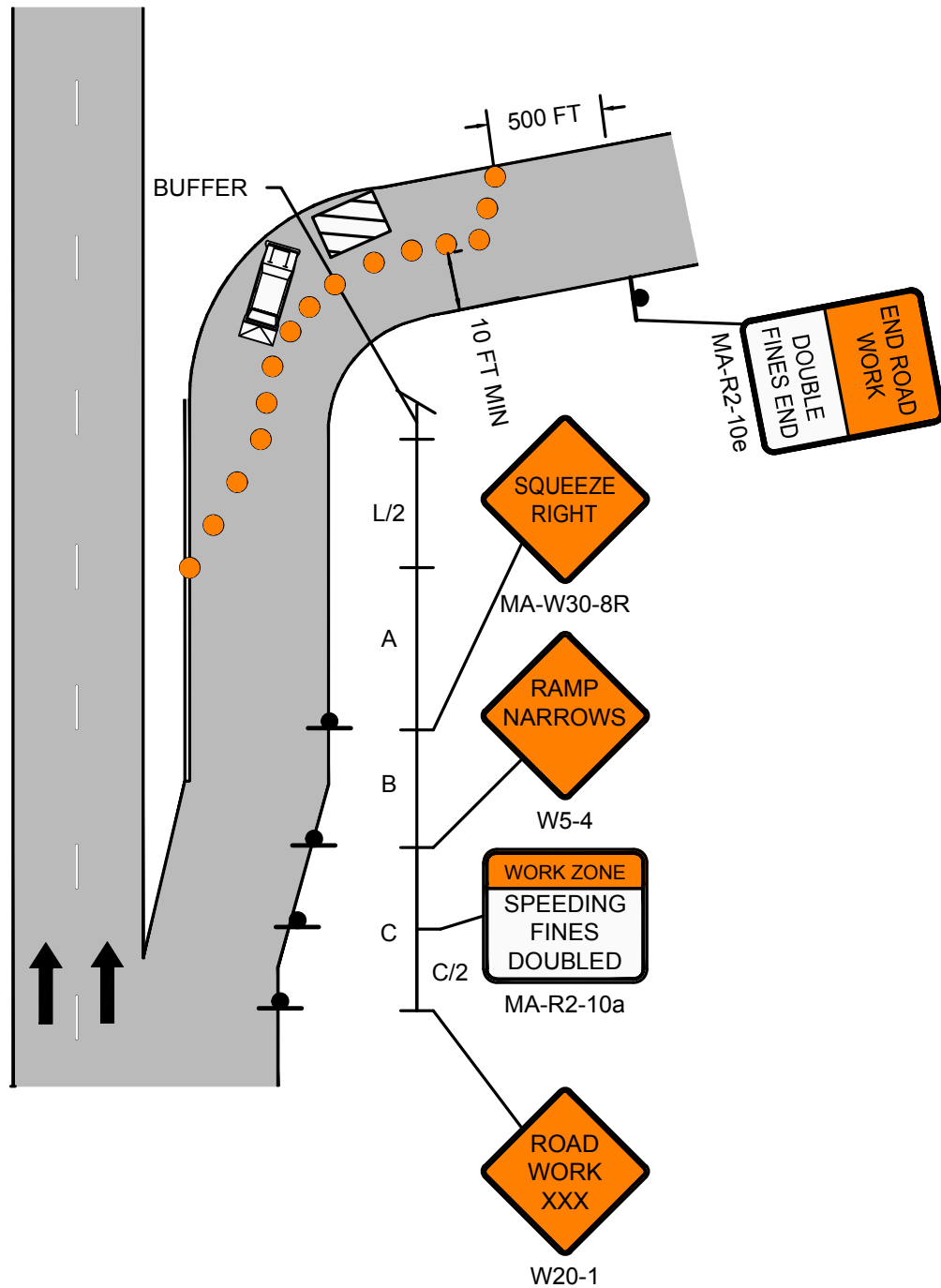
1. MA-R2-10a LOCATED AT C/2.

#### LEGEND

	WORK ZONE
	CHANNELIZATION DEVICE
	FLASHING ARROW BOARD
	PORTABLE CHANGEABLE MESSAGE SIGN
	TRUCK MOUNTED ATTENUATOR
	RADAR SPEED FEEDBACK BOARD
	POLICE DETAIL OR UNIFORMED FLAGGER
	TEMPORARY PORTABLE RUMBLE STRIP
	TYPE III BARRICADE

NOT TO SCALE







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Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
ROADWORK BEYOND ON RAMP

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)				
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	305	20	175
45-55	220	660	495	40	135
60-65	260	780	645	40	155

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

#### NOTES

1. MA-R2-10a LOCATED AT C/2.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

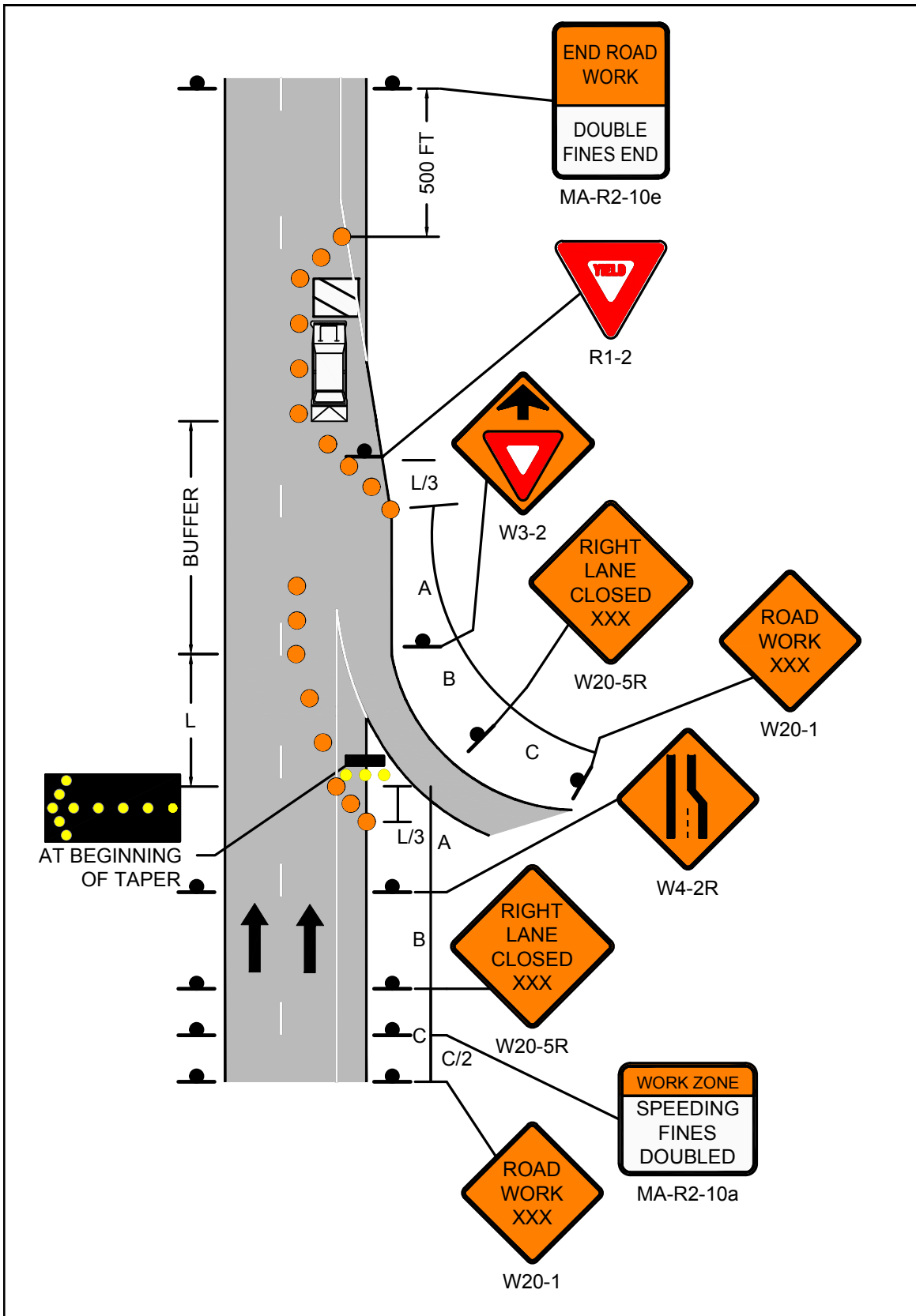


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
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STATIONARY OPERATIONS  
MULTILANE DIVIDED ROADWAY  
ROADWORK BEYOND OFF RAMP

POSTED SPEED LIMIT (MPH)	CHANNELIZATION DEVICES (DRUMS OR CONES)					
	SHOULDER TAPER LENGTH (L/3) (FT)	TRAVEL LANE CLOSURE LENGTH (L) (FT)	TRAVEL LANE SHIFT LENGTH (L/2) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	110	320	160	305	20	70
45-55	220	660	330	495	40	55
60-65	260	780	390	645	40	65

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)
25-40	500 / 500 / 500
45-55	500 / 1000 / 1000
60-65	1000 / 1600 / 2600

#### NOTES

1. MA-R2-10a LOCATED AT C/2.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

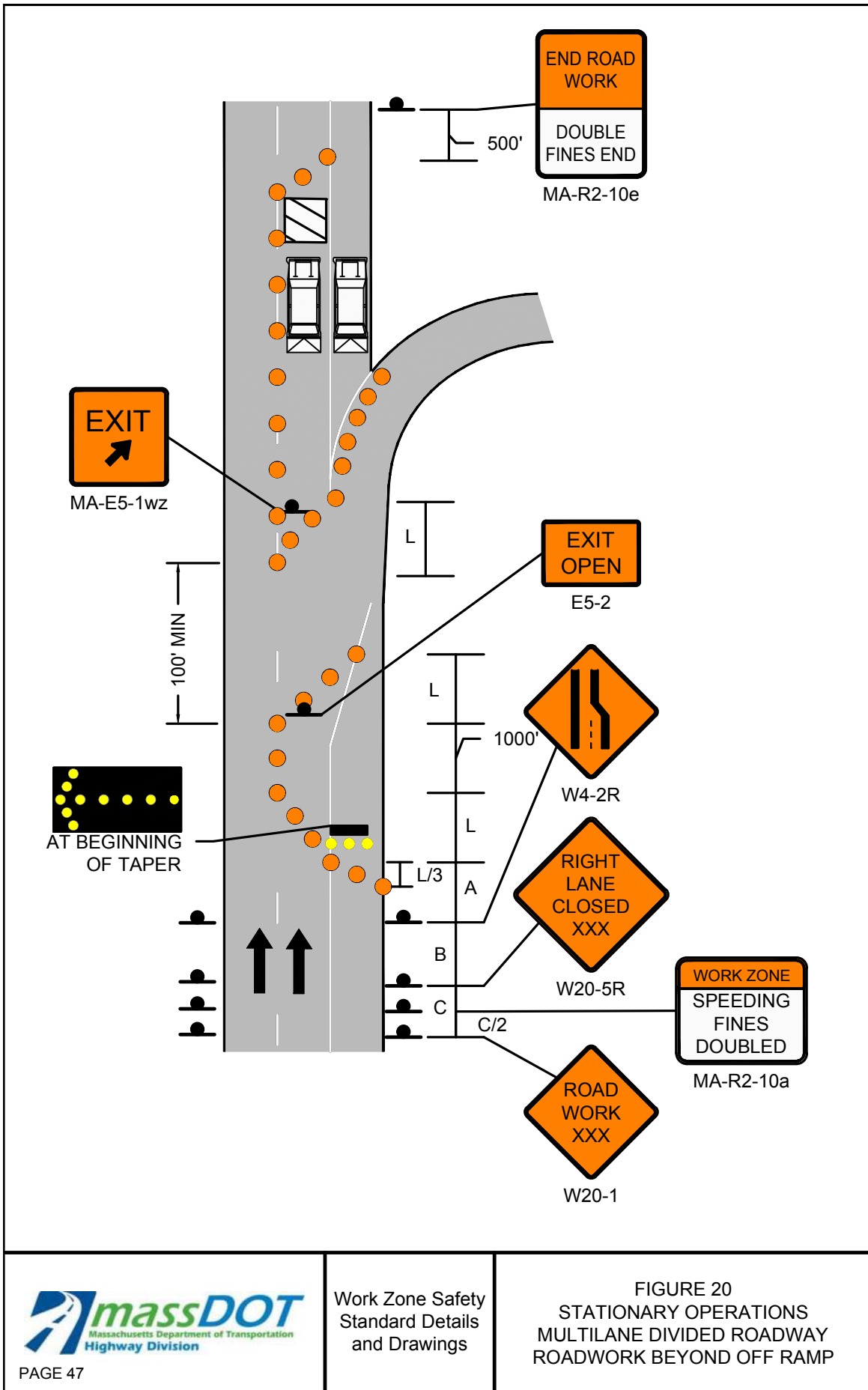


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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MULTILANE DIVIDED ROADWAY  
TYPICAL RAMP CLOSURE

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		SHOULDER TAPER LENGTH (L/3) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES
25-40	500 / 500 / 500	110	305	20	45
45-55	500 / 1000 / 1000	220	495	40	30
60-65	1000 / 1600 / 2600	260	645	40	35

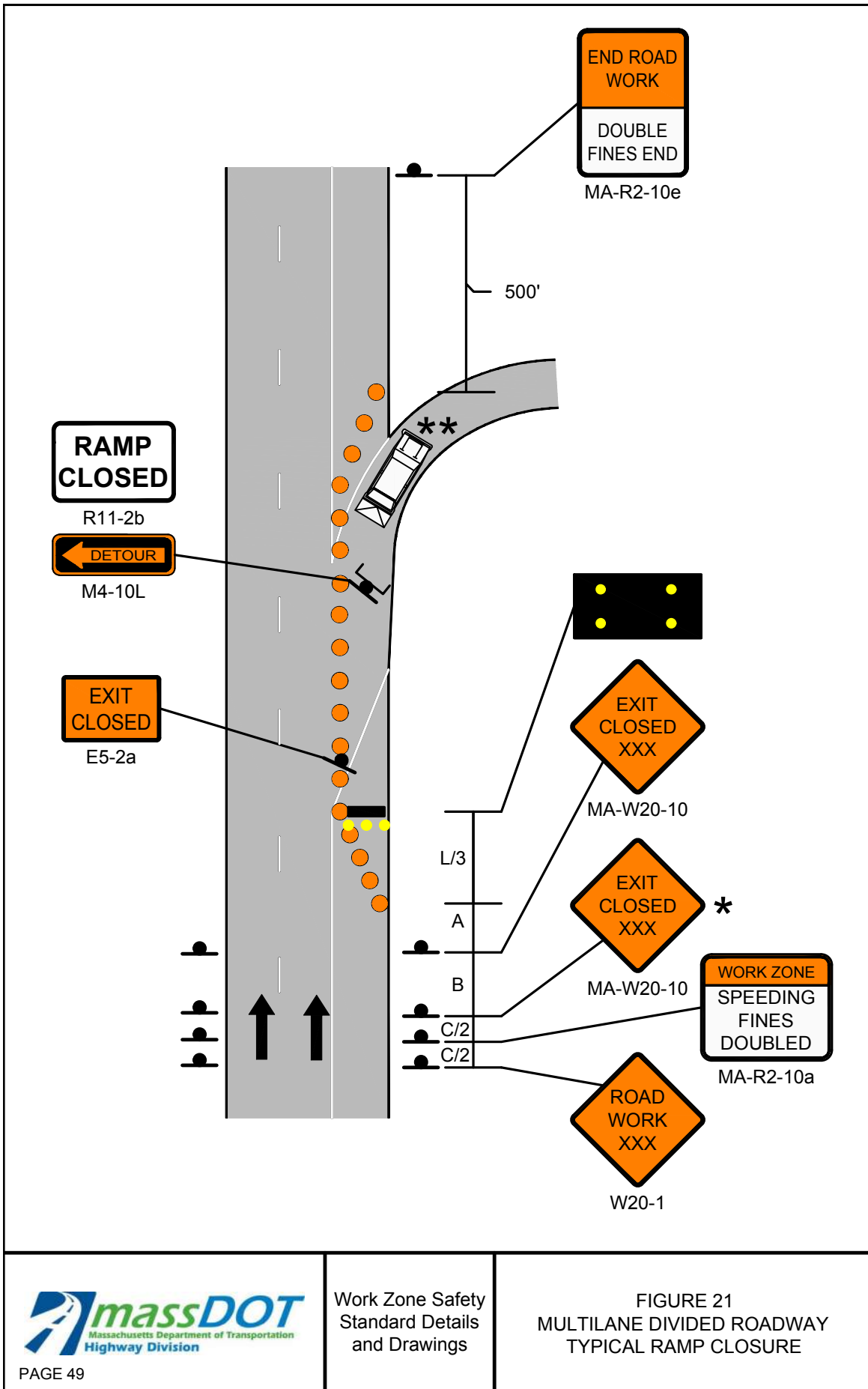
#### NOTES

1. MA-R2-10a LOCATED AT C/2.
2. \* NOT REQUIRED IF RIGHT LANE IS CLOSED IN ADVANCE OF EXIT.
3. \*\* OPTIONAL AT ENGINEER'S DISCRETION.

#### LEGEND

	WORK ZONE
	CHANNELIZATION DEVICE
	FLASHING ARROW BOARD
	PORTABLE CHANGEABLE MESSAGE SIGN
	TRUCK MOUNTED ATTENUATOR
	RADAR SPEED FEEDBACK BOARD
	POLICE DETAIL OR UNIFORMED FLAGGER
	TEMPORARY PORTABLE RUMBLE STRIP
	TYPE III BARRICADE

NOT TO SCALE





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MULTILANE DIVIDED ROADWAY  
TYPICAL CLOVERLEAF RAMP CLOSURE

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		SHOULDER TAPER LENGTH (L/3) (FT)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES
25-40	500 / 500 / 500	110	305	20	45
45-55	500 / 1000 / 1000	220	495	40	30
60-65	1000 / 1600 / 2600	260	645	40	35

#### NOTES

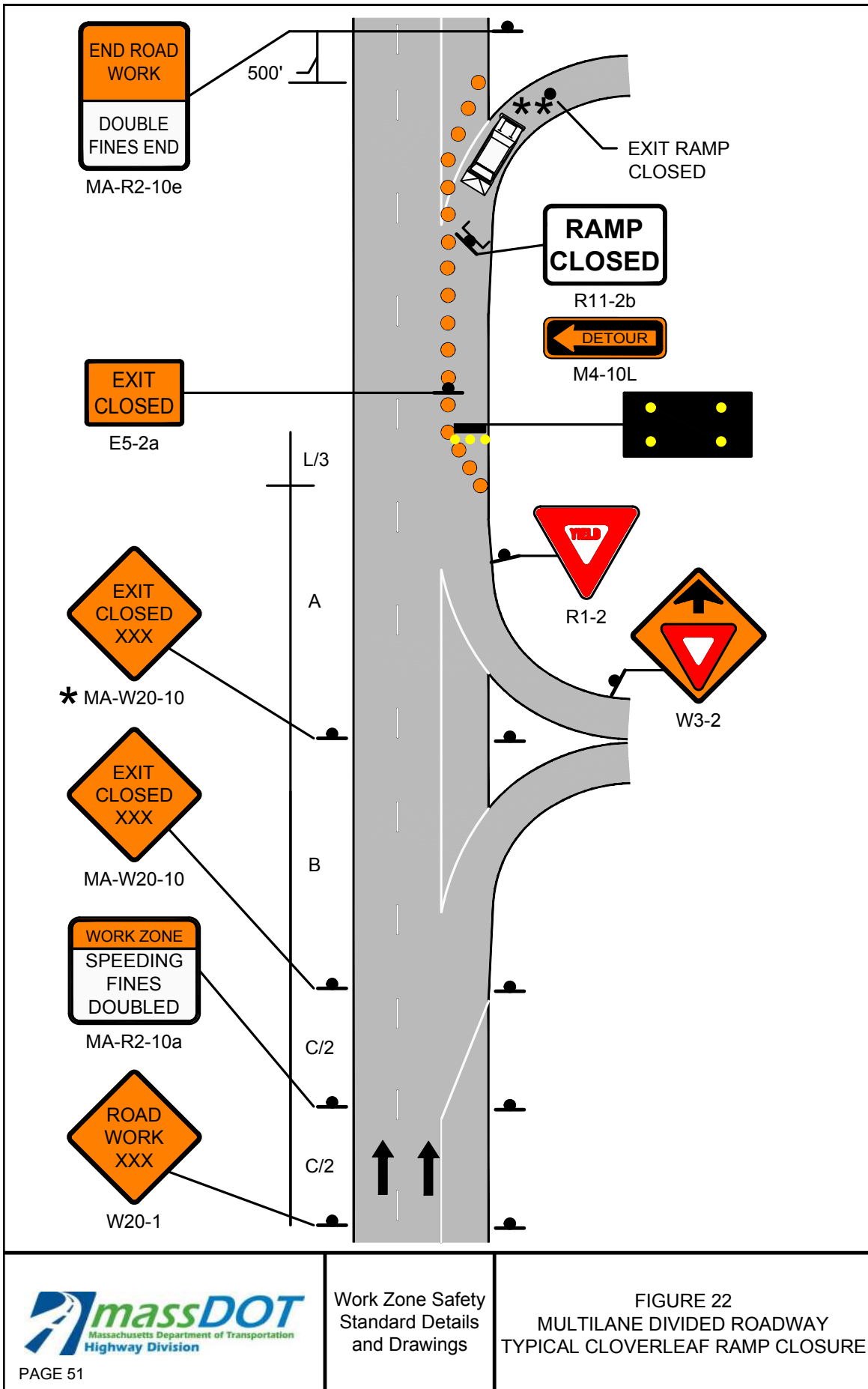
1. MA-R2-10a LOCATED AT C/2.
2. \* NOT REQUIRED IF RIGHT LANE IS CLOSED IN ADVANCE OF EXIT.
3. \*\* OPTIONAL AT ENGINEER'S DISCRETION.

#### LEGEND

	WORK ZONE
	CHANNELIZATION DEVICE
	FLASHING ARROW BOARD
	PORTABLE CHANGEABLE MESSAGE SIGN
	TRUCK MOUNTED ATTENUATOR
	RADAR SPEED FEEDBACK BOARD
	POLICE DETAIL OR UNIFORMED FLAGGER
	TEMPORARY PORTABLE RUMBLE STRIP
	TYPE III BARRICADE

NOT TO SCALE







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MULTILANE DIVIDED ROADWAY  
TYPICAL RAMP CLOSURE  
ADVANCE SIGNING

#### NOTES

1. IF THE CLOSED RAMP IS LOCATED DOWNSTREAM FROM THE PROPOSED DETOUR ROUTE/RAMP, A PCMS SHALL BE POSITIONED AT A SUFFICIENT DISTANCE IN ADVANCE OF THE DETOUR ROUTE/RAMP AND SHOULD STATE WHICH RAMP IS CLOSED AND WHICH SHALL BE USED FOR THE DETOUR.
2. IF THE CLOSED RAMP IS LOCATED UPSTREAM FROM THE PROPOSED DETOUR ROUTE/RAMP, A PCMS SHALL BE POSITIONED PRIOR TO THE CLOSED RAMP AND SHOULD STATE WHICH RAMP IS CLOSED AND WHICH SHALL BE USED FOR THE DETOUR.
3. A SUFFICIENT NUMBER OF DETOUR SIGNS (M4-9 SERIES) SHOULD BE DEPLOYED TO PROPERLY DIRECT DETOURED TRAFFIC. SIGN SPACING SHALL BE AT THE DIRECTION OF THE ENGINEER.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

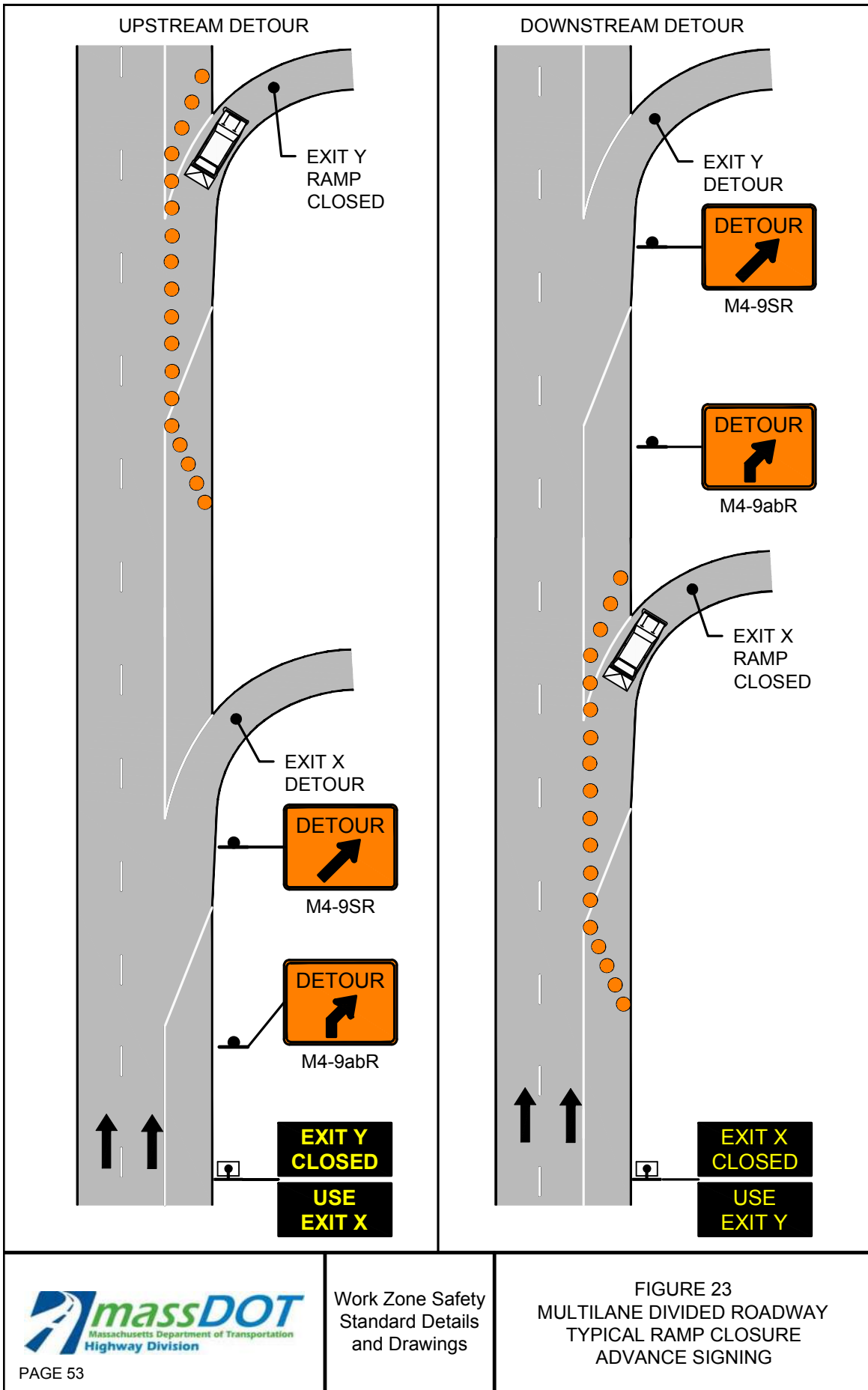


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





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Work Zone Safety  
Standard Details  
and DrawingsFIGURE 24-1  
MULTILANE DIVIDED ROADWAY  
PLACEMENT OF TEMPORARY  
PORTABLE RUMBLE STRIPS  
SHEET 1 OF 2


POSTED REGULATORY OR WORK ZONE SPEED	SEPARATION BETWEEN RUMBLE STRIPS
Above 55-mph	20-feet
36-mph to 55-mph	15-feet
35-mph and under	10-feet

POSTED SPEED LIMIT (MPH)	SPACING FOR ADVANCE WARNING SIGNS (FT) (A,B,C)	TANGENT LENGTH BETWEEN TAPERS (T) (FT)
25-40	500 / 500 / 500	640
45-55	500 / 1000 / 1000	1320
60-65	1000 / 1600 / 2600	1560

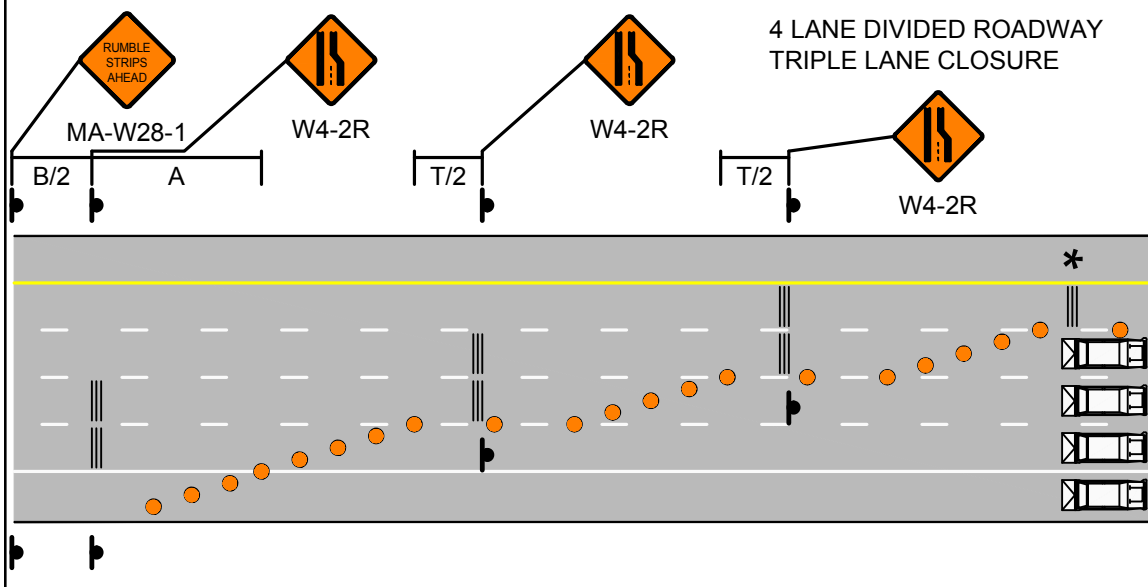
**NOTES**

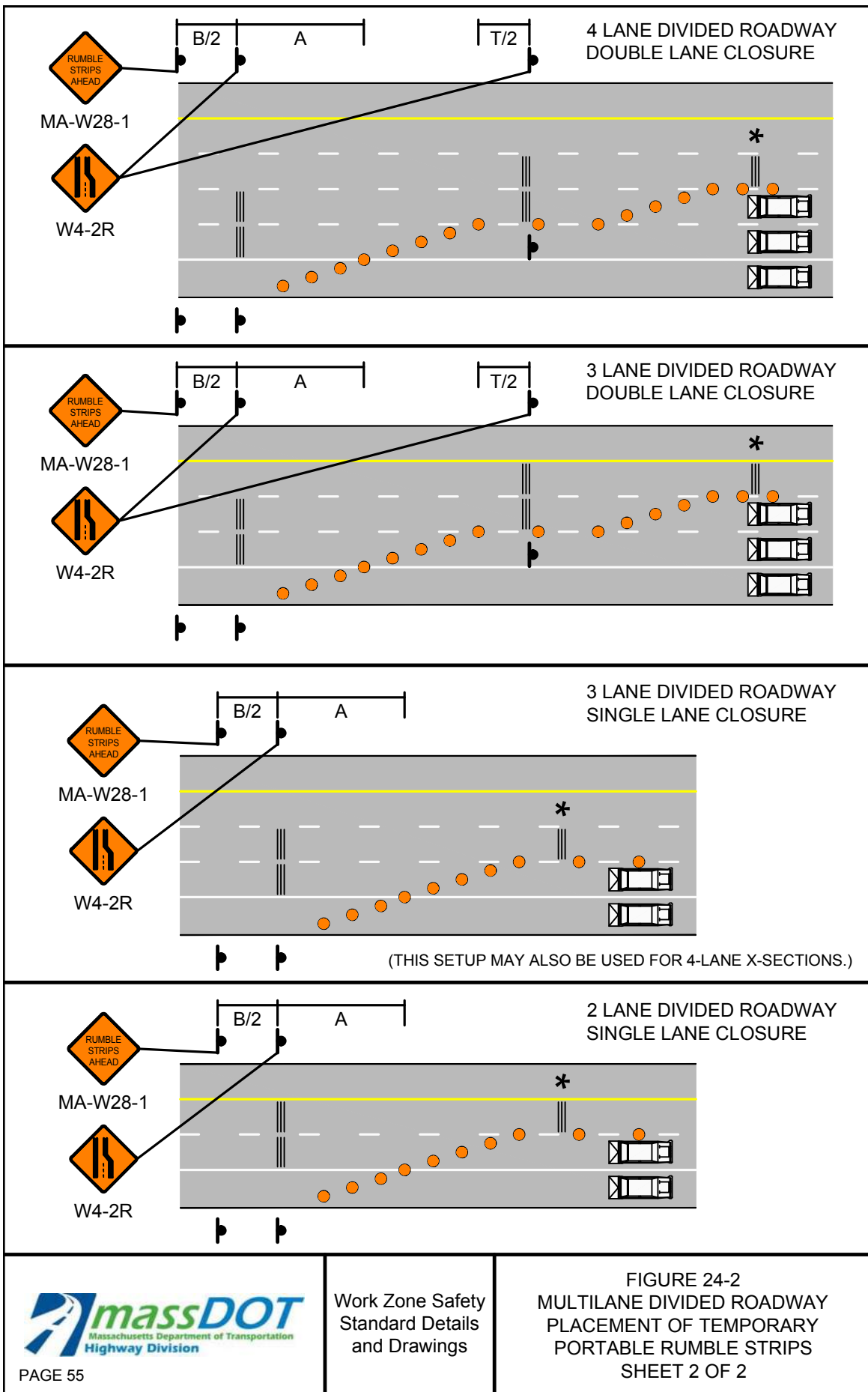
1. THE INTENTION OF THESE DETAILS IS ONLY TO DEPICT THE PLACEMENT OF TEMPORARY PORTABLE RUMBLE STRIPS (TPRS) IN RELATIONSHIP TO THE TAPER AND THE BUFFER OF A SINGLE- OR MULTI-LANE CLOSURE. THE DEPICTION OF THE NUMBER AND SPACING OF ALL OTHER TRAFFIC CONTROL DEVICES IS NOT TO SCALE. REFER TO OTHER DETAILS FOR LANE CLOSURES FOR THE PLACEMENT AND NUMBER OF ALL OTHER TRAFFIC CONTROL DEVICES.
2. THESE DETAILS ONLY DEPICT RIGHT LANE CLOSURES. LEFT LANE CLOSURES SHOULD UTILIZE A MIRROR IMAGE OF THESE SETUPS, STARTING WITH CLOSURE OF THE LEFTMOST LANE.
3. ★ THIS TPRS ARRAY IS OPTIONAL AT THE ENGINEER'S DISCRETION. IF USED, IT SHOULD BE PLACED ADJACENT TO THE BUFFER.
4. DETAILS SHOW THE MINIMUM NUMBER OF TPRS REQUIRED. ADDITIONAL MAY BE USED IF CONDITIONS WARRANT.


**LEGEND**

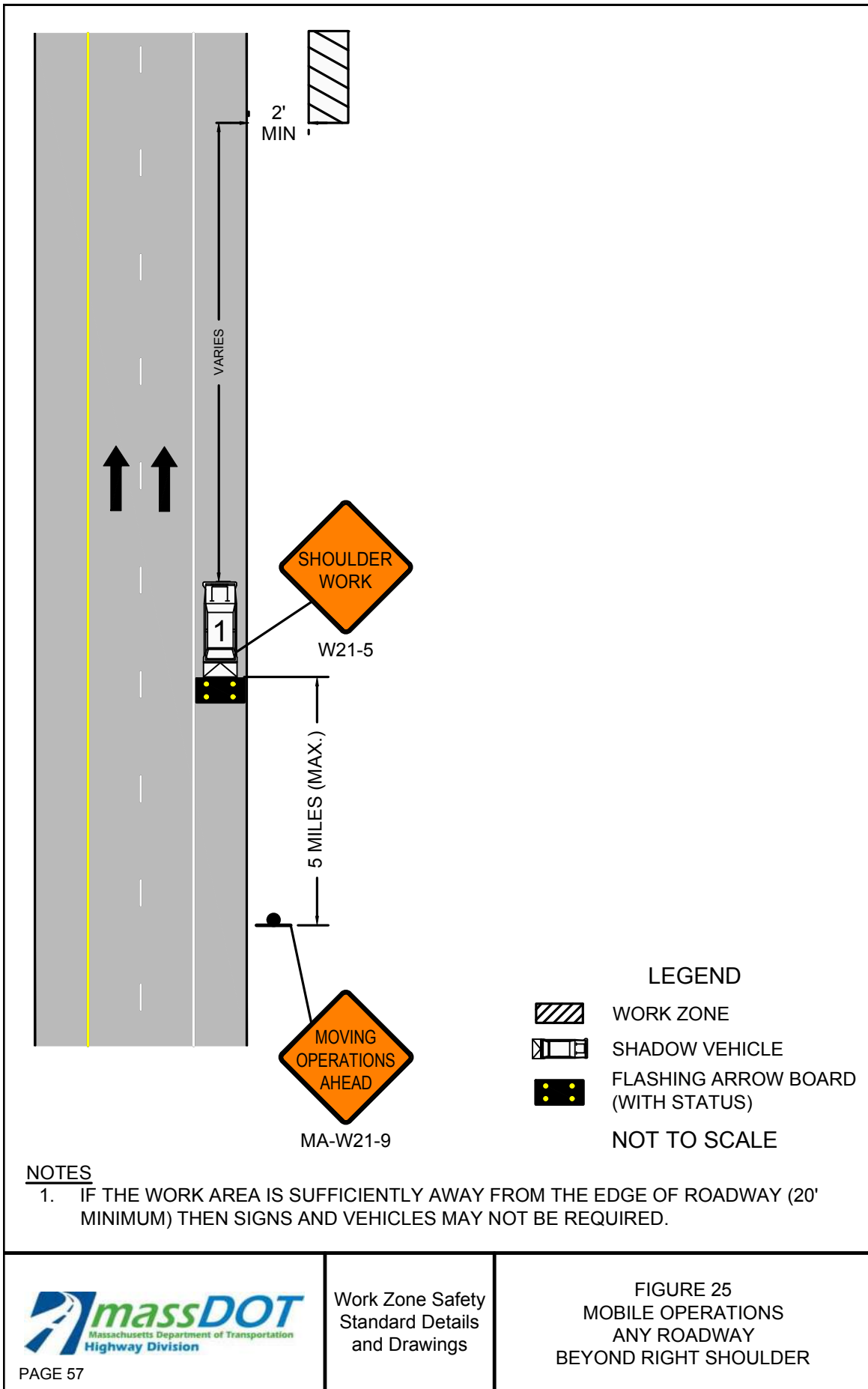
- CHANNELIZATION DEVICE
-  TRUCK MOUNTED ATTENUATOR
- ≡≡≡ TEMPORARY PORTABLE RUMBLE STRIP

NOT TO SCALE





 <p>PAGE 56</p>	<p>Work Zone Safety Standard Details and Drawings</p>	<p>NOTES FOR MOBILE OPERATIONS</p>
<p style="text-align: center;"><b>Notes for Mobile Operations</b></p> <ul style="list-style-type: none"> <li>• Unless otherwise stated, these notes shall apply to all Mobile Operation setups.</li> <li>• Additional, setup-specific notes may be found on individual sheets.</li> </ul> <ol style="list-style-type: none"> <li>1. The Supervisor shall travel the designated roadway prior to scheduling the work to ensure that sufficient and appropriate traffic control devices will be available. Special consideration shall be exercised to ensure that appropriate traffic controls be placed in areas that will have limited visibility of the work areas or any associated traffic queues.</li> <li>2. Vehicles used for these operations shall be made highly visible with appropriate equipment such as flashing lights, rotating beacons, flags, signs, flashing arrow boards, and/or portable changeable message signs. Any signs mounted to these vehicles shall not obscure the visibility of other devices.</li> <li>3. All vehicles shown may not be required based upon roadway conditions. However, when needed and practical, additional shadow vehicles and equipment to warn and protect motorists and workers should be used. Based upon roadway conditions, the addition of a police detail with cruiser may be used for additional protection or warning for the traveling public.</li> <li>4. The distance between the work and shadow vehicle(s) may vary according to the terrain and other factors. Shadow vehicles are used to warn traffic of the operations ahead. Whenever adequate sight distance exists, the shadow vehicle(s) should maintain the minimum appropriate distance and maintain the same speed to prevent non-work related vehicles from entering the work convoy. If this formation cannot be maintained then additional traffic control devices should be deployed in advance of any vertical or horizontal curves that may restrict the sight distance of an oncoming vehicle to either the work vehicle or associated traffic queue.</li> <li>5. All shadow vehicles shall be equipped with a truck or trailer mounted attenuator (TMA) and a flashing arrow board.</li> <li>6. Signs should be covered or turned from view when work is not in progress.</li> <li>7. Portable changeable message signs may be used in lieu of MA-W21-9 signs and any signs mounted directly to a shadow vehicle.</li> </ol>		

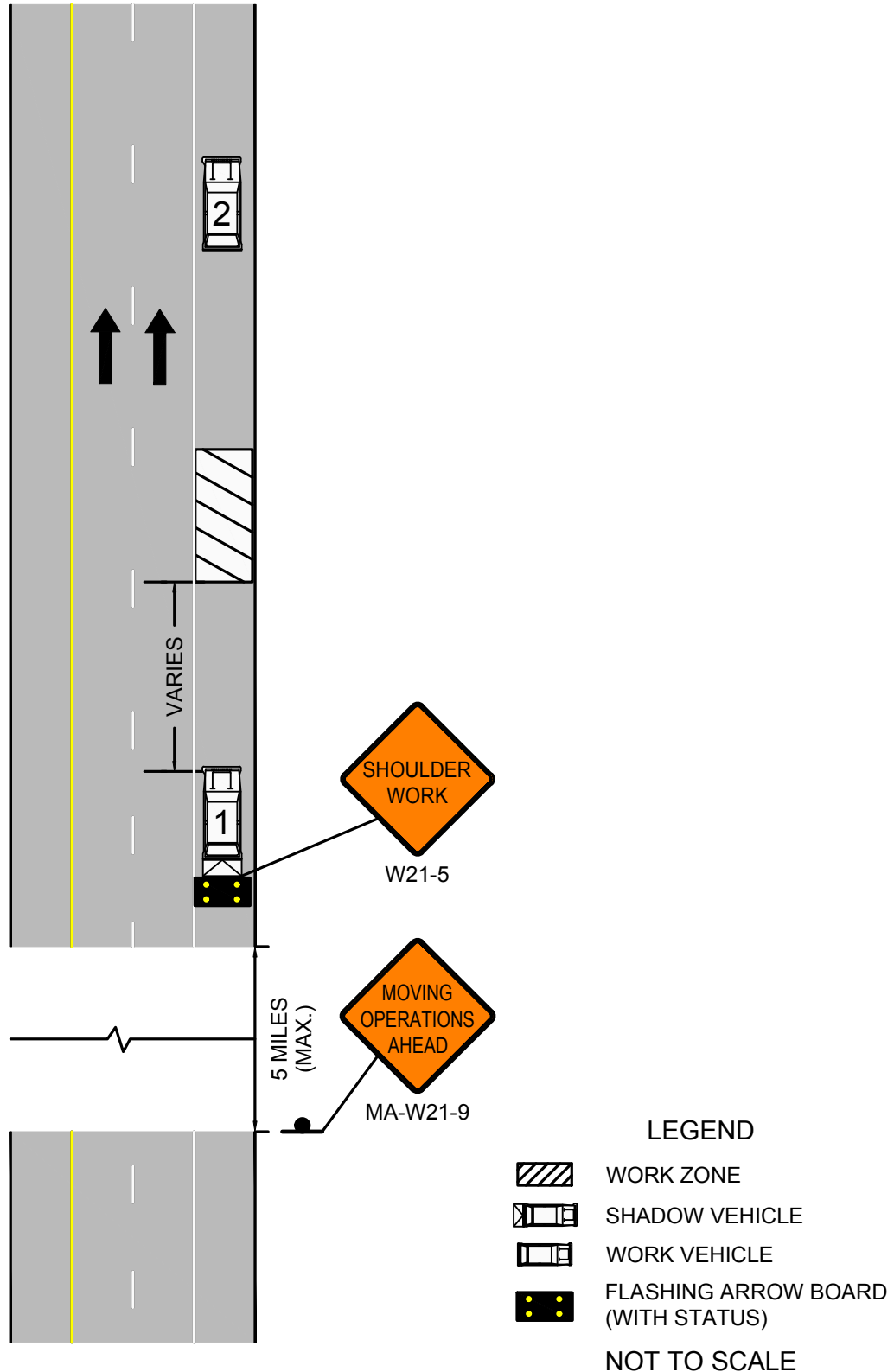




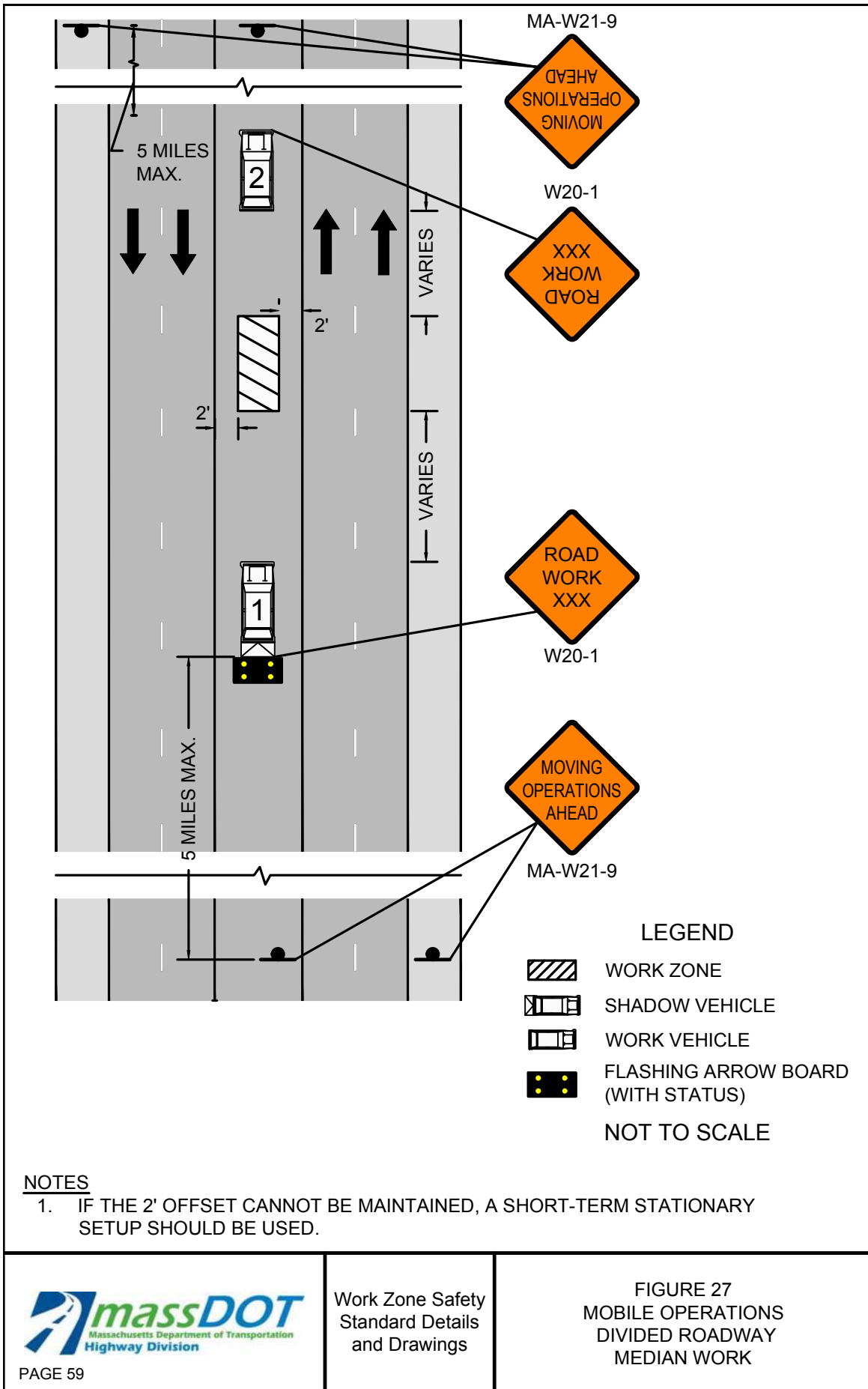
PAGE 58

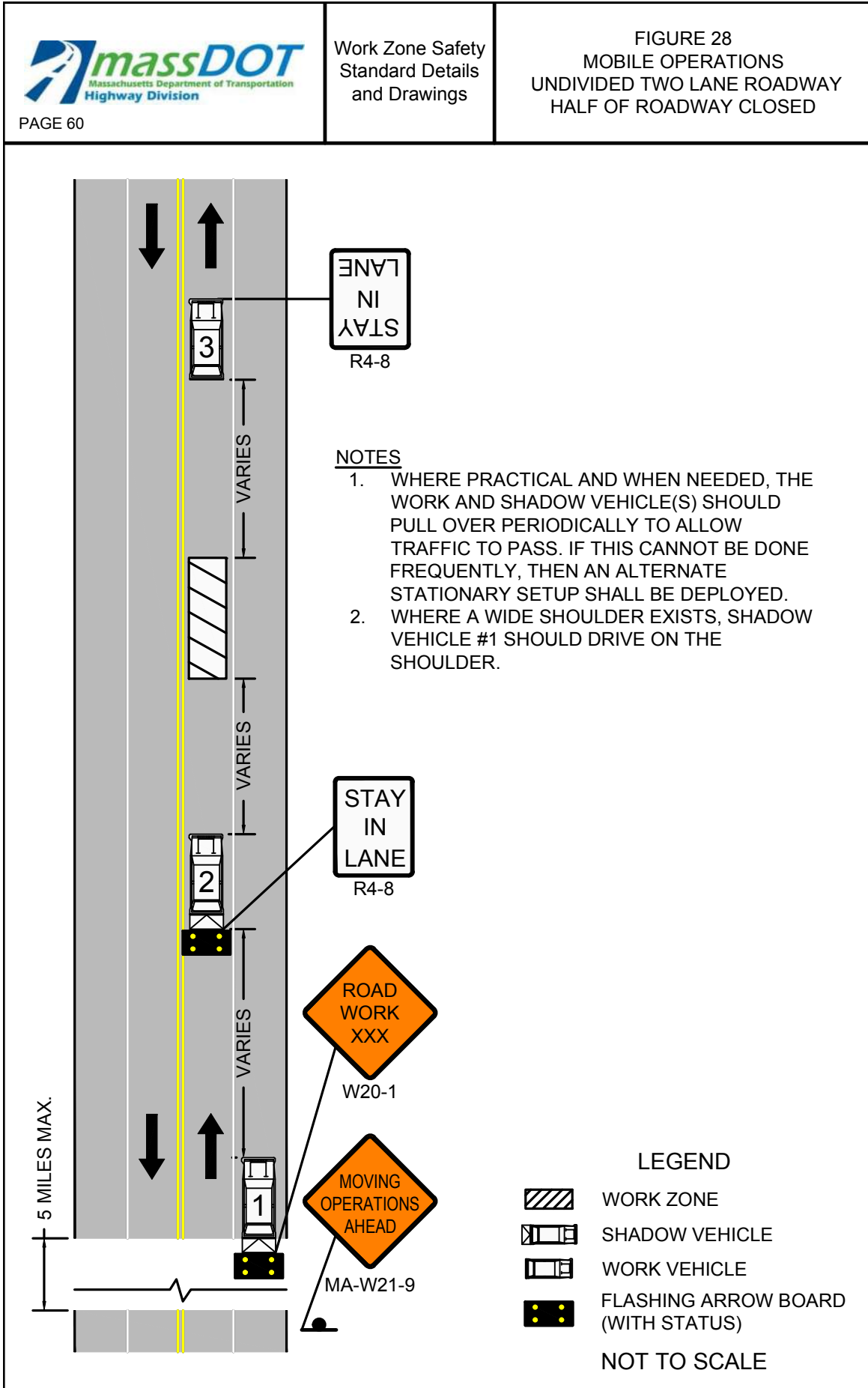
Work Zone Safety  
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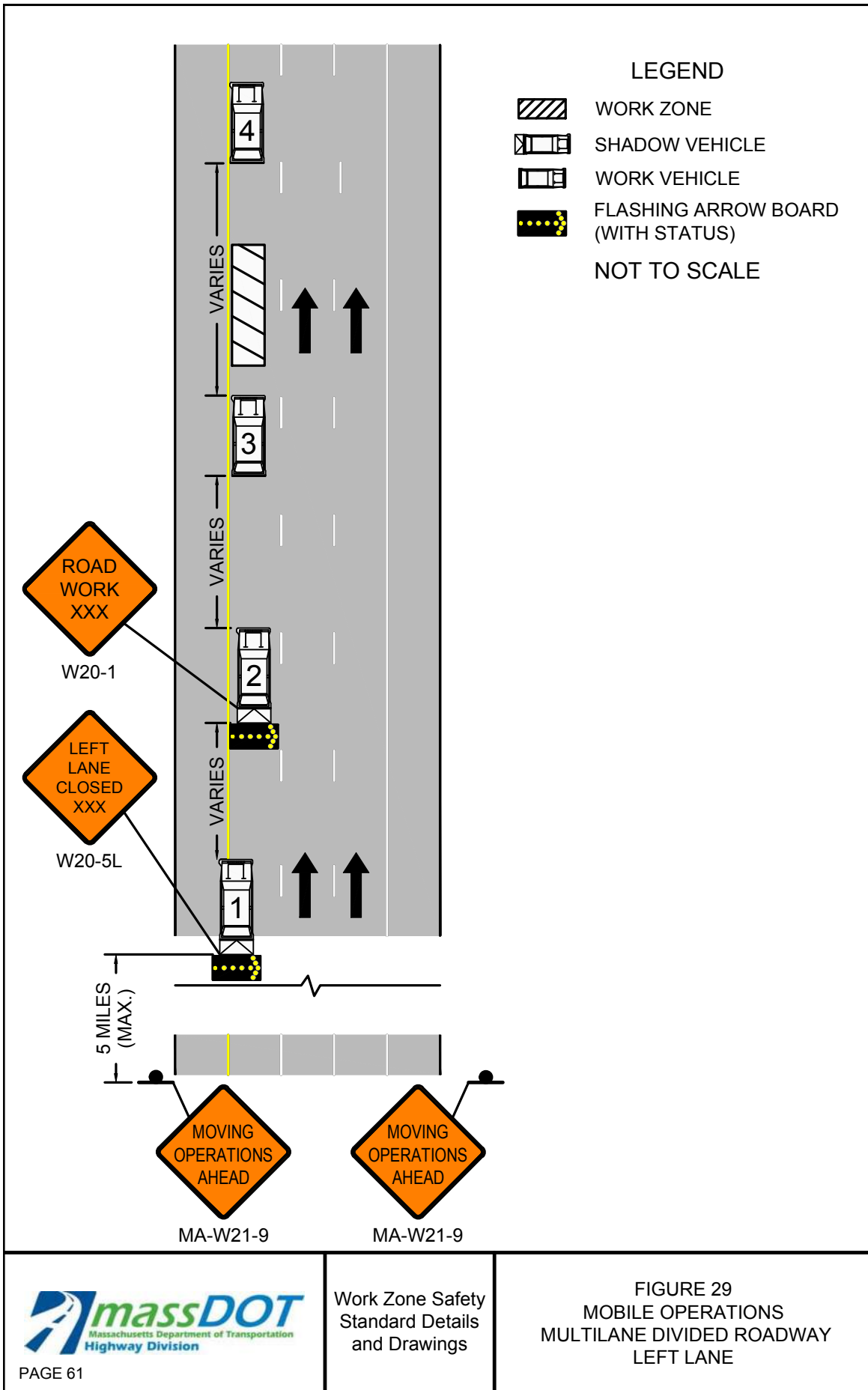
FIGURE 26  
MOBILE OPERATIONS  
ANY ROADWAY SHOULDER









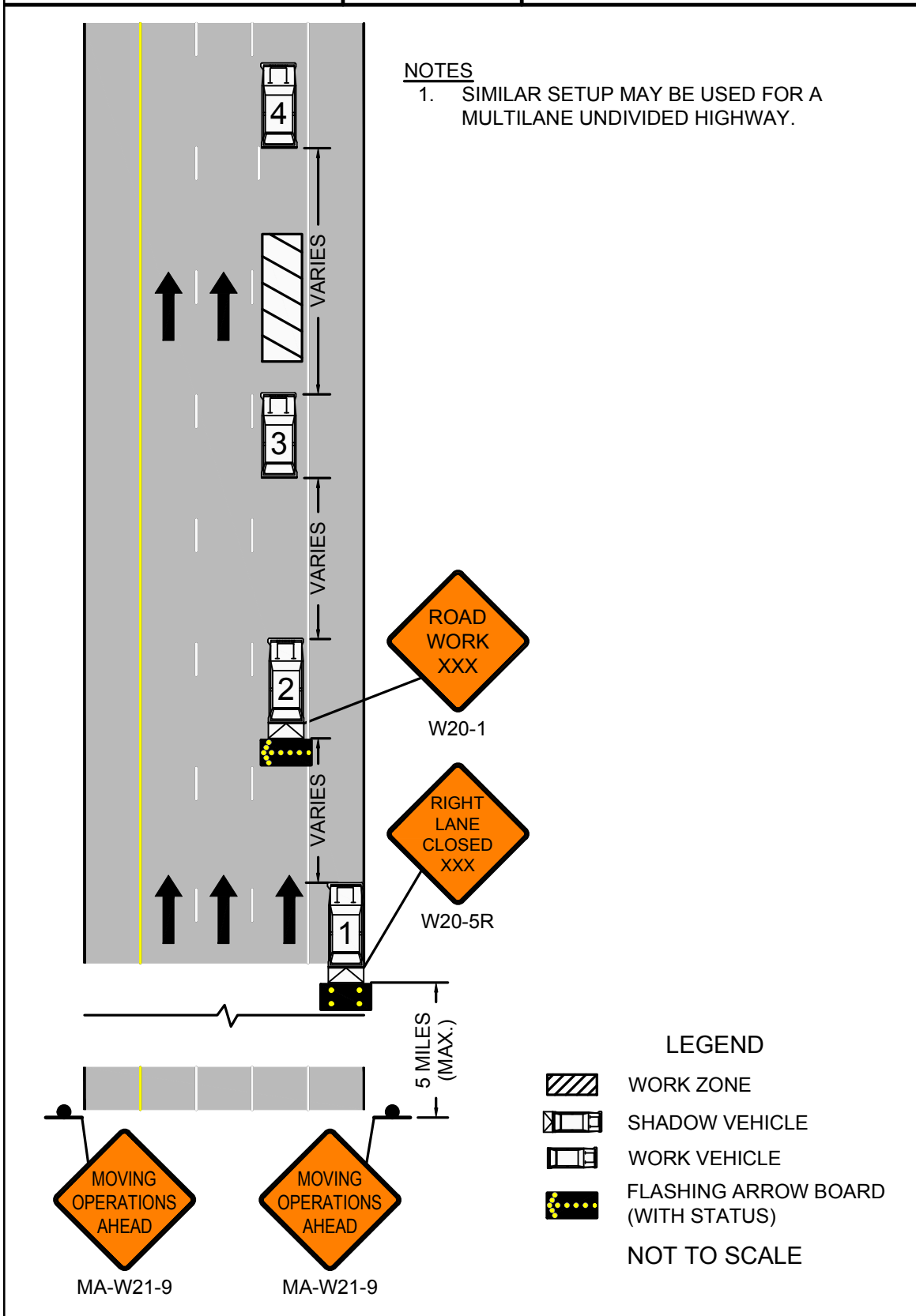


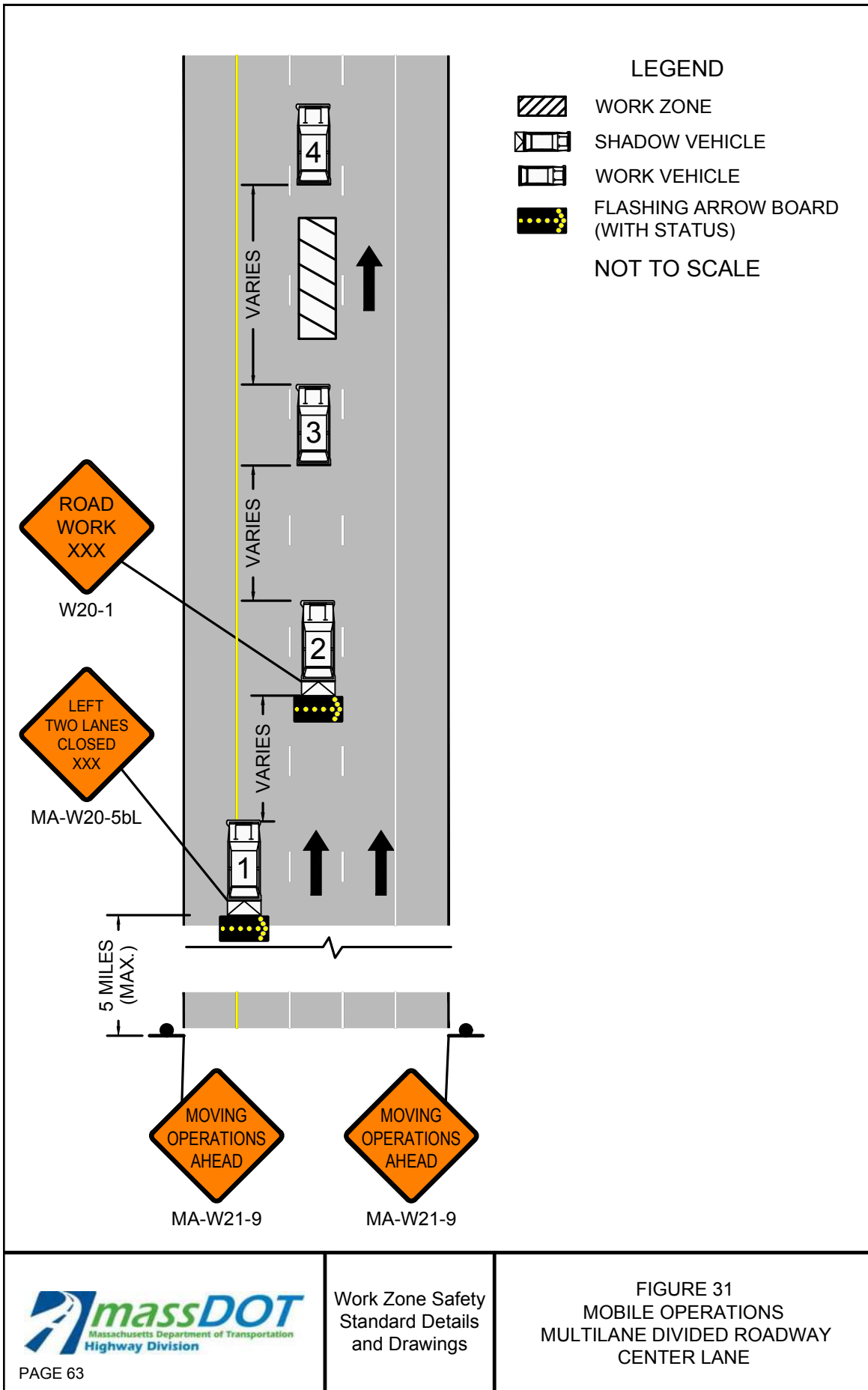


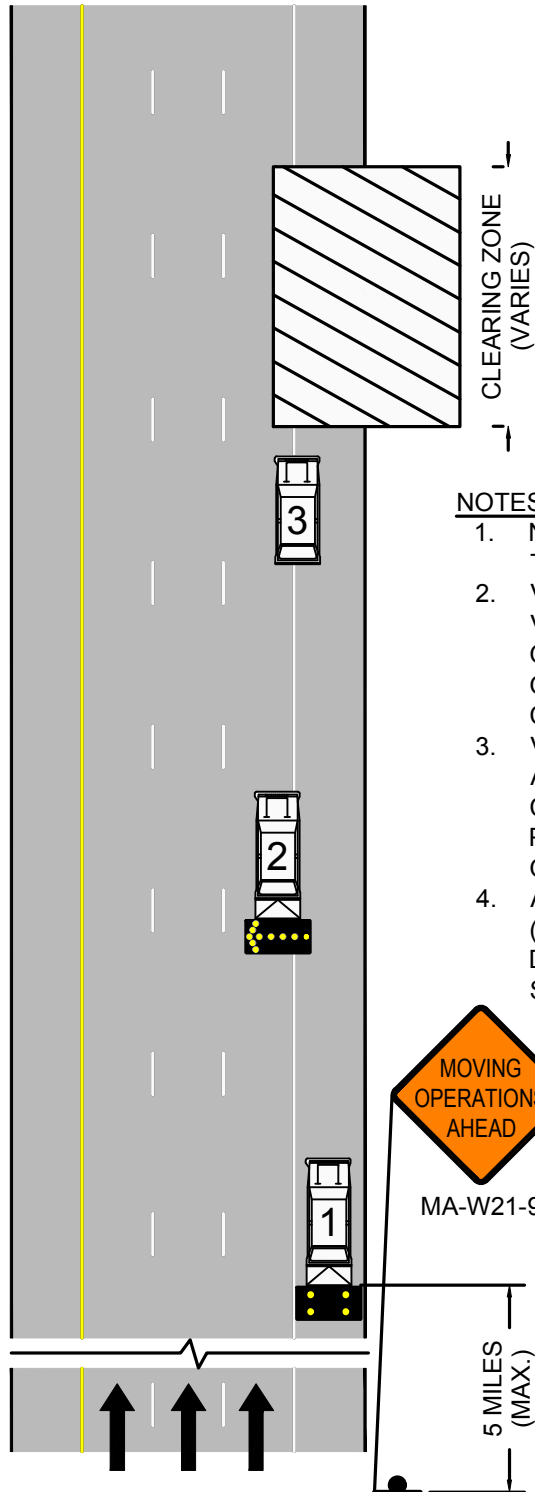
PAGE 62

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FIGURE 30  
MOBILE OPERATIONS  
MULTILANE DIVIDED ROADWAY  
RIGHT LANE











NOTES

1. NO OTHER NOTES ARE APPLICABLE TO THIS DETAIL.
2. VEHICLE #3 IS A SNOW/DEBRIS REMOVAL VEHICLE AND SHALL ALWAYS BE AWARE OF THE SURROUNDINGS. MORE THAN ONE VEHICLE MAY BE USED IN THE CLEARING ZONE.
3. VEHICLE #1 SHOULD BE EQUIPPED WITH A PCMS, A TMA, AND STAY IN VISUAL CONTACT WITH VEHICLE #3 WHILE PROVIDING AMPLE WARNING TO ONCOMING TRAFFIC.
4. A POLICE DETAIL WITH BLUE LIGHTS (OPTIONAL) SHALL REMAIN DOWNSTREAM OF VEHICLE #1 IN THE SHOULDER.

**LEGEND**

- |   |                                    |
|---|------------------------------------|
|  | WORK ZONE                          |
|  | SHADOW VEHICLE                     |
|  | WORK VEHICLE                       |
|  | FLASHING ARROW BOARD (WITH STATUS) |

NOT TO SCALE

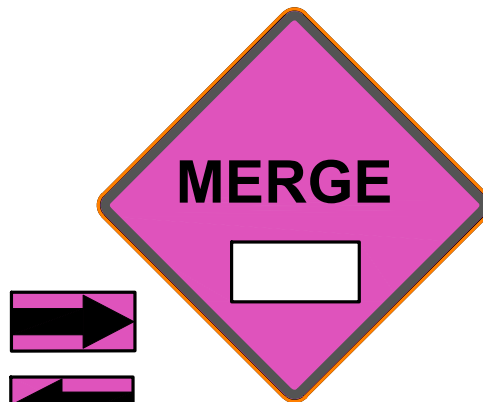
### Notes for Traffic Emergency or Incident Operations

- The goal is to increase awareness of during traffic emergencies or incidents.
- These signs are to be used to differentiate from the traditional construction work zone and an emergency or incident.
- Upon arrival MassDOT First Responders shall assess the magnitude of the scene to determine if the incident is likely to last an hour or more in duration which would trigger the requirement to use these signs.
- Place the "Emergency Ahead" sign on the same side of the road as the incident, if possible, for up to an hour. Emergency response signs should be put up for all incidents and emergencies as soon as possible.
- Place the emergency sign 500 to 1000 feet before the first channelization devices.
- As an incident evolves this sign would be used as a secondary sign with all other emergency controls put in place.
- Only use "MERGE" signs where applicable (Not on 2 lane roads).
- Use MERGE signs on Multi-lane Roads to move traffic away from the incident and keep them in a safe lane.
- Place the MERGE sign about 500 feet before the closure.
- If additional signs are available, they should be placed accordingly as a sign informing people coming in the other direction or on the opposite side of the roadway.
- Use 12 emergency cones spaced 40 to 80 feet apart to form a taper and protect the scene.
- Sequential flashing lights/flares may be used in lieu of or to supplement cones.
- During a major incident that will last for a long duration, the EMERGENCY AHEAD sign should be moved back before an intersecting road or ramp to alert travelers and give them an option of using an alternate route. (Be sure all other devices are in place before moving this sign).

### Standard Emergency Signs (36"x36" or 48"x48")



MA-W20-9



MA-W4-2aR/L





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FIGURE 33  
EMERGENCY RESPONSE  
ANY ROADWAY  
SHOULDER ENCROACHMENT

### LEGEND



EMERGENCY AREA

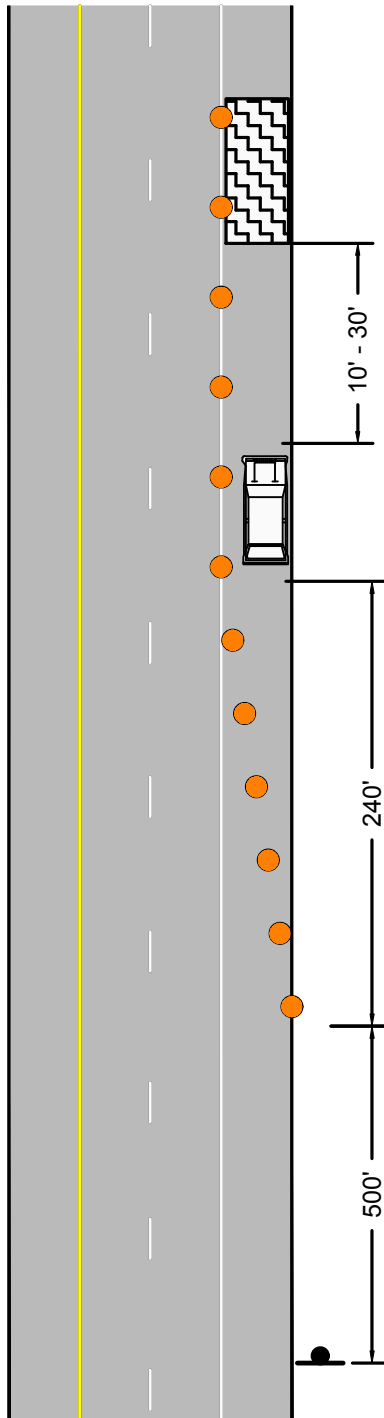


CHANNELIZATION DEVICE



EMERGENCY RESPONSE  
VEHICLE

NOT TO SCALE



### ORDER OF RESPONSE ACTIVITIES

1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. PULL VEHICLE OVER TO THE RIGHT EDGE OF TRAVEL LANE BEFORE STOPPING.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 4 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. TEND TO EMERGENCY/INCIDENT.

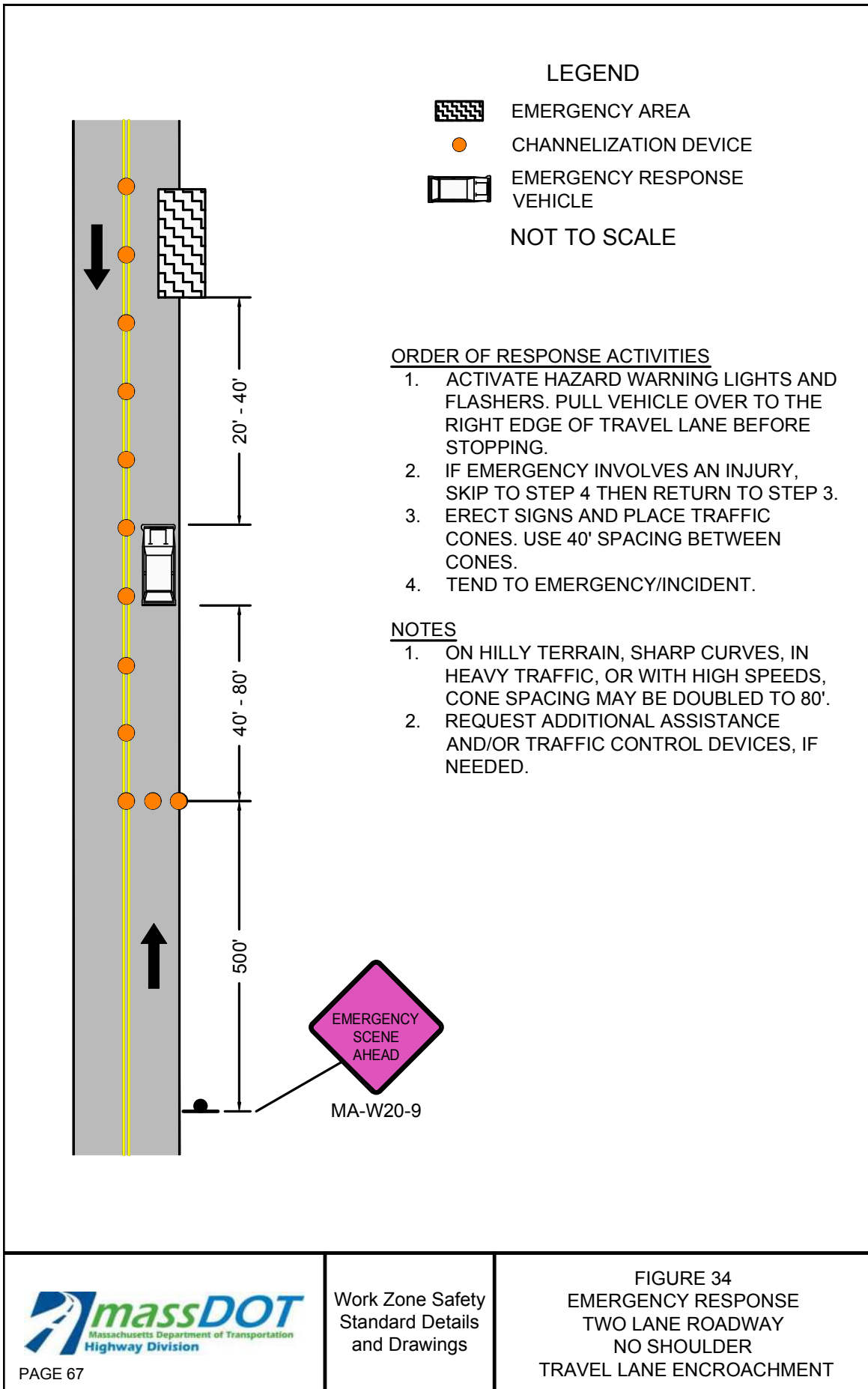
### NOTES

1. ON HILLY TERRAIN, SHARP CURVES, IN HEAVY TRAFFIC, OR WITH HIGH SPEEDS, CONE SPACING MAY BE DOUBLED TO 80'.
2. REQUEST ADDITIONAL ASSISTANCE AND/OR TRAFFIC CONTROL DEVICES, IF NEEDED.



MA-W20-9







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FIGURE 35  
EMERGENCY RESPONSE  
TWO LANE ROADWAY  
TRAVERSABLE SHOULDER  
SINGLE LANE ENCROACHMENT

### LEGEND



EMERGENCY AREA

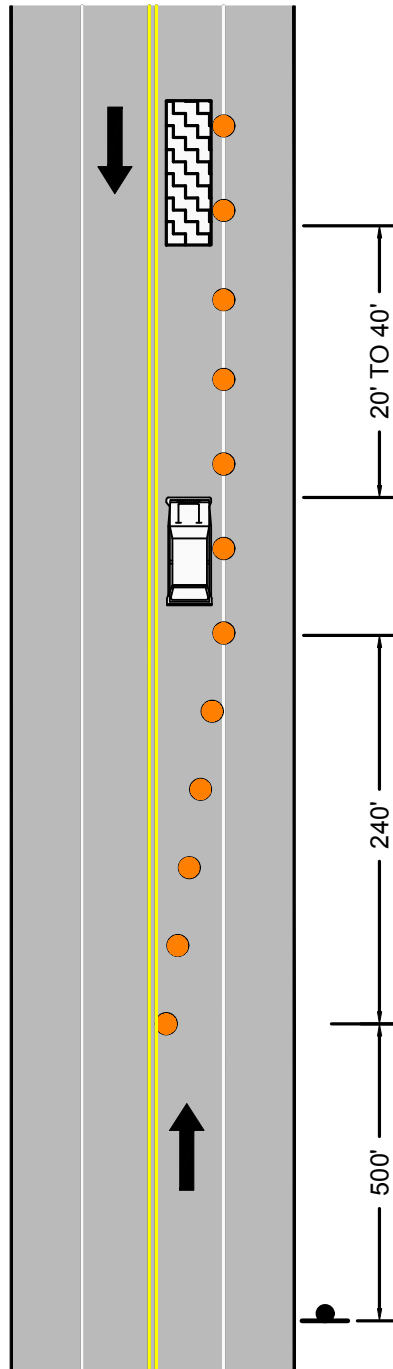


CHANNELIZATION DEVICE



EMERGENCY RESPONSE  
VEHICLE

NOT TO SCALE



### ORDER OF RESPONSE ACTIVITIES

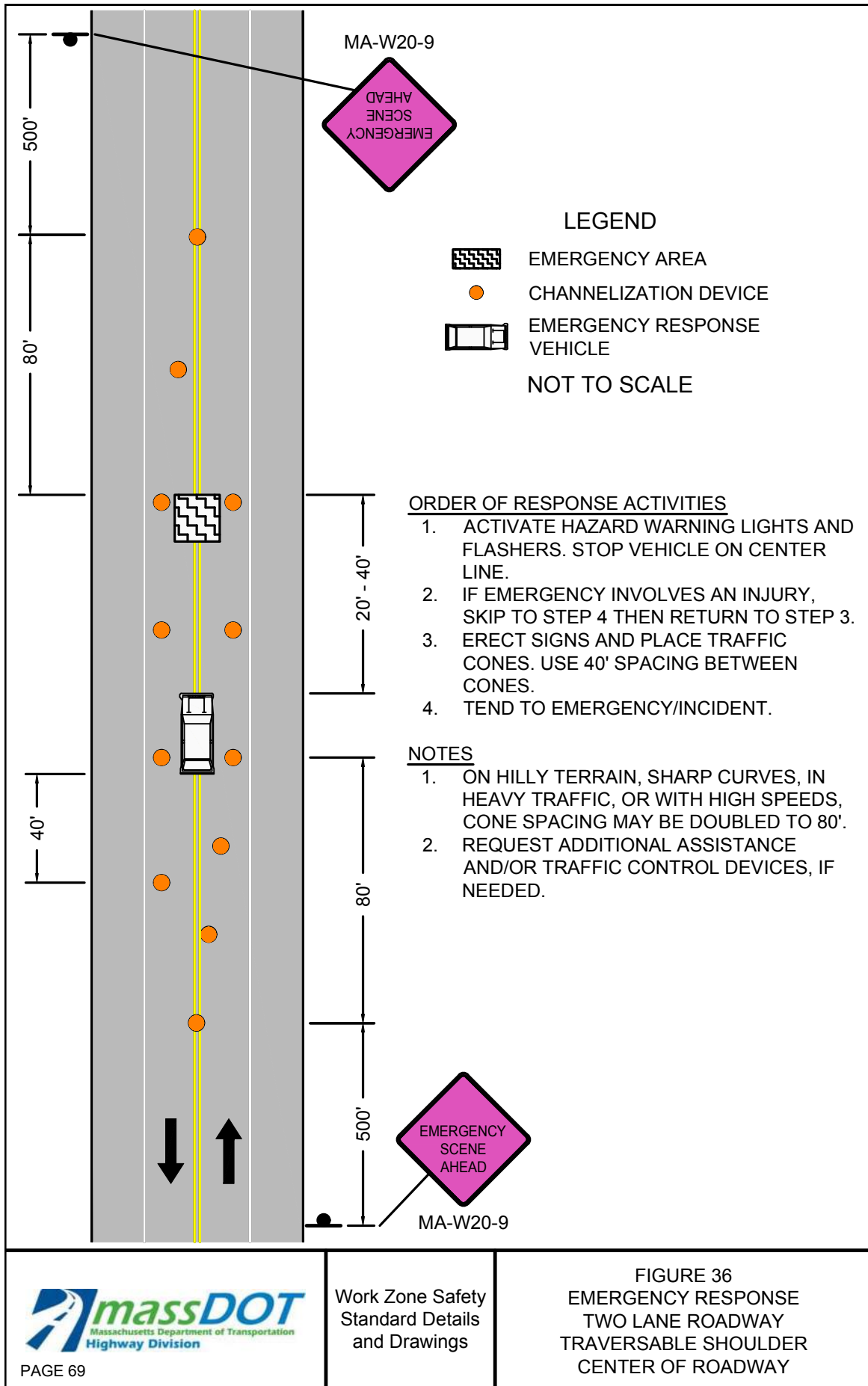
1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. PULL VEHICLE OVER TO THE LEFT EDGE OF TRAVEL LANE BEFORE STOPPING.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 4 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. TEND TO EMERGENCY/INCIDENT.

### NOTES

1. ON HILLY TERRAIN, SHARP CURVES, IN HEAVY TRAFFIC, OR WITH HIGH SPEEDS, CONE SPACING MAY BE DOUBLED TO 80'.
2. REQUEST ADDITIONAL ASSISTANCE AND/OR TRAFFIC CONTROL DEVICES, IF NEEDED.



MA-W20-9

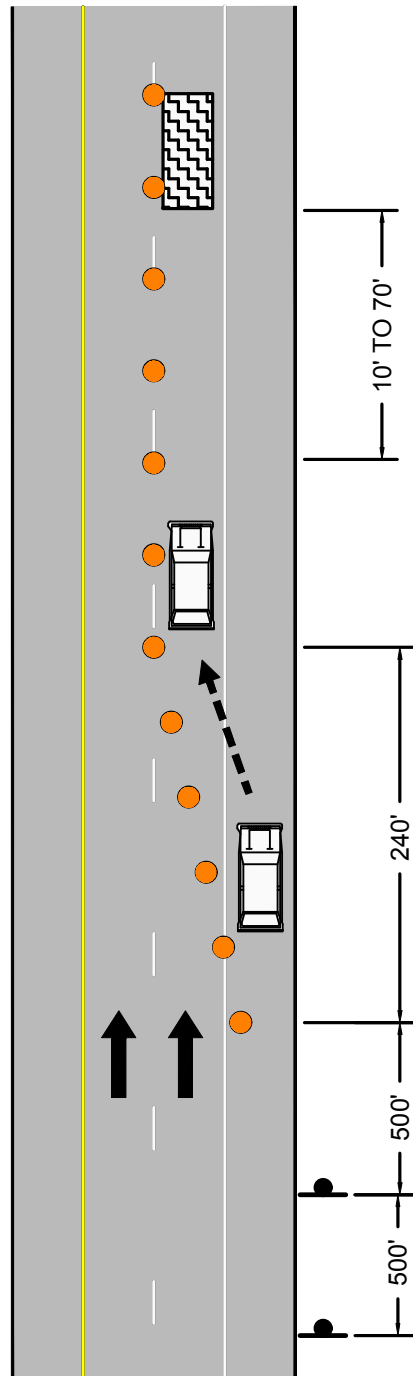




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FIGURE 37  
EMERGENCY RESPONSE  
MULTILANE DIVIDED ROADWAY  
RIGHT LANE



### LEGEND

- EMERGENCY AREA
- CHANNELIZATION DEVICE
- EMERGENCY RESPONSE VEHICLE
- RESPONSE VEHICLE MOVEMENT

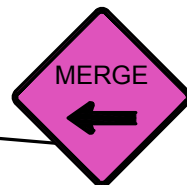
NOT TO SCALE

### ORDER OF RESPONSE ACTIVITIES

1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. STOP VEHICLE IN BREAKDOWN LANE.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 6 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. MOVE RESPONSE VEHICLE BEHIND EMERGENCY.
5. PLACE ADDITIONAL CONES.
6. TEND TO EMERGENCY.

### NOTES

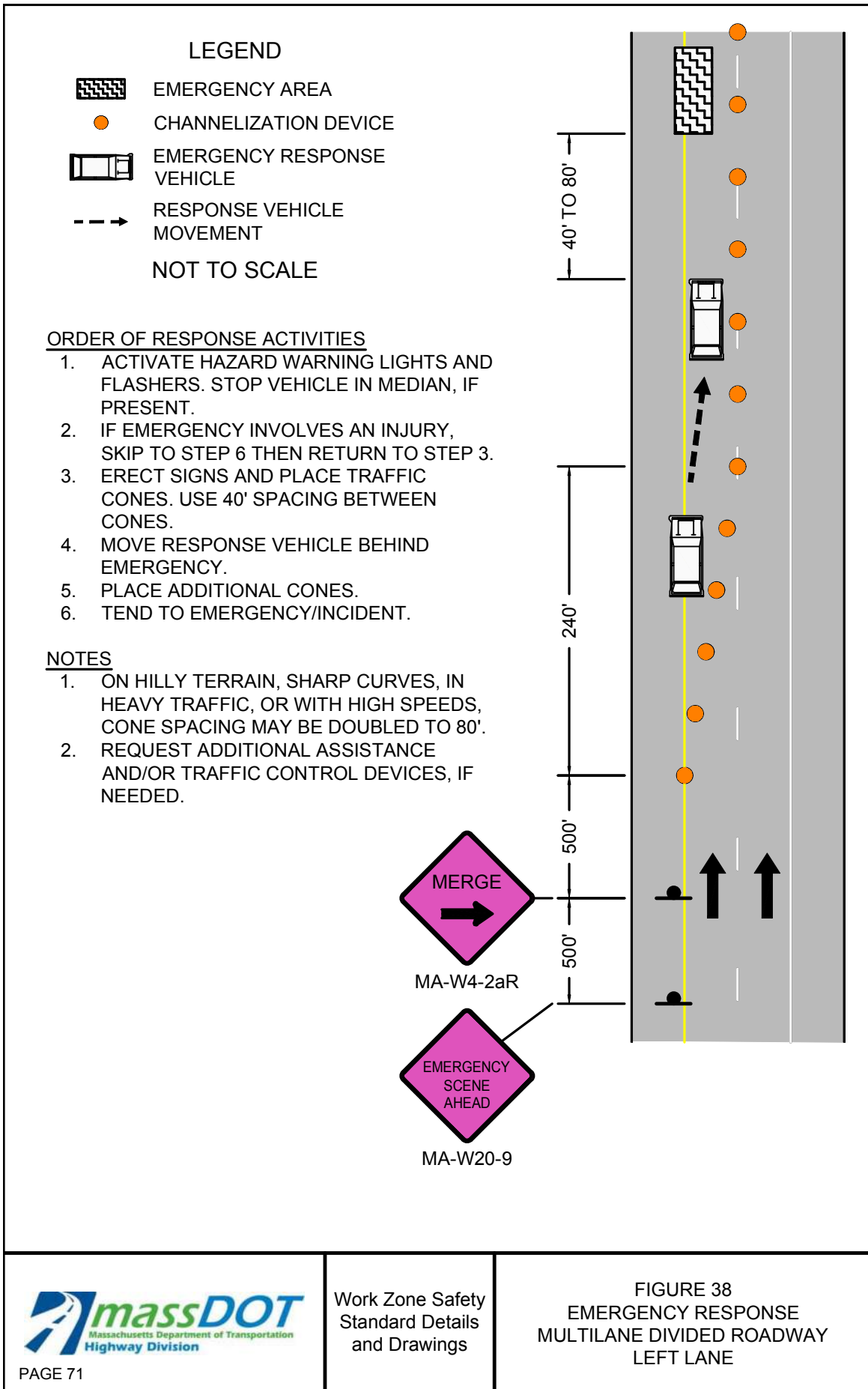
1. ON HILLY TERRAIN, SHARP CURVES, IN HEAVY TRAFFIC, OR WITH HIGH SPEEDS, CONE SPACING MAY BE DOUBLED TO 80'.
2. REQUEST ADDITIONAL ASSISTANCE AND/OR TRAFFIC CONTROL DEVICES, IF NEEDED.



MA-W4-2aL



MA-W20-9

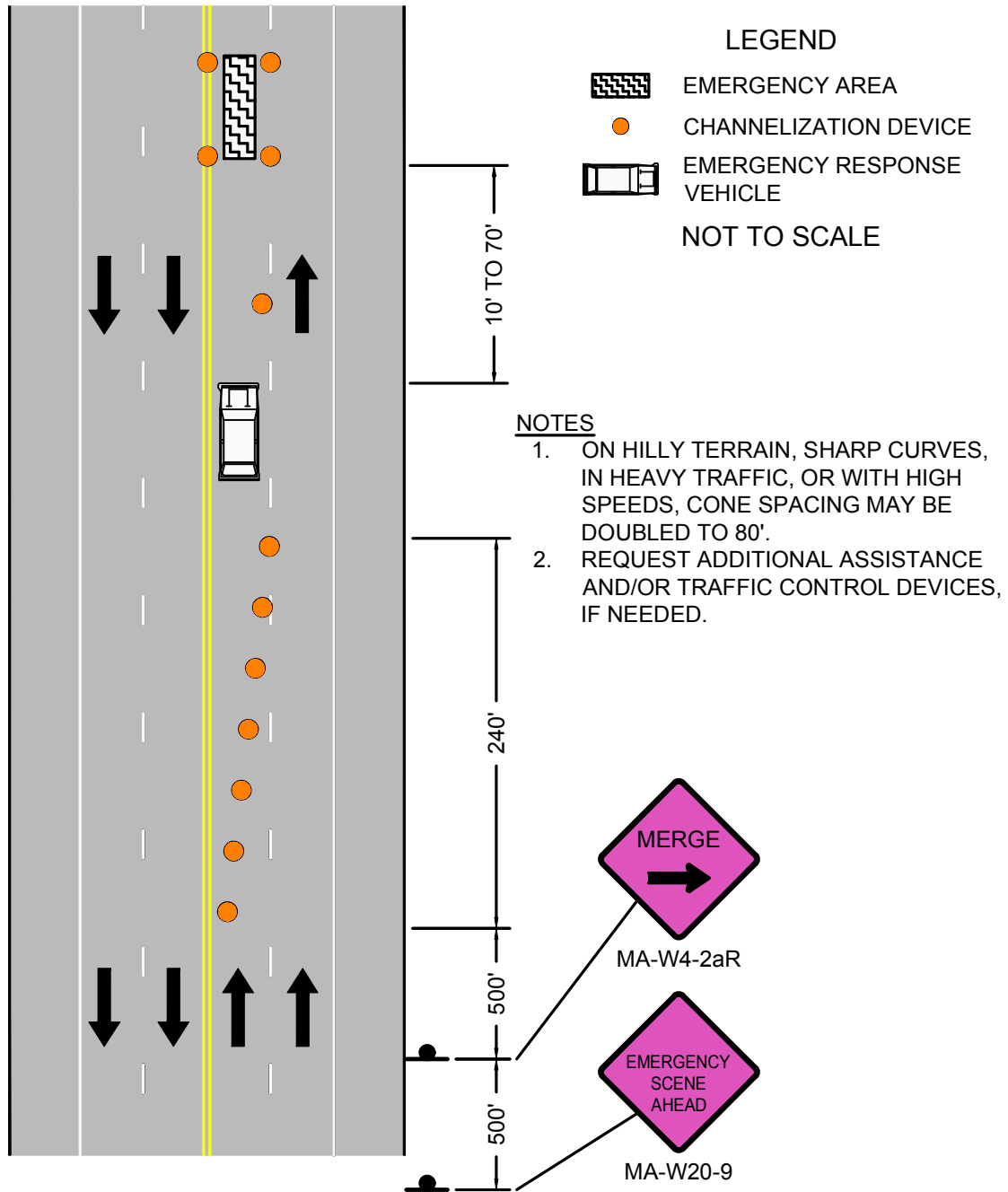


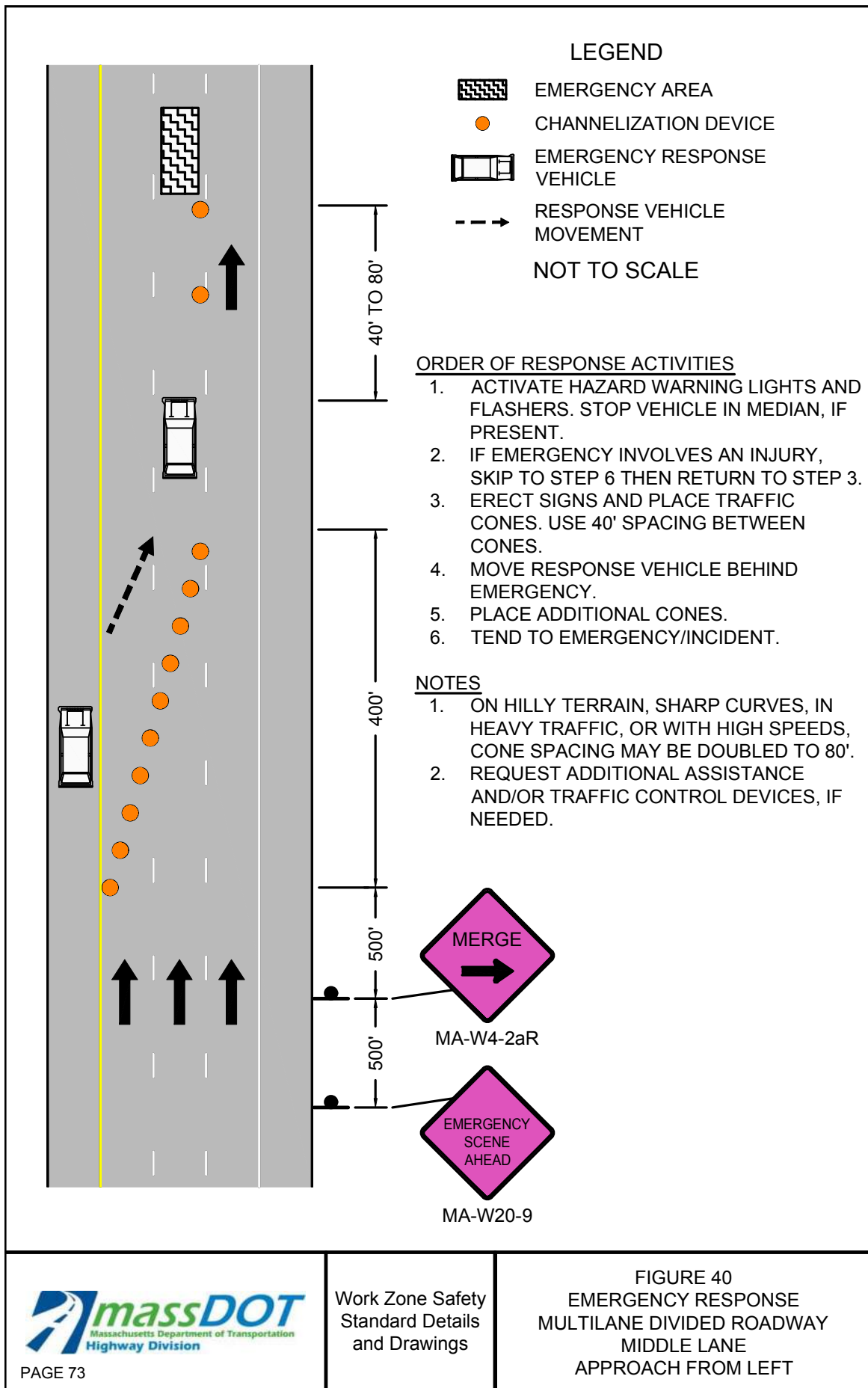


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FIGURE 39  
EMERGENCY RESPONSE  
MULTILANE UNDIVIDED  
ROADWAY  
LEFT LANE



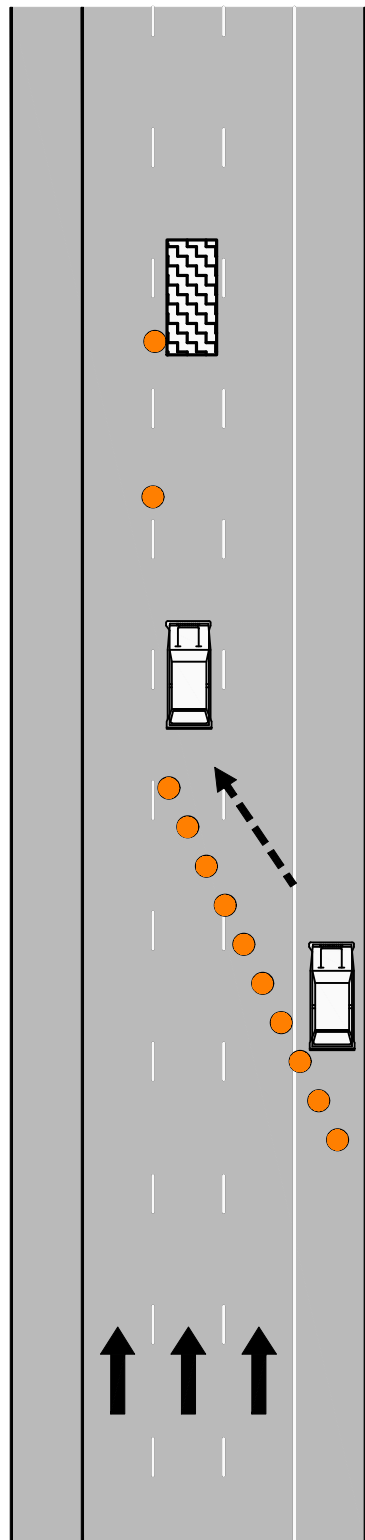




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FIGURE 41  
EMERGENCY RESPONSE  
MULTILANE DIVIDED ROADWAY  
MIDDLE LANE  
APPROACH FROM RIGHT



### LEGEND

- EMERGENCY AREA
- CHANNELIZATION DEVICE
- EMERGENCY RESPONSE VEHICLE
- RESPONSE VEHICLE MOVEMENT

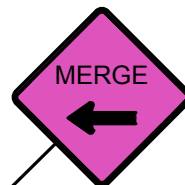
NOT TO SCALE

### ORDER OF RESPONSE ACTIVITIES

1. ACTIVATE HAZARD WARNING LIGHTS AND FLASHERS. STOP VEHICLE IN BREAKDOWN LANE.
2. IF EMERGENCY INVOLVES AN INJURY, SKIP TO STEP 6 THEN RETURN TO STEP 3.
3. ERECT SIGNS AND PLACE TRAFFIC CONES. USE 40' SPACING BETWEEN CONES.
4. MOVE RESPONSE VEHICLE BEHIND EMERGENCY.
5. PLACE ADDITIONAL CONES.
6. TEND TO EMERGENCY.

### NOTES

1. ON HILLY TERRAIN, SHARP CURVES, IN HEAVY TRAFFIC, OR WITH HIGH SPEEDS, CONE SPACING MAY BE DOUBLED TO 80'.
2. REQUEST ADDITIONAL ASSISTANCE AND/OR TRAFFIC CONTROL DEVICES, IF NEEDED.

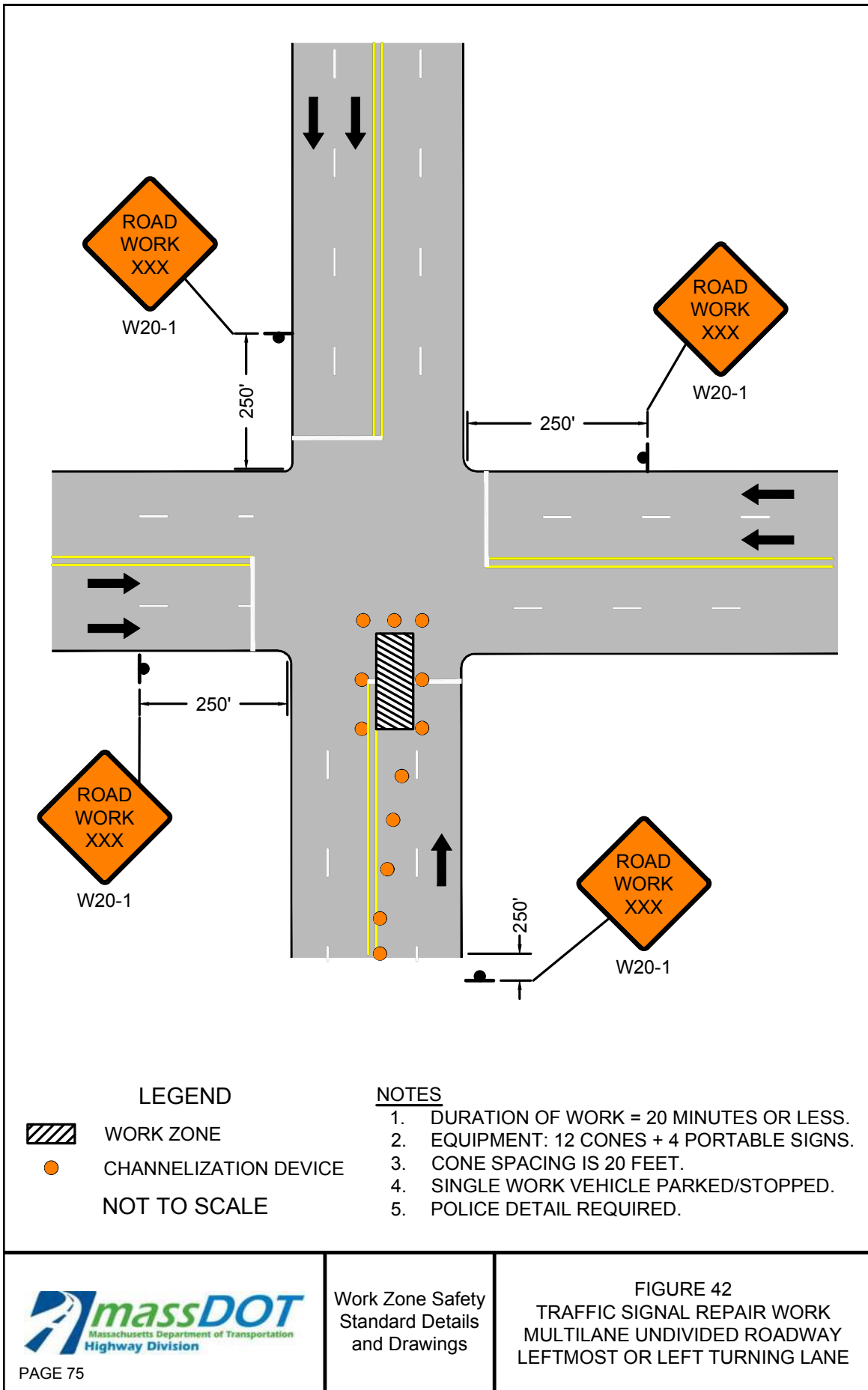


MA-W4-2aL



MA-W20-9



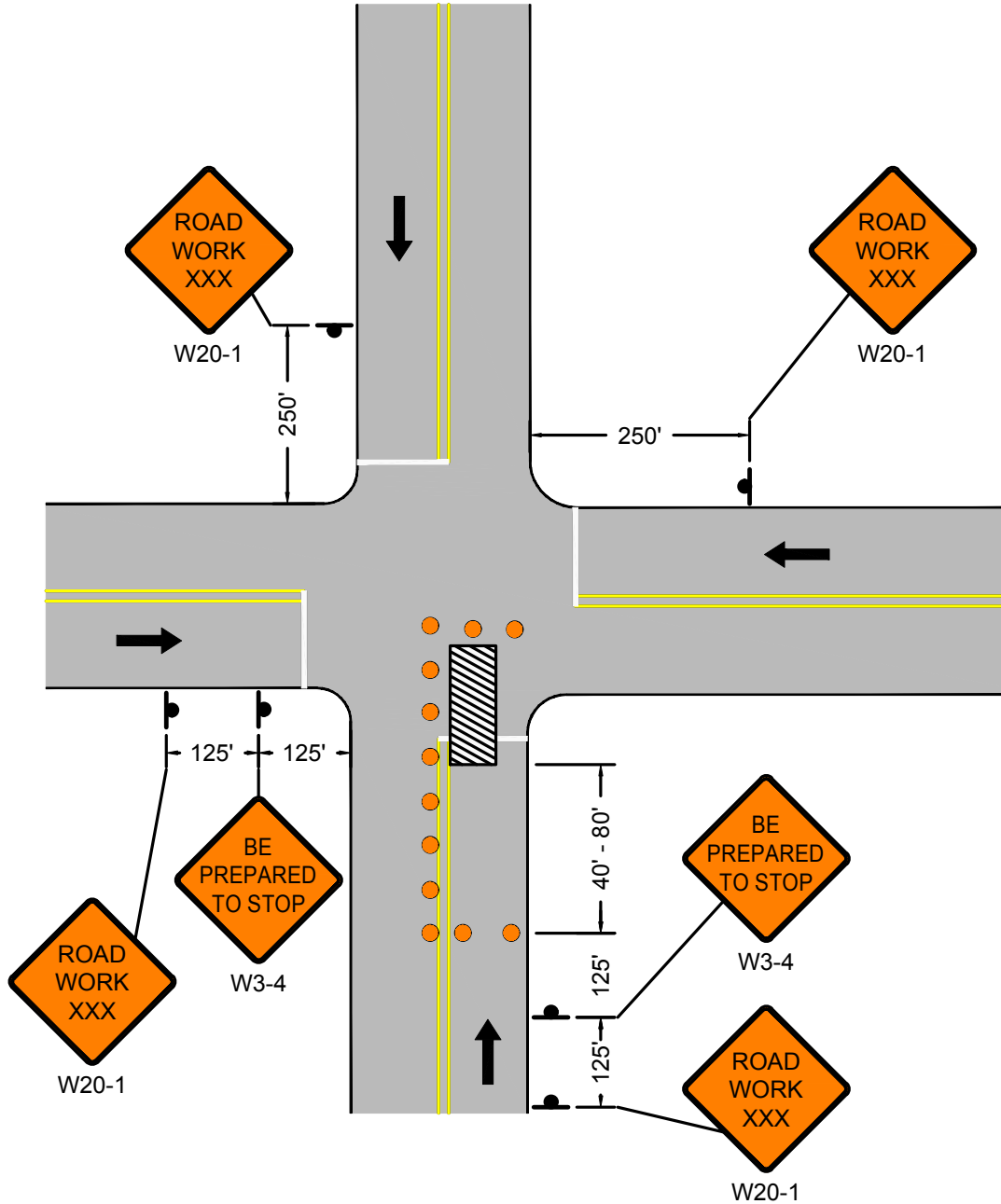




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FIGURE 43  
TRAFFIC SIGNAL REPAIR WORK  
TWO LANE UNDIVIDED ROADWAY  
ONE LEG OF INTERSECTION



#### LEGEND



WORK ZONE

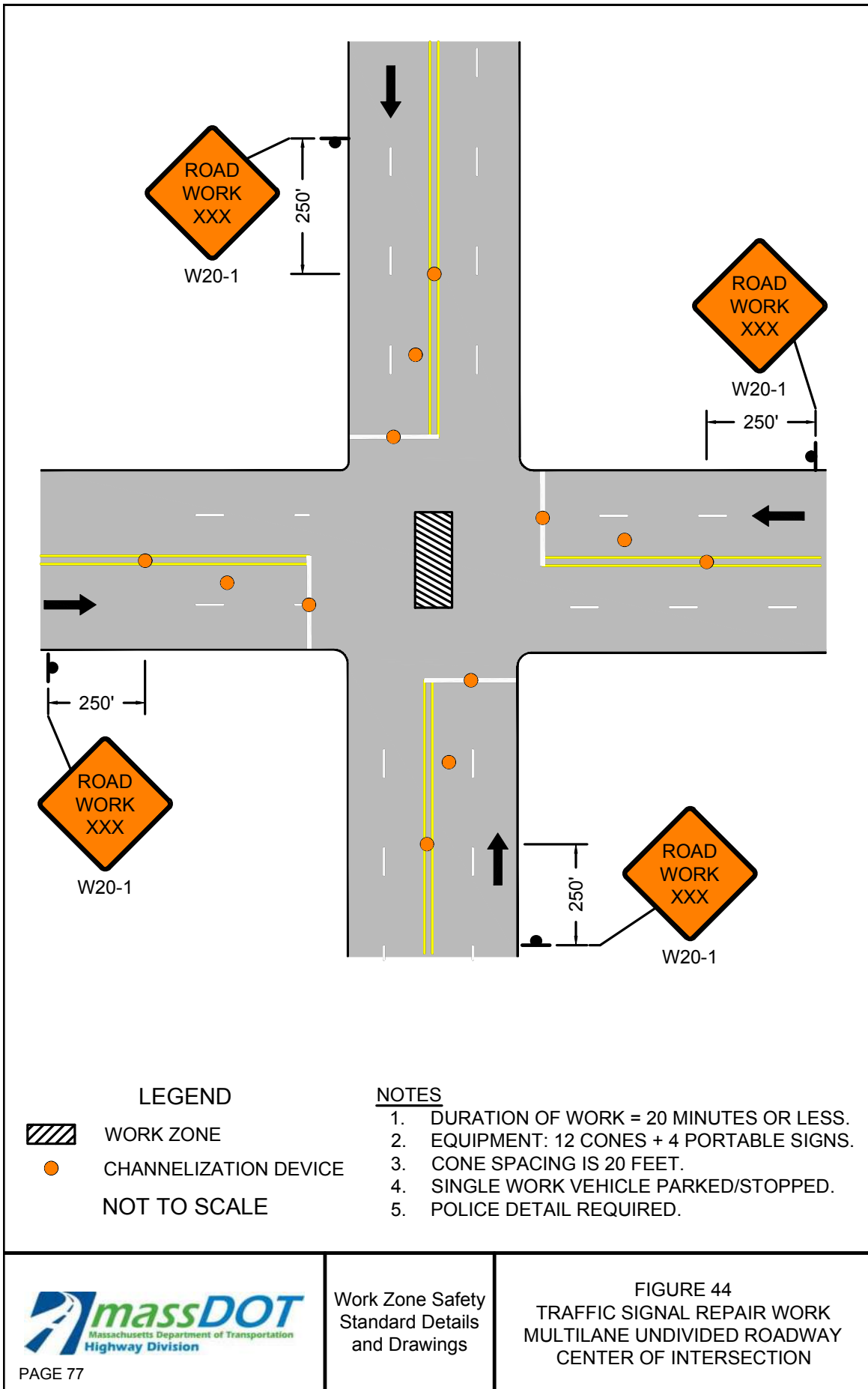


CHANNELIZATION DEVICE

NOT TO SCALE

#### NOTES

1. DURATION OF WORK = 20 MINUTES OR LESS.
2. EQUIPMENT: 12 CONES + 6 PORTABLE SIGNS.
3. CONE SPACING IS 20 FEET.
4. SINGLE WORK VEHICLE PARKED/STOPPED.
5. POLICE DETAIL REQUIRED.

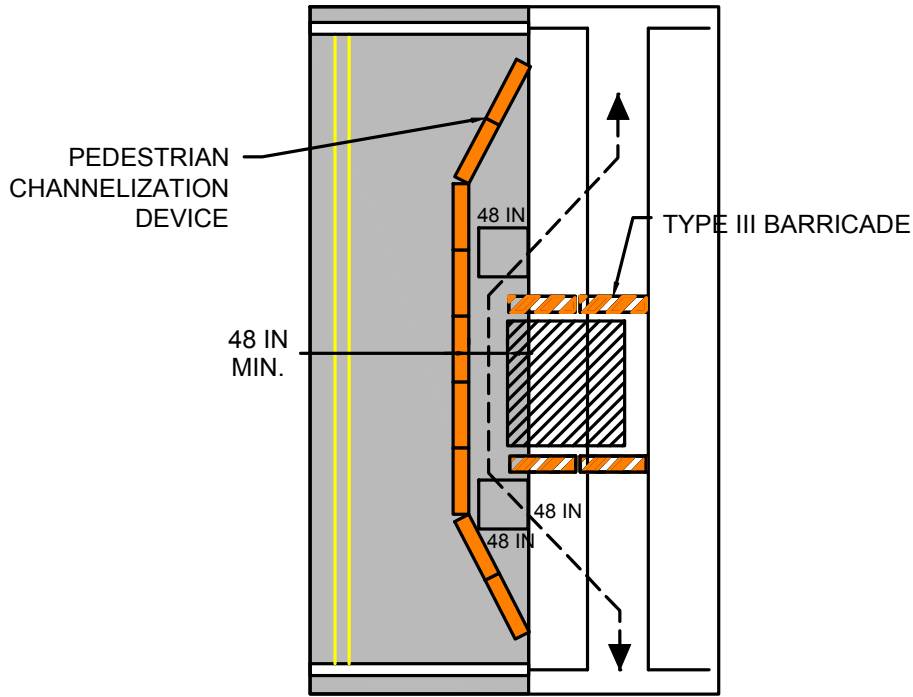




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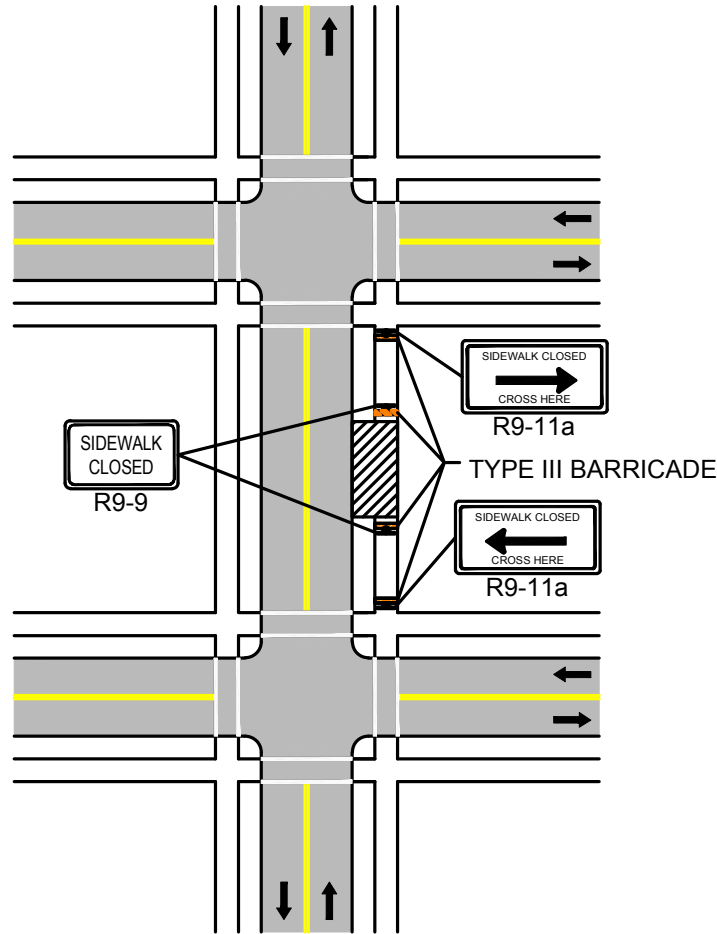
Work Zone Safety  
Standard Details  
and Drawings

FIGURE 45  
PEDESTRIAN BYPASS



**NOTES:**

1. WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
2. A PEDESTRIAN CHANNELIZATION DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ALONG THE FULL LENGTH OF THE TEMPORARY PEDESTRIAN ROUTE.
3. WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT.
4. THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
5. THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE SIDEWALK EXCEEDS 200 FEET THEN A 5 FOOT BY 5 FOOT PASSING ZONE SHALL BE PROVIDED NEAR THE MID-POINT OF THE CLOSURE.
6. THE PROTECTIVE REQUIREMENTS OF A TTC WORK ZONE MAY HAVE AN IMPACT IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN PROVIDING PEDESTRIAN DELINEATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
7. ON-DEMAND PEDESTRIAN ASSISTANCE PERSONNEL TO ASSIST WITH NAVIGATION AROUND THE CLOSURE/WORK AREA MAY BE CONSIDERED AS AN OPTION IN PLACE OF PROVIDING ADA/AAB DEVICES FOR WORK FOR CLOSURES LASTING 4 HOURS OR LESS.
8. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN; VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE. THESE DETAILS ARE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DETERMINED BY THE ENGINEER.



**NOTES:**

1. CLOSURE OF A SIDEWALK FACILITY SHALL CONSTITUTE THE PROVISION FOR MANAGING PEDESTRIAN TRAFFIC AND ACCOMMODATING ALL USERS. IF THE EXISTING PEDESTRIAN ACCESS ROUTE(S) CAN BE TEMPORARILY RELOCATED ALONG THE EXISTING SIDEWALK, AND SAID FACILITY PROVIDES A MINIMUM WIDTH OF 48-INCHES OF SOLID, SMOOTH UNOBSTRUCTED SURFACE, THEN NO DETOURING OF THE ROUTE SHALL BE REQUIRED. DELINEATION OF THE WORK AREA IS STILL REQUIRED.
2. IF IT IS NECESSARY TO DIVERT PEDESTRIAN TRAFFIC TO AN ALTERNATE ROUTE ACROSS THE ROADWAY FROM THE EXISTING FACILITY, THE FIGURE ABOVE SHALL BE FOLLOWED TO PROVIDE ADEQUATE DIRECTION TO PEDESTRIANS. ALTERNATE ROUTE SHALL PROVIDE THE SAME LEVEL OF ACCOMMODATION AS THE FACILITY THAT IS BEING DETOURED AND RETAIN ADA COMPLIANCE IN ITS ENTIRETY.
3. FOR EMERGENCY OR SHORT-DURATION SIDEWALK CLOSURES OF 4-HOURS OR LESS, IT IS OPTIONAL TO HAVE ON-DEMAND PEDESTRIAN ASSISTANCE PERSONNEL AVAILABLE AT ALL TIMES DURING THE CLOSURE TO ASSIST THOSE MOBILITY CHALLENGED PERSONS WHO REQUIRE ADDITIONAL ASSISTANCE TO SAFELY NAVIGATE AROUND THE WORK AREA IN LIEU OF A FULL DETOUR.



PAGE 80

Work Zone Safety  
Standard Details  
and Drawings

STATIONARY OPERATIONS  
BIKE LANE CLOSURE

POSTED SPEED LIMIT (MPH)	SPACING FOR BIKE ADVANCE WARNING SIGNS (FT) (A,B))	CHANNELIZATION DEVICES (DRUMS OR CONES)			
		TRANSITION LENGTH (L/3)	BUFFER ZONE LENGTH (FT)	DEVICE SPACING (FT)	MIN # OF DEVICES*
25-40	150 / 150	100	305	20	45
45-55	150 / 150	220	495	40	35
60-65	150 / 150	260	645	40	40

\* NUMBER OF DEVICES BASED ON 400 FT WORK ZONE.

#### NOTES

1. DETAIL SHALL BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS. SIGNING SHOWN ONLY FOR BIKE TRAFFIC. FOLLOW ALL OTHER RELEVANT DETAILS FOR TTC DEVICES FOR VEHICULAR TRAFFIC.
2. \*\* SIGN SHALL BE USED ONLY IF THERE IS A MARKED BIKE LANE.
3. \*\*\* SIGN SHALL BE USED ONLY IF THERE IS NO MARKED BIKE LANE.

#### LEGEND



WORK ZONE



CHANNELIZATION DEVICE



FLASHING ARROW BOARD



PORTABLE CHANGEABLE MESSAGE SIGN



TRUCK MOUNTED ATTENUATOR



RADAR SPEED FEEDBACK BOARD



POLICE DETAIL OR UNIFORMED FLAGGER

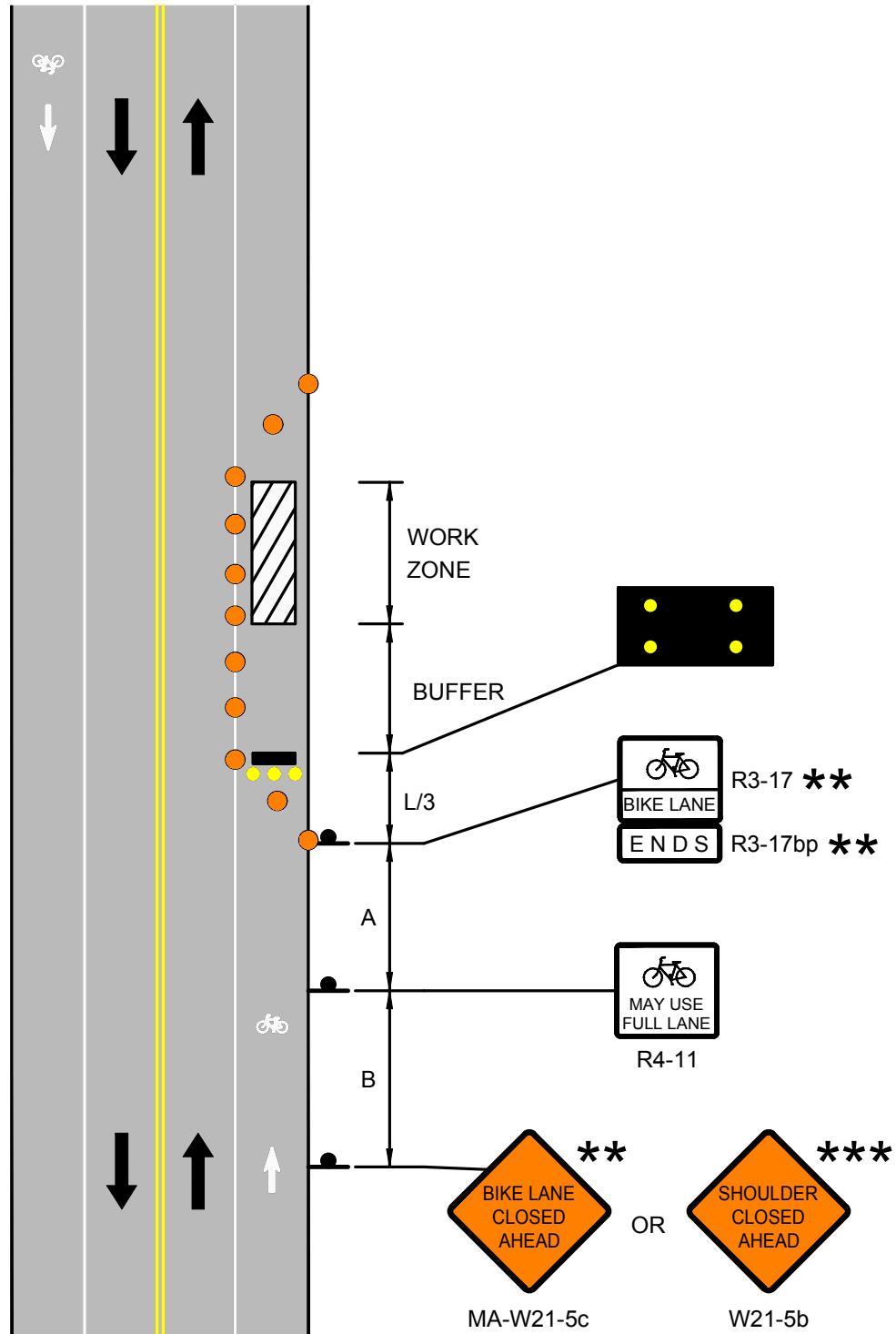


TEMPORARY PORTABLE RUMBLE STRIP



TYPE III BARRICADE

NOT TO SCALE





Rev. June, 2017



DOCUMENT A00817

## **Bridge Inspection Reports**

B-01-014 (4AN) Inspectio Report    Pages 3 throuh 19

B-01-012 (4AP) Inspectio Report    Pages 21 through 39

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## STRUCTURES INSPECTION FIELD REPORT

2-DIST  
05B.I.N.  
4AN

## ROUTINE INSPECTION

BR. DEPT. NO.  
B-01-014

CITY/TOWN <b>BARNSTABLE</b>		8-STRUCTURE NO. <b>B01014-4AN-DOT-NBI</b>		11-Kilo. POINT <b>000.000</b>	41-STATUS <b>A:OPEN</b>	90-ROUTINE INSP. DATE <b>AUG 22, 2023</b>
07-FACILITY CARRIED <b>HWY OAK ST</b>		MEMORIAL NAME/LOCAL NAME		27-YR BUILT <b>1950</b>	106-YR REBUILT <b>0000</b>	YR REHAB'D (NON 106) <b>0000</b>
06-FEATURES INTERSECTED <b>US 6 EB/MID CAPE HWY</b>		26-FUNCTIONAL CLASS <b>Urban Minor Arterial</b>		DIST. BRIDGE INSPECTION ENGINEER <b>G. Simpson</b>		
43-STRUCTURE TYPE <b>107 : Concrete Frame</b>		22-OWNER <b>State Highway Agency</b>	21-MAINTAINER <b>State Highway Agency</b>	TEAM LEADER J. Spiezio		
107-DECK TYPE <b>1 : Concrete Cast-in-Place</b>		WEATHER <b>Cloudy</b>	TEMP. (air) <b>20°C</b>	TEAM MEMBERS <b>M. EMMONS</b>		

<b>ITEM 58</b> <b>DECK</b> <div>6</div> <div>DEF</div> <table border="1"> <tr><td>1. Wearing surface</td><td>4</td><td>S-A</td></tr> <tr><td>2. Deck Condition</td><td>6</td><td>M-P</td></tr> <tr><td>3. Stay in Place Forms</td><td>N</td><td>-</td></tr> <tr><td>4. Curbs</td><td>5</td><td>M-P</td></tr> <tr><td>5. Median</td><td>N</td><td>-</td></tr> <tr><td>6. Sidewalks</td><td>6</td><td>M-P</td></tr> <tr><td>7. Parapets</td><td>6</td><td>M-P</td></tr> <tr><td>8. Railing</td><td>N</td><td>-</td></tr> <tr><td>9. Anti Missile Fence</td><td>N</td><td>-</td></tr> <tr><td>10. Drainage System</td><td>N</td><td>-</td></tr> <tr><td>11. Lighting Standards</td><td>N</td><td>-</td></tr> <tr><td>12. Utilities</td><td>N</td><td>-</td></tr> <tr><td>13. 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Member Alignment	6	M-P	14. Paint/Coating	N	-	15. Concrete Frame	6	M-P	<b>ITEM 60</b> <b>SUBSTRUCTURE</b> <div>7</div> <div>DEF</div> <table border="1"> <tr><td>1. Abutments</td><td>Dive</td><td>Cur</td><td>7</td><td>-</td></tr> <tr><td>    a. Pedestals</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    b. Bridge Seats</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    c. Backwalls</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    d. Breastwalls</td><td>N</td><td>7</td><td></td><td>M-P</td></tr> <tr><td>    e. Wingwalls</td><td>N</td><td>7</td><td></td><td>M-P</td></tr> <tr><td>    f. Slope Paving/Rip-Rap</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    g. Pointing</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    h. Footings</td><td>N</td><td>H</td><td></td><td>-</td></tr> <tr><td>    i. Piles</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    j. Scour</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    k. 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X=UNKNOWN

N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE

R=REMOVED

<b>CITY/TOWN</b> <b>BARNSTABLE</b>	<b>B.I.N.</b> <b>4AN</b>	<b>BR. DEPT. NO.</b> <b>B-01-014</b>	<b>8.-STRUCTURE NO.</b> <b>B01014-4AN-DOT-NBI</b>	<b>INSPECTION DATE</b> <b>AUG 22, 2023</b>
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<b>ITEM 61</b> <b>CHANNEL &amp; CHANNEL PROTECTION</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>Dive</th> <th>Cur</th> <th>DEF</th> </tr> </thead> <tbody> <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> </tbody> </table> <div style="margin-top: 10px;"> <b>STREAM FLOW VELOCITY:</b>  Tidal ( ) High ( ) Moderate ( ) Low ( ) None (X) </div> <div style="margin-top: 10px;"> <b>ITEM 61 (Dive Report):</b> <input type="checkbox"/> N <b>ITEM 61 (This Report):</b> <input type="checkbox"/> N </div> <div style="margin-top: 10px;"> <b>93b-U/W INSP. DATE:</b> <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	-													<div style="border: 1px solid black; padding: 5px; width: 30px; margin: 0 auto;">N</div>	<b>ITEM 36 TRAFFIC SAFETY</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>36</th> <th>COND</th> <th>DEF</th> </tr> </thead> <tbody> <tr><td>A. Bridge Railing</td><td>0</td><td>6</td><td>M-P</td></tr> <tr><td>B. Transitions</td><td>0</td><td>7</td><td>M-P</td></tr> <tr><td>C. Approach Guardrail</td><td>0</td><td>7</td><td>M-P</td></tr> <tr><td>D. 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<b>RATING</b> Rating Report (Y/N): <input type="checkbox"/> Y Date: <input type="text" value="04/01/2018"/> Inspection data at time of existing rating I 58: 6 I 59: 6 I 60: 7 Date :08/25/2015	<b>Recommend for Rating or Rerating (Y/N):</b> <input type="checkbox"/> N <span style="float: right;">If YES please give priority: HIGH ( ) MEDIUM ( ) LOW ( )</span> <b>REASON:</b> _____
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CONDITION RATING GUIDE <span style="float: right;">(For Items 58, 59, 60 and 61)</span>		
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	
<b>DEFICIENCY:</b>	A defect in a structure that requires corrective action.
<b>CATEGORIES OF DEFICIENCIES:</b>	
<b>M= Minor Deficiency</b>	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.
<b>S= Severe/Major Deficiency</b>	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.
<b>C-S= Critical Structural Deficiency</b>	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.
<b>C-H= Critical Hazard Deficiency</b>	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.
<b>URGENCY OF REPAIR:</b>	
<b>I = Immediate-</b>	[Inspector(s) immediately contact District Bridge Inspection Engineer (DBIE) to report the Deficiency and to receive further instruction from him/her].
<b>A = ASAP-</b>	[Action/Repair should be initiated by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) upon receipt of the Inspection Report].
<b>P = Prioritize-</b>	[Shall be prioritized by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) and repairs made when funds and/or manpower is available].

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**REMARKS**

**BRIDGE ORIENTATION**  
Orientation as follows:  

- Bridge carries Oak Street intersecting US EB with north/south orientation, see sketch 1.

**GENERAL REMARKS**  
Vertical Clearances  
 Minimum vertical clearance is 14'-6" along the high speed shoulder line below the NW sector, see sketch 1. There are EB gated advanced and at bridge height posting signs (13'-10") in place, legible and the north EB at bridge posting sign is obscured with vegetation, see photos 1 and 11 for examples.

Access  
 Vehicle staging at the SE, top side inspected from the safety of the sidewalks, underside inspected from behind the guardrail system via NW embankment.

**ITEM 58 - DECK**

**Item 58.1 - Wearing surface**  
 Bituminous wearing surface deficiencies as follows:  

- Wide spread densely spaced unsealed/sealed longitudinal, transverse and irregular cracks  $\leq 1/2"$ W throughout, predominantly FL along the east SL, see photos 2 and 3.
- Impending potholes, predominantly east SL and near the abutments.
- **S/A - Moderate to severe rutting in the wheel paths  $\leq 4"$ D, see photos 2 and 4.**
- Debris/vegetation impaction FL along both curb lines.

**Item 58.2 - Deck Condition**  
 See Item 59.15 - Concrete Frame.

**Item 58.4 - Curbs**  
 Deficiencies as follows:  

- FL both curbs, rotated towards the roadway  $\leq 1.5"$ , worst at the NE (Photo 3), see photos 2, 4 and 5 for examples.
- FL both curbs, vegetation/debris impaction at the sidewalk interface, see photos 3 - 5 for examples.

**Item 58.6 - Sidewalks**  
 Deficiencies as follows:  

- Both sidewalks (Safety-walk) exhibit random  $\leq 1/8"$ W transverse cracking, scaling/spalling/delaminations with vegetation impaction at ends and along curb lines, see photos 2 - 5 for overview examples.

**Item 58.7 - Parapets**  
 Solid concrete barrier with slabs of New England Pink Granite affixed along the exterior vertical faces and affixed along the tops (Cap Stones), see photos 2, 3 and 9 - 11 for typical overviews.  
 Deficiencies as follows:  

- SE endpost is missing a plaque, see photo 6.
- Wide spread separation/voids in mortar joints, predominantly along the tops (Cap Stones), however, slabs of New England Pink Granite resonate stable when sounded, see photos 4 and 7.

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**REMARKS**

- Solid concrete sections along both fascias exhibit  $\leq$ FL moderate - severe densely spaced  $\leq 1/16"$ W longitudinal cracking with heavy active efflorescence, see photos 10 and 11 for exterior views.

**APPROACHES**

**Approaches a - Appr. pavement condition**  
Both approaches have sealed saw cuts over the abutments.  
Deficiencies as follows:

**SOUTH APPROACH**

- Wide spread densely spaced unsealed/sealed longitudinal, transverse and irregular cracks  $\leq 1/2"$ W throughout, predominantly over the abutment and east SL, see photo 6.
- Over the abutment, curb to curb saw and sealed cuts each exhibiting some separation  $\leq 1/2"$ W in the shoulders with some debris impaction, see photo 6 for an example.
- **S/A, severe rutting in the wheel paths that continues onto the bridge 2"D - 4"D.**
- Debris/vegetation along both edges of the roadway.
- NB, FL x  $\leq 3'$ W longitudinal asphalt patch and two large ( $\leq 4'$  diameter patches beyond bridge limits), see photo 6.

**North Approach** - See photo 3 for an overview.

- Wide spread moderately spaced unsealed/sealed longitudinal, transverse and irregular cracks  $\leq 1/2"$ W throughout, predominantly over the abutment, see photo 7.
- Over the abutment, curb to curb saw and sealed cuts each exhibiting some separation  $\leq 1/2"$ W in the shoulders with some debris impaction, see photo 3 for an example.
- **S/A, severe rutting in the wheel paths that continues onto the bridge 2"D - 4"D, see photo 7.**
- Debris/vegetation along both edges of the roadway.

**Approaches b - Appr. Roadway Settlement**  
See Approach Pavement for condition comments.

**Approaches c - Appr. Sidewalk Settlement**  
Sidewalks do not extend beyond approaches at the south or north approach of adjacent structure.  
Deficiencies as follows:

- All approach sidewalks settled  $\leq 2"$  and exhibit curb rotation  $\leq 1.25"$  towards the roadway, see photos 3 - 5 for examples.
- FL Both sidewalks display greatly spaced unsealed  $\leq 1/8"$ W transverse cracks, see photo 2.
- Moderate - heavy vegetation impaction at the ends and along the curbs, see photos 2 - 5 for examples.

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**REMARKS**

**ITEM 59 - SUPERSTRUCTURE**

**Item 59.13 - Member Alignment**  
In general, the top of the wingwalls/approach parapets exhibit settlement/rotation in relation to the bridge parapets. Misalignments were field measured along the tops, interior vertical faces of the cap granite and concrete portion below, see photo 5 and sketch 2 for location/method of measurements and chart 1 for results of field measurements.

**Item 59.15 - Concrete Frame**  
Condition based in conjunction with item 60.1.d - Breastwalls, deficiencies as follows :

- Minor cover spalls along the north frame leg. See photo 11 for general underside.
- FL both soffit edge and elevations exhibits moderate concrete contamination with densely spaced  $\leq 1/16"$ W longitudinal cracking with active heavy efflorescence (East Elevation Worst), see photos 8 - 11.
- All concrete appears stable at the time of this inspection.

**ITEM 60 - SUBSTRUCTURE**

**Item 60.1 - Abutments**

**Item 60.1.d - Breastwalls**  
Breastwalls (Frame Legs) deficiencies as follows:

- See photos 10 and 11 for an overview of the north breastwall.
- SW edge of frame displays some minor cover spalls, see photo 10.

**Item 60.1.e - Wingwalls**  
Deficiencies as follows:

- Top NE wingwall, isolated area of  $\leq 1/16"$ W map/irregular cracking and active efflorescence, see photo 11.
- All wingwalls, heavy vegetation encroachment (Poison Ivy), see photos 10 and 11.

**Item 60.1.k - Settlement**  
See item 59.13 - Member Alignment for related condition comments.

**TRAFFIC SAFETY**

**Item 36a - Bridge Railing**  
Bridge railing consist of C.I.P. R/C with New England pink granite facade & cap, non-standard.  
  
See Item 58.7 - Parapets for condition comments.

**Item 36b - Transitions**  
South steel W beam transitions are smoothly/firmly attached, nested/lapped correctly, however, irregular post spacings, missing collapsible pins and post affixed with steel offset blocks, all non-standard, see photo 6.  
  
The north transitions are N/A, continuous to adjacent bridge B01012 (4AP), see photo 7.

**Item 36c - Approach Guardrail**  
Approach rails at the south are steel W beam with steel posts affixed with steel offset blocks, non-standard.

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**REMARKS**

The north are not N/A, continuous to adjacent bridge B01012 (4AP), see photo 7.

**Item 36d - Approach Guardrail Ends**  
Guardrail ends to the south are beyond bridge limits, the north are not applicable.

**Sketch / Chart / Photo Log**

Sketch 1 : Plan view and vertical clearances.

Sketch 2 : Points of measurement at bridge and approach parapet interface. Approach parapet in the foreground.

Chart 1 : 2023 Field measurements at the four interfaces of the approach parapets/bridge parapets.

Photo 1 : Looking east at EB advanced/at bridge height posting signs, north at bridge sign obscured by vegetation.

Photo 2 : Looking NW from the SE over wearing surface, severe rutting in the wheel paths, sealed/unsealed cracks and isolated/random asphalt filled potholes.

Photo 3 : Looking SW from the NE over wearing surface, severe rutting in the wheel paths, sealed/unsealed cracks and isolated/random asphalt filled potholes.

Photo 4 : Looking south at NW corner, sidewalk settlement, severe rutting in the wheel paths, sealed/unsealed cracks and isolated/random asphalt filled potholes.

Photo 5 : Looking NW at SW corner, parapet field measurements and sidewalk/curb settlement.

Photo 6 : Looking SW over south approach pavement, continued wearing surface deficiencies with FL asphalt patch in NB lane.

Photo 7 : Looking NW over north approach pavement, continued wearing surface deficiencies and NE corner sidewalk/curb settlement.

Photo 8 : Looking north, general underside.

Photo 9 : Close up of previous photo (East Soffit Edge), FL active efflorescence with HL densely spaced longitudinal cracks.

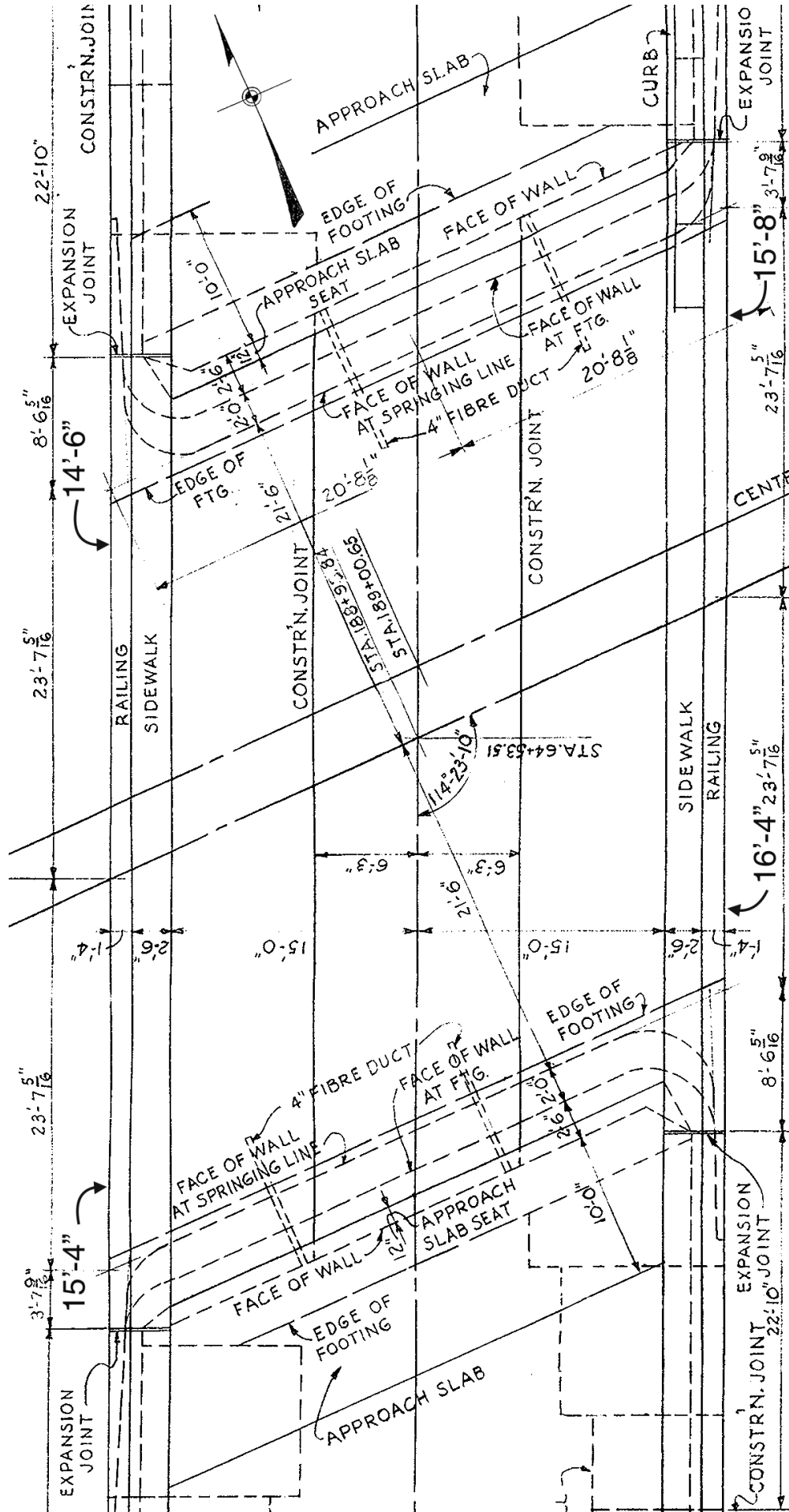
Photo 10 : West elevation.

Photo 11 : East elevation.



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# SKETCHES



Sketch 1: Plan view and vertical clearances.

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**SKETCHES**

**Sketch 2: Points of measurement at bridge and approach parapet interface. Approach parapet in the foreground.**

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## CHARTS

	<u>Top face of granite</u>	<u>Interior face along granite</u>	<u>Interior face along concrete</u>
NW	1/8" Differential	$\Delta$ 1 1/8" Differential	1 1/4" Differential
SW	$\Delta$ 5/8" Differential	$\Delta$ 1 5/8" Differential	1 3/16" Differential
NE	3/8" Differential	$\Delta$ 1 " Differential	$\Delta$ 1 1/8" Differential
SE	1/8" Differential	7/8" Differential	3/4" Differential

$\Delta$  = CHANGES/ADDITIONS SINCE LAST REPORT.

Chart 1: 2023 Field measurements at the four interfaces of the approach parapets/bridge parapets.



CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AN</b>	BR. DEPT. NO. <b>B-01-014</b>	8-STRUCTURE NO. <b>B01014-4AN-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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## PHOTOS



**Photo 1:** Looking east at EB advanced/at bridge height posting signs, north at bridge sign obscured by vegetation.



**Photo 2:** Looking NW from the SE over wearing surface, severe rutting in the wheel paths, sealed/unsealed cracks and isolated/random asphalt filled potholes.



CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AN</b>	BR. DEPT. NO. <b>B-01-014</b>	8.-STRUCTURE NO. <b>B01014-4AN-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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## PHOTOS



**Photo 3:** Looking SW from the NE over wearing surface, severe rutting in the wheel paths, sealed/unsealed cracks and isolated/random asphalt filled potholes.



**Photo 4:** Looking south at NW corner, sidewalk settlement, severe rutting in the wheel paths, sealed/unsealed cracks and isolated/random asphalt filled potholes.



CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AN</b>	BR. DEPT. NO. <b>B-01-014</b>	8.-STRUCTURE NO. <b>B01014-4AN-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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## PHOTOS



**Photo 5:** Looking NW at SW corner, parapet field measurements and sidewalk/curb settlement.



**Photo 6:** Looking SW over south approach pavement, continued wearing surface deficiencies with FL asphalt patch in NB lane.

CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AN</b>	BR. DEPT. NO. <b>B-01-014</b>	8.-STRUCTURE NO. <b>B01014-4AN-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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**PHOTOS**

**Photo 7:** Looking NW over north approach pavement, continued wearing surface deficiencies and NE corner sidewalk/curb settlement.



**Photo 8:** Looking north, general underside.



CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AN</b>	BR. DEPT. NO. <b>B-01-014</b>	8.-STRUCTURE NO. <b>B01014-4AN-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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**PHOTOS**

**Photo 9:** Close up of previous photo (East Soffit Edge), FL active efflorescence with HL densely spaced longitudinal cracks.



**Photo 10:** West elevation.



CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AN</b>	BR. DEPT. NO. <b>B-01-014</b>	8.-STRUCTURE NO. <b>B01014-4AN-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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**PHOTOS****Photo 11: East elevation.**

Report Date: November 20, 2024

State Information										Classification										Code																			
<b>BDEPT#= 801014</b>										Agency Br.No.										(112) NBIS Bridge Length										Y									
<b>Town= Barnstable</b>										L.O. MHD										(104) Highway System										N									
<b>B.I.N= 4AN</b>										AASHTO= 074.5										(26) Functional Class - Urban Minor Arterial										16									
RANK= 2355 H.I.= 96.7 %										FHWA Select List= Y (6/21/2017)										(100) Defense Highway										0									
(8) Structure Number										B010144ANDOTNBI										(101) Parallel Structure										N									
(5) Inventory Route										151000000										(102) Direction of Traffic - 2-way traffic										2									
(2) State Highway Department District										05										(103) Temporary Structure										N									
(3) County Code 001 (4) Place code										03635										(105) Federal Lands Highways										0									
(6) Features Intersected										<b>US 6 EB/MID CAPE HWY</b>										(110) Designated National Network										N									
(7) Facility Carried										<b>HWY OAK ST</b>										(20) Toll - On free road										3									
(9) Location										AT JCT SERVICE ROAD										(21) Maintain - State Highway Agency										01									
(11) Kilometerpoint										0000.000										(22) Owner - State Highway Agency										01									
(12) Base Highway Network										N										(37) Historical Significance built after 1949 presumed to be not eligi										Z									
(13) LRS Inventory Route & Subroute										000000000000										<b>Condition</b>										<b>Code</b>									
(16) Latitude										41 DEG 41 MIN 02.52 SEC										(58) Deck										6									
(17) Longitude										70 DEG 21 MIN 13.77 SEC										(59) Superstructure										6									
(98) Border Bridge State Code										Share %										(60) Substructure										7									
(99) Border Bridge Structure No. #																				(61) Channel & Channel Protection										N									
																				(62) Culverts										N									
<b>Structure Type and Material</b>																				<b>Load Rating and Posting</b>										<b>Code</b>									
(43) Structure Type Main: Concrete										Code 107										(31) Design Load - H 20=M 18										4									
Frame										Jointless bridge type: RIGID FRAME										(63) Operating Rating Method - Load Factor (LF)										1									
(44) Structure Type Appr: Other										Code 000										(64) Operating Rating										99.9									
(45) Number of spans in main unit										001										(65) Inventory Rating Method - Load Factor (LF)										1									
(46) Number of approach spans										0000										(66) Inventory Rating										75.4									
(107) Deck Structure Type - Concrete Cast-in-Place										Code 1										(70) Bridge Posting										5									
(108) Wearing Surface / Protective System:																				(41) Structure - Open										A									
A) Type of wearing surface - Bituminous										Code 6										<b>Appraisal</b>										<b>Code</b>									
B) Type of membrane - Built-up										Code 1										(67) Structural Evaluation										6									
C) Type of deck protection - None										Code 0										(68) Deck Geometry										3									
																				(69) Underclearances, vert. and horiz.										4									
																				(71) Waterway adequacy										N									
																				(72) Approach Roadway Alignment										8									
(27) Year Built										1950										(36) Traffic Safety Features										0 0 0 N									
(106) Year Reconstructed										0000										(113) Scour Critical Bridges										N									
(42) Type of Service: On - Highway																				<b>Inspections</b>																			
Under - Highway										Code 11										(90) Inspection Date 08/22/23										(91) Frequency 24 MO									
(28) Lanes: On Structure 02 Under structure										02										(92) Critical Feature Inspection:										(93) CFI DATE									
(29) Average Daily Traffic										006701										(A) Fracture Critical Detail N 00 MO A)										00/00/00									
(30) Year of ADT 2023 (109) Truck ADT										06 %										(B) Underwater Inspection N 00 MO B)										00/00/00									
(19) Bypass, detour length										006 KM										(C) Other Special Inspection N 00 MO C)										00/00/00									
																				(*) Other Inspection ( ) N 00 MO *)										00/00/00									
																				(*) Closed Bridge N 00 MO *)										00/00/00									
																				(*) UW Special Inspection N 00 MO *)										00/00/00									
																				(*) Damage Inspection MO *)										00/00/00									
<b>Geometric Data</b>																				<b>Rating Loads</b>																			
(48) Length of maximum span										0014.3 M										Report Date 04/01/18										H20									
(49) Structure Length										00016.8 M										Type 3										Type 3S2									
(50) Curb or sidewalk: Left 00.8 M Right 00.8 M																				Operating										61.0									
(51) Bridge Roadway Width Curb to Curb										009.1 M										Inventory										38.0									
(52) Deck Width Out to Out										011.5 M																				47.0									
(32) Approach Roadway Width (w/shoulders)										009.1 M																				75.0									
(33) Bridge Median - No median										Code 0																				50.0									
(34) Skew 24 DEG (35) Structure Flared										N										<b>Field Posting</b>																			
(10) Inventory Route MIN Vert Clear										99.99 M										Status LEGAL										Posting Date 06/11/19									
(47) Inventory Route Total Horiz Clear										09.1 M										2 Axle										3 Axle									
(53) Min Vert Clear Over Bridge Rdwy										99.99 M										5 Axle										Single									
(54) Min Vert Underclear ref H										04.41 M										Actual																			
(55) Min Lat Underclear RT ref H										01.6 M										Recommended																			
(56) Min Lat Underclear LT										01.5 M										Missing Signs N																			
																				<b>Misc.</b>																			
<b>Navigation Data</b>																				Bridge Name																			
(38) Navigation Control - Not applicable, no waterway										Code N										N Anti-missile fence N Acrow Panel Y Jointless Bridge																			
(111) Pier Protection										Code										Freeze/Thaw 3 : No Deteriorated concrete; No known problematic history																			
(39) Navigation Vertical Clearance										000.0 M										# Stairs On/Adjacent 0 Stair Owner(s)																			
(116) Vert-lift Bridge Nav Min Vert Clear										M										<b>Accessibility (Needed/Used)</b>																			
(40) Navigation Horizontal Clearance										0000.0 M										P / N Liftbucket N / N Rigging N / N Other																			
																				N / N Ladder N / N Staging																			
																				N / N Boat P / N Traffic Control																			
																				N / N Wader N / N RR Flagperson										Inspection									
																				N / N Inspector 50 P / N Police										Hours: 012									

# National Bridge Element Inspection

BDEPT# **B-01-014**Date **08/22/2023**B.I.N. **4AN**District Bridge Inspection Eng'r **Grant Simpson**Item 8 **B01014-4AN-DOT-NBI**Inspecting Agency **Mass. Highway Dept.**Span Group **1**Team Leader **John Spiezio**Town **Barnstable**Team **Mark Emmons**District **5**

Member(s)

El #	Element Name	Units	Env.	Total Q.	% or Q	State 1	State 2	State 3	State 4
<b>38</b>	<b>Re Concrete Slab</b>	sq feet	2	1,926.740	<input type="checkbox"/> %	1,632.740	294.000		
Notes :									
> 1130	Cracking (RC and Other)	sq feet	2	294.000	<input type="checkbox"/> %		294.000		
Notes :									
> 510	Wearing Surfaces	sq feet	2	1,646.878	<input type="checkbox"/> %	1,367.878	279.000		
Notes :									
> > 3210	Del/Spall/Patch/Pot(Wear Surf)	sq feet	2	100.000	<input type="checkbox"/> %		100.000		
Notes :									
> > 3220	Crack (Wearing Surface)	sq feet	2	179.000	<input type="checkbox"/> %		179.000		
Notes :									
<b>215</b>	<b>Re Conc Abutment</b>	feet	2	88.582	<input type="checkbox"/> %	83.582	5.000		
Notes :									
> 1080	Delamination/Spall/Patched Area	feet	2	5.000	<input type="checkbox"/> %		5.000		
Notes :									
<b>333</b>	<b>Other Bridge Railing</b>	feet	2	111.548	<input type="checkbox"/> %	111.548			
Notes :									

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## STRUCTURES INSPECTION FIELD REPORT

BR. DEPT. NO.

B-01-012

2-DIST

05

B.I.N.

4AP

## ROUTINE INSPECTION

CITY/TOWN <b>BARNSTABLE</b>		8-STRUCTURE NO. <b>B01012-4AP-DOT-NBI</b>		11-Kilo. POINT <b>000.000</b>	41-STATUS <b>A:OPEN</b>	90-ROUTINE INSP. DATE <b>AUG 22, 2023</b>
07-FACILITY CARRIED <b>HWY OAK ST</b>		MEMORIAL NAME/LOCAL NAME		27-YR BUILT <b>1950</b>	106-YR REBUILT <b>0000</b>	YR REHAB'D (NON 106) <b>0000</b>
06-FEATURES INTERSECTED <b>US 6 WB/MID CAPE HWY</b>		26-FUNCTIONAL CLASS <b>Urban Minor Arterial</b>		DIST. BRIDGE INSPECTION ENGINEER <b>G. Simpson</b>		
43-STRUCTURE TYPE <b>107 : Concrete Frame</b>		22-OWNER <b>State Highway Agency</b>	21-MAINTAINER <b>State Highway Agency</b>	TEAM LEADER J. Spiezio		
107-DECK TYPE <b>1 : Concrete Cast-in-Place</b>		WEATHER <b>Cloudy</b>	TEMP. (air) <b>20°C</b>	TEAM MEMBERS <b>M. EMMONS</b>		

<b>ITEM 58</b> <div>7</div> <b>DECK</b> <div>DEF</div> <table border="1"> <tr><td>1. Wearing surface</td><td>6</td><td>S-P</td></tr> <tr><td>2. Deck Condition</td><td>7</td><td>M-P</td></tr> <tr><td>3. Stay in Place Forms</td><td>N</td><td>-</td></tr> <tr><td>4. Curbs</td><td>5</td><td>S-P</td></tr> <tr><td>5. Median</td><td>N</td><td>-</td></tr> <tr><td>6. Sidewalks</td><td>5</td><td>S-P</td></tr> <tr><td>7. Parapets</td><td>7</td><td>M-P</td></tr> <tr><td>8. Railing</td><td>N</td><td>-</td></tr> <tr><td>9. Anti Missile Fence</td><td>N</td><td>-</td></tr> <tr><td>10. Drainage System</td><td>N</td><td>-</td></tr> <tr><td>11. Lighting Standards</td><td>N</td><td>-</td></tr> <tr><td>12. Utilities</td><td>N</td><td>-</td></tr> <tr><td>13. Deck Joints</td><td>N</td><td>-</td></tr> <tr><td>14.</td><td>N</td><td>-</td></tr> <tr><td>15.</td><td>N</td><td>-</td></tr> <tr><td>16.</td><td>N</td><td>-</td></tr> </table> <div> <div>E</div> <div>W</div> </div> <div> <div>CURB REVEAL</div> <div>(In millimeters)</div> <div>190</div> <div>203</div> </div>			1. Wearing surface	6	S-P	2. Deck Condition	7	M-P	3. Stay in Place Forms	N	-	4. Curbs	5	S-P	5. Median	N	-	6. Sidewalks	5	S-P	7. Parapets	7	M-P	8. Railing	N	-	9. Anti Missile Fence	N	-	10. Drainage System	N	-	11. Lighting Standards	N	-	12. Utilities	N	-	13. Deck Joints	N	-	14.	N	-	15.	N	-	16.	N	-	<b>ITEM 59</b> <div>7</div> <b>SUPERSTRUCTURE</b> <div>DEF</div> <table border="1"> <tr><td>1. Stringers</td><td>N</td><td>-</td></tr> <tr><td>2. Floorbeams</td><td>N</td><td>-</td></tr> <tr><td>3. Floor System Bracing</td><td>N</td><td>-</td></tr> <tr><td>4. Girders or Beams</td><td>N</td><td>-</td></tr> <tr><td>5. Trusses - General</td><td>N</td><td>-</td></tr> <tr><td>    a. Upper Chords</td><td>N</td><td>-</td></tr> <tr><td>    b. Lower Chords</td><td>N</td><td>-</td></tr> <tr><td>    c. Web Members</td><td>N</td><td>-</td></tr> <tr><td>    d. Lateral Bracing</td><td>N</td><td>-</td></tr> <tr><td>    e. Sway Bracings</td><td>N</td><td>-</td></tr> <tr><td>    f. Portals</td><td>N</td><td>-</td></tr> <tr><td>    g. End Posts</td><td>N</td><td>-</td></tr> <tr><td>6. Pin &amp; Hangers</td><td>N</td><td>-</td></tr> <tr><td>7. Conn Plt's, Gussets &amp; Angles</td><td>N</td><td>-</td></tr> <tr><td>8. Cover Plates</td><td>N</td><td>-</td></tr> <tr><td>9. Bearing Devices</td><td>N</td><td>-</td></tr> <tr><td>10. Diaphragms/Cross Frames</td><td>N</td><td>-</td></tr> <tr><td>11. Rivets &amp; Bolts</td><td>N</td><td>-</td></tr> <tr><td>12. Welds</td><td>N</td><td>-</td></tr> <tr><td>13. Member Alignment</td><td>6</td><td>M-P</td></tr> <tr><td>14. Paint/Coating</td><td>N</td><td>-</td></tr> <tr><td>15. Concrete Frame</td><td>7</td><td>M-P</td></tr> </table> <div> <div>Year Painted</div> <div>N</div> </div> <div> <div>COLLISION DAMAGE: Please explain</div> <div>None ( ) Minor (X) Moderate ( ) Severe ( )</div> </div> <div> <div>LOAD DEFLECTION: Please explain</div> <div>None (X) Minor ( ) Moderate ( ) Severe ( )</div> </div> <div> <div>LOAD VIBRATION: Please explain</div> <div>None (X) Minor ( ) Moderate ( ) Severe ( )</div> </div> <div> <div>Any Fracture Critical Member: (Y/N)</div> <div>N</div> </div> <div> <div>Any Cracks: (Y/N)</div> <div>N</div> </div>			1. Stringers	N	-	2. Floorbeams	N	-	3. Floor System Bracing	N	-	4. Girders or Beams	N	-	5. Trusses - General	N	-	a. Upper Chords	N	-	b. Lower Chords	N	-	c. Web Members	N	-	d. Lateral Bracing	N	-	e. Sway Bracings	N	-	f. Portals	N	-	g. End Posts	N	-	6. Pin & Hangers	N	-	7. Conn Plt's, Gussets & Angles	N	-	8. Cover Plates	N	-	9. Bearing Devices	N	-	10. Diaphragms/Cross Frames	N	-	11. Rivets & Bolts	N	-	12. Welds	N	-	13. Member Alignment	6	M-P	14. Paint/Coating	N	-	15. Concrete Frame	7	M-P	<b>ITEM 60</b> <div>7</div> <b>SUBSTRUCTURE</b> <div>DEF</div> <table border="1"> <tr><td>1. Abutments</td><td>Dive</td><td>Cur</td><td>7</td><td>-</td></tr> <tr><td>    a. Pedestals</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    b. Bridge Seats</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    c. Backwalls</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    d. Breastwalls</td><td>N</td><td>7</td><td></td><td>M-P</td></tr> <tr><td>    e. Wingwalls</td><td>N</td><td>7</td><td></td><td>M-P</td></tr> <tr><td>    f. Slope Paving/Rip-Rap</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    g. Pointing</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    h. Footings</td><td>N</td><td>H</td><td></td><td>-</td></tr> <tr><td>    i. Piles</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    j. Scour</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    k. Settlement</td><td>N</td><td>7</td><td></td><td>-</td></tr> <tr><td>    l.</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    m.</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>2. Piers or Bents</td><td></td><td></td><td>N</td><td>-</td></tr> <tr><td>    a. Pedestals</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    b. Caps</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    c. Columns</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    d. Stems/Webs/Pierwalls</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    e. Pointing</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    f. Footing</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    g. Piles</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    h. Scour</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    i. Settlement</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    j.</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    k.</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>3. Pile Bents</td><td></td><td></td><td>N</td><td>-</td></tr> <tr><td>    a. Pile Caps</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    b. Piles</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    c. Diagonal Bracing</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    d. Horizontal Bracing</td><td>N</td><td>N</td><td></td><td>-</td></tr> <tr><td>    e. Fasteners</td><td>N</td><td>N</td><td></td><td>-</td></tr> </table> <div> <div>UNDERMINING (Y/N) If YES please explain</div> <div>N</div> </div> <div> <div>COLLISION DAMAGE:</div> <div>None (X) Minor ( ) Moderate ( ) Severe ( )</div> </div> <div> <div>SCOUR: Please explain</div> <div>None (X) Minor ( ) Moderate ( ) Severe ( )</div> </div> <div> <div>I-60 (Dive Report):</div> <div>N</div> <div>I-60 (This Report):</div> <div>7</div> </div> <div> <div>93B-U/W (DIVE) Insp</div> <div>00/00/0000</div> </div>			1. Abutments	Dive	Cur	7	-	a. Pedestals	N	N		-	b. Bridge Seats	N	N		-	c. Backwalls	N	N		-	d. Breastwalls	N	7		M-P	e. Wingwalls	N	7		M-P	f. Slope Paving/Rip-Rap	N	N		-	g. Pointing	N	N		-	h. Footings	N	H		-	i. Piles	N	N		-	j. Scour	N	N		-	k. Settlement	N	7		-	l.	N	N		-	m.	N	N		-	2. Piers or Bents			N	-	a. Pedestals	N	N		-	b. Caps	N	N		-	c. Columns	N	N		-	d. Stems/Webs/Pierwalls	N	N		-	e. Pointing	N	N		-	f. Footing	N	N		-	g. Piles	N	N		-	h. Scour	N	N		-	i. Settlement	N	N		-	j.	N	N		-	k.	N	N		-	3. Pile Bents			N	-	a. Pile Caps	N	N		-	b. Piles	N	N		-	c. Diagonal Bracing	N	N		-	d. Horizontal Bracing	N	N		-	e. Fasteners	N	N		-
1. Wearing surface	6	S-P																																																																																																																																																																																																																																																																																								
2. Deck Condition	7	M-P																																																																																																																																																																																																																																																																																								
3. Stay in Place Forms	N	-																																																																																																																																																																																																																																																																																								
4. Curbs	5	S-P																																																																																																																																																																																																																																																																																								
5. Median	N	-																																																																																																																																																																																																																																																																																								
6. Sidewalks	5	S-P																																																																																																																																																																																																																																																																																								
7. Parapets	7	M-P																																																																																																																																																																																																																																																																																								
8. Railing	N	-																																																																																																																																																																																																																																																																																								
9. Anti Missile Fence	N	-																																																																																																																																																																																																																																																																																								
10. Drainage System	N	-																																																																																																																																																																																																																																																																																								
11. Lighting Standards	N	-																																																																																																																																																																																																																																																																																								
12. Utilities	N	-																																																																																																																																																																																																																																																																																								
13. Deck Joints	N	-																																																																																																																																																																																																																																																																																								
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1. Stringers	N	-																																																																																																																																																																																																																																																																																								
2. Floorbeams	N	-																																																																																																																																																																																																																																																																																								
3. Floor System Bracing	N	-																																																																																																																																																																																																																																																																																								
4. Girders or Beams	N	-																																																																																																																																																																																																																																																																																								
5. Trusses - General	N	-																																																																																																																																																																																																																																																																																								
a. Upper Chords	N	-																																																																																																																																																																																																																																																																																								
b. Lower Chords	N	-																																																																																																																																																																																																																																																																																								
c. Web Members	N	-																																																																																																																																																																																																																																																																																								
d. Lateral Bracing	N	-																																																																																																																																																																																																																																																																																								
e. Sway Bracings	N	-																																																																																																																																																																																																																																																																																								
f. Portals	N	-																																																																																																																																																																																																																																																																																								
g. End Posts	N	-																																																																																																																																																																																																																																																																																								
6. Pin & Hangers	N	-																																																																																																																																																																																																																																																																																								
7. Conn Plt's, Gussets & Angles	N	-																																																																																																																																																																																																																																																																																								
8. Cover Plates	N	-																																																																																																																																																																																																																																																																																								
9. Bearing Devices	N	-																																																																																																																																																																																																																																																																																								
10. Diaphragms/Cross Frames	N	-																																																																																																																																																																																																																																																																																								
11. Rivets & Bolts	N	-																																																																																																																																																																																																																																																																																								
12. Welds	N	-																																																																																																																																																																																																																																																																																								
13. Member Alignment	6	M-P																																																																																																																																																																																																																																																																																								
14. Paint/Coating	N	-																																																																																																																																																																																																																																																																																								
15. Concrete Frame	7	M-P																																																																																																																																																																																																																																																																																								
1. Abutments	Dive	Cur	7	-																																																																																																																																																																																																																																																																																						
a. Pedestals	N	N		-																																																																																																																																																																																																																																																																																						
b. Bridge Seats	N	N		-																																																																																																																																																																																																																																																																																						
c. Backwalls	N	N		-																																																																																																																																																																																																																																																																																						
d. Breastwalls	N	7		M-P																																																																																																																																																																																																																																																																																						
e. Wingwalls	N	7		M-P																																																																																																																																																																																																																																																																																						
f. Slope Paving/Rip-Rap	N	N		-																																																																																																																																																																																																																																																																																						
g. Pointing	N	N		-																																																																																																																																																																																																																																																																																						
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b. Caps	N	N		-																																																																																																																																																																																																																																																																																						
c. Columns	N	N		-																																																																																																																																																																																																																																																																																						
d. Stems/Webs/Pierwalls	N	N		-																																																																																																																																																																																																																																																																																						
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c. Diagonal Bracing	N	N		-																																																																																																																																																																																																																																																																																						
d. Horizontal Bracing	N	N		-																																																																																																																																																																																																																																																																																						
e. Fasteners	N	N		-																																																																																																																																																																																																																																																																																						

X=UNKNOWN

N=NOT APPLICABLE H=HIDDEN/INACCESSIBLE

R=REMOVED

<b>CITY/TOWN</b> <b>BARNSTABLE</b>	<b>B.I.N.</b> <b>4AP</b>	<b>BR. DEPT. NO.</b> <b>B-01-012</b>	<b>8.-STRUCTURE NO.</b> <b>B01012-4AP-DOT-NBI</b>	<b>INSPECTION DATE</b> <b>AUG 22, 2023</b>
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<b>ITEM 61</b> <b>CHANNEL &amp; CHANNEL PROTECTION</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th></th> <th>Dive</th> <th>Cur</th> <th>DEF</th> </tr> </thead> <tbody> <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> </tbody> </table> <div style="margin-top: 10px;"> <b>STREAM FLOW VELOCITY:</b>  Tidal ( ) High ( ) Moderate ( ) Low ( ) None (X) </div> <div style="margin-top: 10px;"> <b>ITEM 61 (Dive Report):</b> <input type="checkbox"/> N <b>ITEM 61 (This Report):</b> <input type="checkbox"/> N </div> <div style="margin-top: 10px;"> <b>93b-U/W INSP. DATE:</b> <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	-													<div style="border: 1px solid black; padding: 2px; width: 30px; margin: 0 auto;">N</div>	<b>ITEM 36 TRAFFIC SAFETY</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th></th> <th>36</th> <th>COND</th> <th>DEF</th> </tr> </thead> <tbody> <tr><td>A. Bridge Railing</td><td>0</td><td>7</td><td>M-P</td></tr> <tr><td>B. Transitions</td><td>0</td><td>7</td><td>M-P</td></tr> <tr><td>C. Approach Guardrail</td><td>0</td><td>6</td><td>M-P</td></tr> <tr><td>D. Approach Guardrail Ends</td><td>0</td><td>7</td><td>M-P</td></tr> </tbody> </table> <div style="margin-top: 5px;"> <b>WEIGHT POSTING</b> <span style="float: right;">Not Applicable <input checked="" type="checkbox"/> X</span> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th></th> <th>H</th> <th>3</th> <th>3S2</th> <th>Single</th> </tr> </thead> <tbody> <tr> <td>Actual Posting</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> </tr> <tr> <td>Recommended Posting</td> <td>N</td> <td>N</td> <td>N</td> <td>N</td> </tr> </tbody> </table> <div style="margin-top: 5px;"> <b>Waived Date:</b> <input type="text" value="00/00/0000"/> <b>EJDMT Date:</b> <input type="text" value="00/00/0000"/> </div> <div style="margin-top: 5px;"> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">At bridge</th> <th colspan="2">Other Advance</th> </tr> <tr> <th>N</th> <th>S</th> <th>N</th> <th>S</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> <td style="text-align: center;">/</td> </tr> </tbody> </table> </div> </div> <div style="margin-top: 5px;"> <b>Signs In Place</b>  (Y=Yes, N=No, NR=Not Required)  <b>Legibility/Visibility</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th colspan="2">At bridge</th> <th colspan="2">Advance</th> </tr> <tr> <th>E</th> <th>W</th> <th>E</th> <th>W</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">NR</td> <td style="text-align: center;">Y</td> <td style="text-align: center;">NR</td> <td style="text-align: center;">Y</td> </tr> <tr> <td style="text-align: center;">/</td> <td style="text-align: center;">7</td> <td style="text-align: center;">/</td> <td style="text-align: center;">5</td> </tr> </tbody> </table> </div>		36	COND	DEF	A. Bridge Railing	0	7	M-P	B. Transitions	0	7	M-P	C. Approach Guardrail	0	6	M-P	D. Approach Guardrail Ends	0	7	M-P		H	3	3S2	Single	Actual Posting	N	N	N	N	Recommended Posting	N	N	N	N	At bridge		Other Advance		N	S	N	S	/	/	/	/	At bridge		Advance		E	W	E	W	NR	Y	NR	Y	/	7	/	5	<b>ACCESSIBILITY (Y/N/P)</b> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th></th> <th>Needed</th> <th>Used</th> </tr> </thead> <tbody> <tr><td>Lift Bucket</td><td>P</td><td>N</td></tr> <tr><td>Ladder</td><td>P</td><td>N</td></tr> <tr><td>Boat</td><td>N</td><td>N</td></tr> <tr><td>Waders</td><td>N</td><td>N</td></tr> <tr><td>Inspector 50</td><td>N</td><td>N</td></tr> <tr><td>Rigging</td><td>N</td><td>N</td></tr> <tr><td>Staging</td><td>N</td><td>N</td></tr> <tr><td>Traffic Control</td><td>P</td><td>N</td></tr> <tr><td>RR Flagger</td><td>N</td><td>N</td></tr> <tr><td>Police</td><td>P</td><td>N</td></tr> <tr><td>Other:</td><td> </td><td> </td></tr> <tr><td> </td><td>N</td><td>N</td></tr> </tbody> </table> <div style="margin-top: 5px;"> <b>TOTAL HOURS</b> <span style="float: right;">16</span> </div> <div style="margin-top: 5px;"> <b>PLANS (Y/N):</b> <input type="checkbox"/> Y </div> <div style="margin-top: 5px;"> <b>(V.C.R.) (Y/N):</b> <input type="checkbox"/> N </div> <div style="margin-top: 5px;"> <b>TAPE#:</b> _____ </div> <div style="margin-top: 5px;"> <b>List of field tests performed:</b>  Visual and Tactile. </div>		Needed	Used	Lift Bucket	P	N	Ladder	P	N	Boat	N	N	Waders	N	N	Inspector 50	N	N	Rigging	N	N	Staging	N	N	Traffic Control	P	N	RR Flagger	N	N	Police	P	N	Other:				N	N
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<b>RATING</b> Rating Report (Y/N): <input type="checkbox"/> Y Date: <input type="text" value="08/01/2010"/> Inspection data at time of existing rating I 58: 7 I 59: 7 I 60: 7 Date :08/27/2009	<div style="margin-bottom: 10px;"> <b>Recommend for Rating or Rerating (Y/N):</b> <input type="checkbox"/> N </div> <div style="margin-bottom: 10px;"> <b>REASON:</b> _____ </div> <div style="margin-bottom: 10px;"> <b>If YES please give priority:</b>  HIGH ( ) MEDIUM ( ) LOW ( ) </div>
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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	
<b>DEFICIENCY:</b>	A defect in a structure that requires corrective action.
<b>CATEGORIES OF DEFICIENCIES:</b>	
<b>M= Minor Deficiency</b>	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.
<b>S= Severe/Major Deficiency</b>	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.
<b>C-S= Critical Structural Deficiency</b>	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.
<b>C-H= Critical Hazard Deficiency</b>	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.
<b>URGENCY OF REPAIR:</b>	
<b>I = Immediate-</b>	[Inspector(s) immediately contact District Bridge Inspection Engineer (DBIE) to report the Deficiency and to receive further instruction from him/her].
<b>A = ASAP-</b>	[Action/Repair should be initiated by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) upon receipt of the Inspection Report].
<b>P = Prioritize-</b>	[Shall be prioritized by District Maintenance Engineer or the Responsible Party (if not a State owned bridge) and repairs made when funds and/or manpower is available].

CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AP</b>	BR. DEPT. NO. <b>B-01-012</b>	8.-STRUCTURE NO. <b>B01012-4AP-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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**REMARKS**

**BRIDGE ORIENTATION**  
Orientation as follows:  

- Bridge carries Oak Street intersecting US WB with north/south orientation, see sketch 1.

**GENERAL REMARKS**  
Vertical Clearances  
 At the time of this inspection, there were five WB gated height posting signs labeled 13'-9", two at bridge, two advanced, and one of two (One missing) east of exit 68 between Mile Markers 68.4 and 68.6, see photos 1, 2 and sketch 2. Minimum vertical clearance is 14'-1" along the high speed shoulder line below the SW sector, see sketch 1. The WB gated advanced and at bridge height posting signs (13'-9") are in place and legible, however, the WB advanced bridge posting sign is obscured with vegetation, see photo 1 for example.

Access  
 Vehicle staging at the SE, topside inspected from the safety of the sidewalks, underside inspected from behind the guardrail system via NW embankment.

**ITEM 58 - DECK**

**Item 58.1 - Wearing surface**  
 Bituminous wearing surface deficiencies as follows:  

- Wide spread densely spaced unsealed/sealed longitudinal, transverse and irregular cracks  $\leq 1/2"$ W throughout, predominantly FL along the NB lane, see photos 3 and 4.
- Impending potholes, predominantly NB lane and near the abutments.
- S/P - Moderate to severe rutting in the wheel paths  $\leq 2"$ D, see photos 3 and 4.
- Debris/vegetation impaction FL along both curb lines.

**Item 58.2 - Deck Condition**  
 See Item 59.15 - Concrete Frame.

**Item 58.4 - Curbs**  
 Both curbs display the following deficiencies :  

- On average, FL x 1"W separation between concrete sidewalk/curbs with heavy vegetation/debris impaction throughout, see photos 3 and 4 for typical overviews, worst separation at the SW = 1-3/4", see photo 5.

**Item 58.6 - Sidewalks**  
 Both sidewalks deficiencies as follows :  

- Scattered  $\leq 1/8"$ W transverse cracks, see photos 3 - 7.
- Light scale/spalling  $\leq 1/2"$ D, minor delaminations with heavy vegetation impaction throughout, see photos 3 - 7 for overviews.

**Item 58.7 - Parapets**  
 Solid concrete barrier with slabs of New England Pink Granite affixed along the exterior vertical faces and affixed along the tops (Cap Stones), see photos 4 - 7 and 9, 10 and 12 for typical overviews.  
 Deficiencies as follows:  

- NW endpost is missing a plaque, see photo 7.
- Wide spread separation/voids in mortar joints, predominantly along the tops (Cap Stones), however, slabs

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**REMARKS**

of New England Pink Granite resonate stable when sounded, see photos 4 - 7, 9 and 10.

- Solid concrete sections along both fascias exhibit  $\leq$ FL moderate - severe densely spaced  $\leq 1/16"$ W longitudinal cracking with some active efflorescence (Ends), see photos 9, 10 and 12 for exterior views.

**APPROACHES**

**Approaches a - Appr. pavement condition**  
Both approaches have sealed saw cuts over the abutments. Deficiencies as follows:

**SOUTH APPROACH**

- Wide spread densely spaced unsealed/sealed longitudinal, transverse and irregular cracks  $\leq 1/2"$ W throughout, predominantly over the abutment and NB lane, see photo 6.
- Over the abutment, curb to curb saw and sealed cuts each exhibiting some separation  $\leq 1/2"$ W in the shoulders with some debris/vegetation impaction, see photos 5 and 6 for an examples.
- Severe rutting in the wheel paths that continues onto the bridge  $\leq 2"$ D.
- Debris/vegetation along both edges of the roadway.
- NBL, FL x  $\leq 3'$ W longitudinal asphalt patch and two large ( $\leq 4'$  diameter patches beyond bridge limits), see photo 6.

**NORTH APPROACH**

- Wide spread moderately spaced unsealed/sealed longitudinal, transverse and irregular cracks  $\leq 1/2"$ W throughout, predominantly over the abutment, see photo 7.
- Over the abutment, curb to curb saw and sealed cuts each exhibiting some separation  $\leq 1/2"$ W in the shoulders with some debris/vegetation impaction, see photos 4 and 7.
- Severe rutting in the wheel paths that continues onto the bridge 2"D - 4"D, see photo 7.
- Debris/vegetation along both edges of the roadway.
- Over the abutment, curb to curb saw and sealed cuts each exhibiting some separation  $\leq 1/2"$ W in the shoulders with some debris impaction, see photo 6 for an example.

**Approaches b - Appr. Roadway Settlement**  
**S/A, Both approaches exhibit rutting in the wheel paths (Settlement) which continues onto the bridge. Most notable area is at the south approach in the NB lane, see photo 6.**

**Approaches c - Appr. Sidewalk Settlement**  
Deficiencies as follows:

- All approach sidewalks (SW worst) have settlement  $\leq 4"$ D with vegetation/debris impaction, see photos 4 - 7.
- At the SW approach (Granite) curb, FH x FW x FP diagonal crack, see photo 5 for an overview.



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**REMARKS**

**ITEM 59 - SUPERSTRUCTURE**

**Item 59.13 - Member Alignment**  
In general, the top of the wingwalls/approach parapets exhibit settlement/rotation in relation to the bridge parapets. Misalignments were field measured along the tops, interior vertical faces of the cap granite and concrete portion below, see photo 5 and sketch 3 for location/method of measurements and chart 1 for results of field measurements.

**Item 59.15 - Concrete Frame**  
Condition based in conjunction with item 60.1.d - Breastwalls, rigid frame displayed deficiencies as follows:

- Isolated  $\leq 5'L \times \leq 1/2"D$  cover spall with exposed/corroded rebar over the north guardrail/breakdown lane, see photo 8.
- Exterior faces exhibits scattered hairline map cracking with light efflorescence and leakage, see photos 9, 10 and 12 for examples.

Also see SuperStructure Collision Notes.

**SuperStructure Collision Notes**  
Apex of East edge of the frame, two entry spalls each over both lanes  $\leq 8"L \times \leq 6"W \times \leq 2"D$ , see photo 12. Both entry spalls exhibit associated scrapes FL x 4"W along the rigid frame soffit.

**ITEM 60 - SUBSTRUCTURE**

**Item 60.1 - Abutments**  
**Item 60.1.d - Breastwalls**  
Deficiencies as follows:

- Four exterior corners, leakage staining and vegetation encroachment, see photos 9 and 10 as examples and overview.
- Top SE corner of the rigid frame leg, vertical spall  $\leq 2'H \times \leq 6"W \times \leq 1/2"D$  with adjacent (Below) vertical delamination (Stable)  $\leq 5'H \times \leq 1'W$ , see photo 11.
- Minor spall at the NW.

**Item 60.1.e - Wingwalls**  
Minor deficiencies as follows :

- Leakage staining, isolated active leakage at the SE corner construction joint.
- SW corner, 50 square feet of densely spaced  $\leq 1/16"W$  map cracking with efflorescence leakage.

**TRAFFIC SAFETY**

**Item 36a - Bridge Railing**  
Deficiencies as follows:

- Bridge railing consist of C.I.P. R/C with New England pink granite facade & cap, non-standard. Also see Item 58.7 - Parapets for condition comments.

**Item 36b - Transitions**  
Deficiencies as follows:

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**REMARKS**

- Transitions at the south are not applicable, continue to bridge B01014 (4AN), see photo 6.
- North steel W beam transitions are smoothly/firmly attached, nested/lapped correctly, however, irregular post spacings, missing collapsible pins and steel posts affixed with steel offset blocks are all non-standard, see photo 7 as example and overview.

**Item 36c - Approach Guardrail**  
Deficiencies as follows:

- The approach rail at the south is not applicable, continue to bridge B01014 (4AN), see photo 6.
- North approach rail is steel W-beam panels, however, steel posts affixed with steel offset blocks with panels spliced on posts, non-standard.
- NE approach guardrail has minor FL collision damage (Scrapes/Dents/Tears) along the panels, see photo 13.

**Item 36d - Approach Guardrail Ends**  
The terminals at the south end are not applicable, see photo 6.  
The north terminals are buried, non-standard, see photo 13.

**Sketch / Chart / Photo Log**

Sketch 1 : Plan view showing low clearance.

Sketch 2 : Locus Plan with existing clearance posting signs.

Sketch 3 : Points of measurement at bridge and approach parapet interface. Approach parapet in the foreground.

Chart 1 : Field measurements at the four interfaces of the approach and bridge parapets.

Photo 1 : WB advanced height posting signs, advanced sign partially obscured with vegetation.

Photo 2 : Looking west between Mile Markers 68.4 & 68.6 south of exit 68, height posting sign obscured with vegetation and a sign is missing.

Photo 3 : Looking NW from the SE over wearing surface, severe rutting in the wheel paths, sealed/unsealed cracks and isolated/random asphalt filled potholes.

Photo 4 : Looking SE from the NW over wearing surface, severe rutting in the wheel paths, sealed/unsealed cracks and NW approach sidewalk settlement.

Photo 5 : Looking NW at SW corner, parapet field measurements and sidewalk/curb settlement.

Photo 6 : Looking south over north approach pavement, severe rutting in the wheel paths, sealed/unsealed cracks and SE sidewalk/curb settlement.

Photo 7 : Looking NW over north approach pavement, severe rutting in the wheel paths, sealed/unsealed cracks and NE sidewalk/curb settlement (Ponding).

Photo 8 : Looking north, general underside.

Photo 9 : East elevation.

Photo 10 : West elevation.

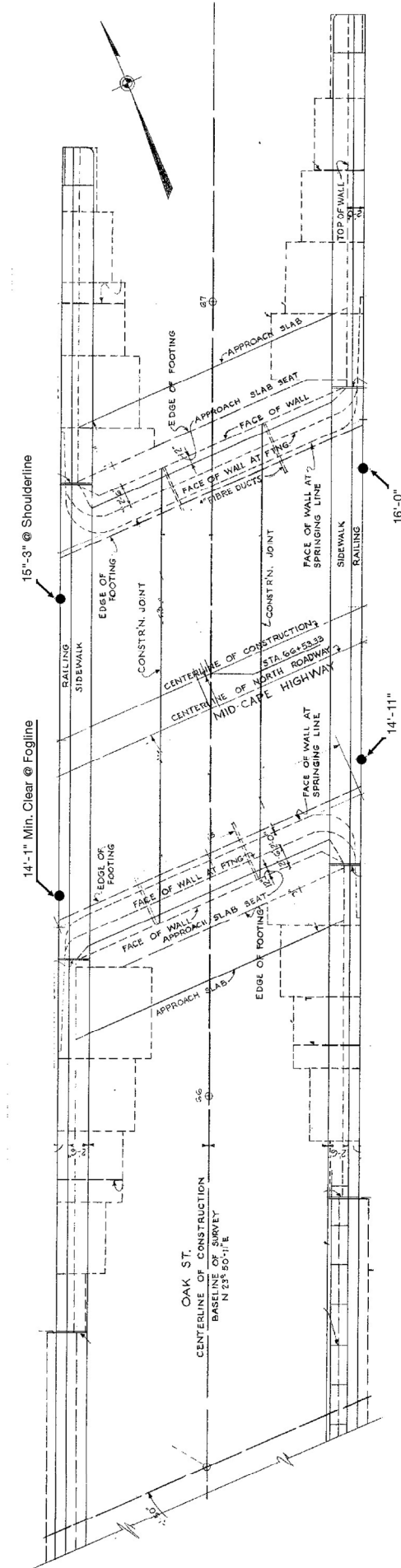
Photo 11 : Looking west at SE corner of rigid frame leg, spall at the top and delamination below. Vegetation encroaching.

Photo 12 : Looking west at east edge of rigid frame soffit, two entry spalls and FL scrapes over both lanes.

Photo 13 : Looking south at NE approach guardrail, panels damaged FL.

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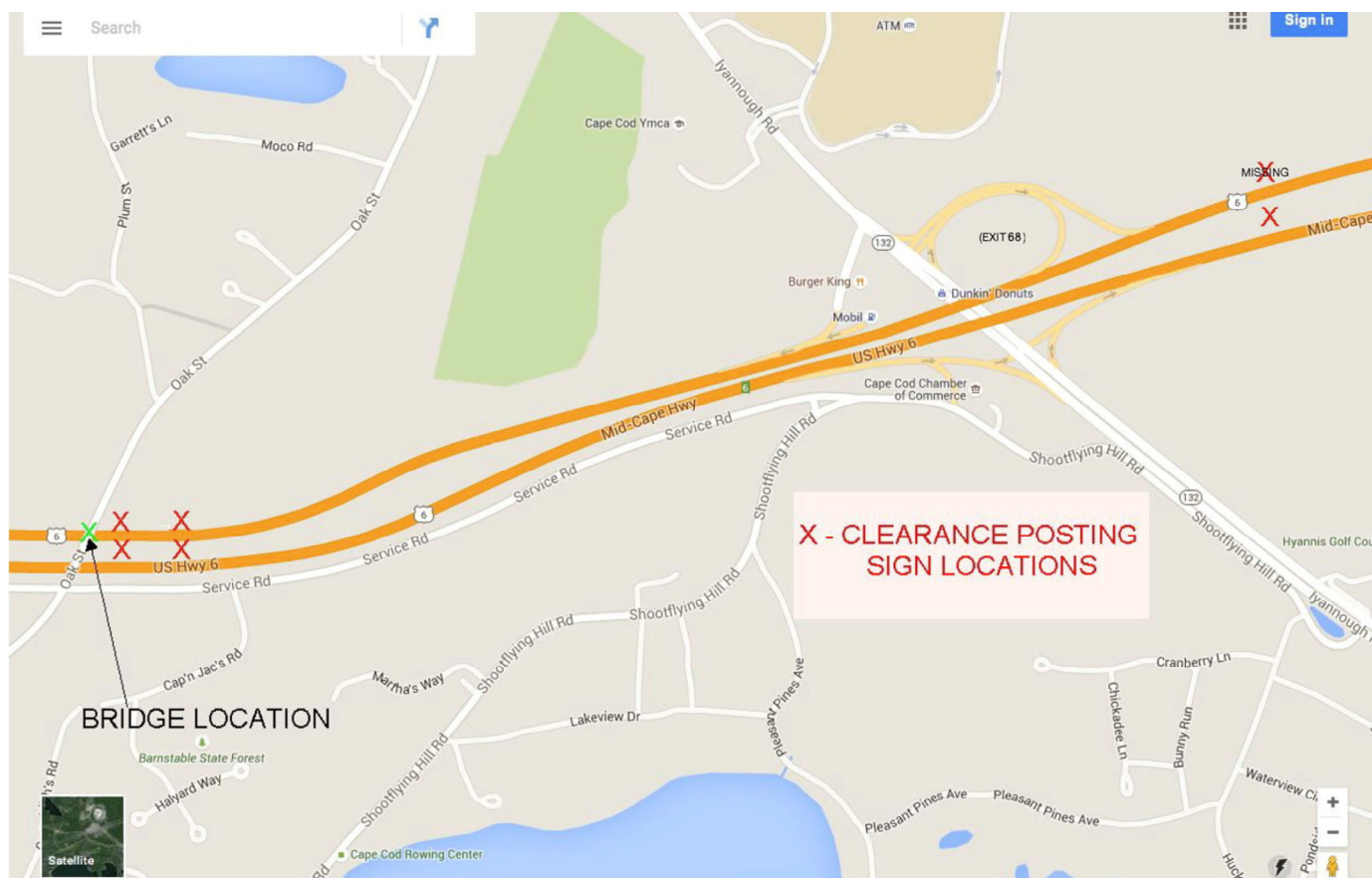
SKETCHES



Sketch 1: Plan view showing low clearance.

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## SKETCHES



**Sketch 2: Locus Plan with existing clearance posting signs.**

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**SKETCHES**

**Sketch 3: Points of measurement at bridge and approach parapet interface. Approach parapet in the foreground.**



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BARNSTABLE	4AP	B-01-012	B01012-4AP-DOT-NBI	AUG 22, 2023

## CHARTS

	<u>Top face of granite</u>	<u>Interior face along granite</u>	<u>Interior face along concrete</u>
NW	0" Differential	7/8" Differential	13/16" Differential
SW	0" Differential	1 3/8" Differential	1 1/8" Differential
NE	1/4" Differential	5/8" Differential	1" Differential
SE	1/4" Differential	3/4" Differential	3/4" Differential

Chart 1: Field measurements at the four interfaces of the approach and bridge parapets.

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**PHOTOS**

**Photo 1:** WB advanced height posting signs, advanced sign partially obscured with vegetation.

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## PHOTOS



**Photo 2:** Looking west between Mile Markers 68.4 & 68.6 south of exit 68, height posting sign obscured with vegetation and a sign is missing.



**Photo 3:** Looking NW from the SE over wearing surface, severe rutting in the wheel paths, sealed/unsealed cracks and isolated/random asphalt filled potholes.



CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AP</b>	BR. DEPT. NO. <b>B-01-012</b>	8.-STRUCTURE NO. <b>B01012-4AP-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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## PHOTOS



**Photo 4:** Looking SE from the NW over wearing surface, severe rutting in the wheel paths, sealed/unsealed cracks and NW approach sidewalk settlement.



**Photo 5:** Looking NW at SW corner, parapet field measurements and sidewalk/curb settlement.



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## PHOTOS



**Photo 6:** Looking south over north approach pavement, severe rutting in the wheel paths, sealed/unsealed cracks and SE sidewalk/curb settlement.



**Photo 7:** Looking NW over north approach pavement, severe rutting in the wheel paths, sealed/unsealed cracks and NE sidewalk/curb settlement (Ponding).

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## PHOTOS



**Photo 8:** Looking north, general underside.



**Photo 9:** East elevation.



CITY/TOWN <b>BARNSTABLE</b>	B.I.N. <b>4AP</b>	BR. DEPT. NO. <b>B-01-012</b>	8.-STRUCTURE NO. <b>B01012-4AP-DOT-NBI</b>	INSPECTION DATE <b>AUG 22, 2023</b>
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**PHOTOS**

**Photo 10: West elevation.**



**Photo 11: Looking west at SE corner of rigid frame leg, spall at the top and delamination below. Vegetation encroaching.**

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**PHOTOS**

**Photo 12:** Looking west at east edge of rigid frame soffit, two entry spalls and FL scrapes over both lanes.



**Photo 13:** Looking south at NE approach guardrail, panels damaged FL.



Report Date: November 20, 2024

State Information										Classification										Code																			
<b>BDEPT#= 801012</b>										Agency Br.No.										(112) NBIS Bridge Length										Y									
<b>Town= Barnstable</b>										L.O. MHD										(104) Highway System										N									
<b>B.I.N= 4AP</b>										AASHTO= 072.5										(26) Functional Class - Urban Minor Arterial										16									
RANK= 3019 H.I.= 98.1 %										FHWA Select List= Y (6/21/2017)										(100) Defense Highway										0									
(8) Structure Number										B010124APDOTNBI										(101) Parallel Structure										N									
(5) Inventory Route										151000000										(102) Direction of Traffic - 2-way traffic										2									
(2) State Highway Department District										05										(103) Temporary Structure										N									
(3) County Code 001 (4) Place code										03635										(105) Federal Lands Highways										0									
(6) Features Intersected										<b>US 6 WB/MID CAPE HWY</b>										(110) Designated National Network										N									
(7) Facility Carried										<b>HWY OAK ST</b>										(20) Toll - On free road										3									
(9) Location										ADJCENT TO JCT SERVICE RD										(21) Maintain - State Highway Agency										01									
(11) Kilometerpoint										0000.000										(22) Owner - State Highway Agency										01									
(12) Base Highway Network										N										(37) Historical Significance built after 1949 presumed to be not eligi										Z									
(13) LRS Inventory Route & Subroute										000000000000										<b>Condition</b>										<b>Code</b>									
(16) Latitude										41 DEG 41 MIN 04.26 SEC										(58) Deck										7									
(17) Longitude										70 DEG 21 MIN 12.65 SEC										(59) Superstructure										7									
(98) Border Bridge State Code										Share %										(60) Substructure										7									
(99) Border Bridge Structure No. #																				(61) Channel & Channel Protection										N									
																				(62) Culverts										N									
<b>Structure Type and Material</b>																				<b>Load Rating and Posting</b>										<b>Code</b>									
(43) Structure Type Main: Concrete										Code 107										(31) Design Load - H 20=M 18										4									
Frame										Jointless bridge type: RIGID FRAME										(63) Operating Rating Method - Load Factor (LF)										1									
(44) Structure Type Appr: Other										Code 000										(64) Operating Rating										50.1									
(45) Number of spans in main unit										001										(65) Inventory Rating Method - Load Factor (LF)										1									
(46) Number of approach spans										0000										(66) Inventory Rating										30.0									
(107) Deck Structure Type - Concrete Cast-in-Place										Code 1										(70) Bridge Posting										5									
(108) Wearing Surface / Protective System:																				(41) Structure - Open										A									
A) Type of wearing surface - Bituminous										Code 6										<b>Appraisal</b>										<b>Code</b>									
B) Type of membrane - Built-up										Code 1										(67) Structural Evaluation										7									
C) Type of deck protection - None										Code 0										(68) Deck Geometry										3									
																				(69) Underclearances, vert. and horiz.										4									
																				(71) Waterway adequacy										N									
																				(72) Approach Roadway Alignment										8									
(27) Year Built										1950										(36) Traffic Safety Features										0 0 0 0									
(106) Year Reconstructed										0000										(113) Scour Critical Bridges										N									
(42) Type of Service: On - Highway																				<b>Inspections</b>																			
Under - Highway										Code 11										(90) Inspection Date 08/22/23										(91) Frequency 24 MO									
(28) Lanes: On Structure 02 Under structure										02										(92) Critical Feature Inspection:										(93) CFI DATE									
(29) Average Daily Traffic										006071										(A) Fracture Critical Detail N 00 MO A)										00/00/00									
(30) Year of ADT 2023 (109) Truck ADT										06 %										(B) Underwater Inspection N 00 MO B)										00/00/00									
(19) Bypass, detour length										006 KM										(C) Other Special Inspection N 00 MO C)										00/00/00									
																				(*) Other Inspection ( ) N 00 MO *)										00/00/00									
																				(*) Closed Bridge N 00 MO *)										00/00/00									
																				(*) UW Special Inspection N 00 MO *)										00/00/00									
																				(*) Damage Inspection MO *)										05/20/14									
<b>Geometric Data</b>																				<b>Rating Loads</b>																			
(48) Length of maximum span										0014.3 M										Report Date 08/01/10										H20									
(49) Structure Length										00016.8 M										Type 3										Type 3S2									
(50) Curb or sidewalk: Left 00.8 M Right 00.8 M																				Operating										66.0									
(51) Bridge Roadway Width Curb to Curb										009.1 M										Inventory										22.0									
(52) Deck Width Out to Out										011.5 M																				36.0									
(32) Approach Roadway Width (w/shoulders)										009.1 M																				57.0									
(33) Bridge Median - No median										Code 0																				33.0									
(34) Skew 24 DEG (35) Structure Flared										N										<b>Field Posting</b>																			
(10) Inventory Route MIN Vert Clear										99.99 M										Status LEGAL										Posting Date 11/18/10									
(47) Inventory Route Total Horiz Clear										09.1 M										2 Axle										3 Axle									
(53) Min Vert Clear Over Bridge Rdwy										99.99 M										5 Axle										Single									
(54) Min Vert Underclear ref H										04.29 M										Actual																			
(55) Min Lat Underclear RT ref H										01.5 M										Recommended																			
(56) Min Lat Underclear LT										01.5 M										Missing Signs N																			
																				<b>Misc.</b>																			
<b>Navigation Data</b>																				Bridge Name																			
(38) Navigation Control - Not applicable, no waterway										Code N										N Anti-missile fence N Acrow Panel Y Jointless Bridge																			
(111) Pier Protection										Code										Freeze/Thaw 3 : No Deteriorated concrete; No known problematic history																			
(39) Navigation Vertical Clearance										000.0 M										# Stairs On/Adjacent 0 Stair Owner(s)																			
(116) Vert-lift Bridge Nav Min Vert Clear										M										<b>Accessibility (Needed/Used)</b>																			
(40) Navigation Horizontal Clearance										0000.0 M										P / N Liftbucket N / N Rigging										N / N Other									
																				P / N Ladder N / N Staging																			
																				N / N Boat P / N Traffic Control																			
																				N / N Wader N / N RR Flagperson										Inspection									
																				N / N Inspector 50 P / N Police										Hours: 016									

# National Bridge Element Inspection

BDEPT# **B-01-012**Date **08/22/2023**B.I.N. **4AP**District Bridge Inspection Eng'r **Grant Simpson**Item 8 **B01012-4AP-DOT-NBI**Inspecting Agency **Mass. Highway Dept.**Span Group **1**Team Leader **John Spiezio**Town **Barnstable**Team **Mark Emmons**District **5**

Member(s)

El #	Element Name	Units	Env.	Total Q.	% or Q	State 1	State 2	State 3	State 4
<b>38</b>	<b>Re Concrete Slab</b>	sq feet	2	2,067.000	<input type="checkbox"/> %	1,926.000	141.000		
Notes : $\Delta BL * O-O = 54.9 * 37.66 = 2067.5 \text{ sq ft}$									
> 1080	Delamination/Spall/Patched Area	sq feet	2	5.000	<input type="checkbox"/> %		5.000		
Notes :									
> 1120	Efflorescence/Rust Staining	sq feet	2	136.000	<input type="checkbox"/> %		136.000		
Notes :									
> 7000	Damage	sq feet	2	5.000	<input type="checkbox"/> %		5.000		
Notes :									
> 510	Wearing Surfaces	sq feet	2	1,647.000	<input type="checkbox"/> %	847.000	400.000	400.000	
Notes : $\Delta \text{Quantity: Bridge Length} * \text{curb to curb} = 54.9 * 30 = 1647 \text{ sq ft}$									
> > 3210	Del/Spall/Patch/Pot(Wear Surf)	sq feet	2	400.000	<input type="checkbox"/> %		400.000		
Notes :									
> > 3220	Crack (Wearing Surface)	sq feet	2	400.000	<input type="checkbox"/> %			400.000	
Notes :									
<b>215</b>	<b>Re Conc Abutment</b>	feet	2	88.582	<input type="checkbox"/> %	84.582	4.000		
Notes :									
> 1080	Delamination/Spall/Patched Area	feet	2	4.000	<input type="checkbox"/> %		4.000		
Notes :									
<b>333</b>	<b>Other Bridge Railing</b>	feet	2	111.548	<input type="checkbox"/> %	111.548			
Notes :									

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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: BARNSTABLEProject File Number: 613202Contract Number: 129788Project Description: Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)

All AutoCAD files are provided solely as a courtesy to facilitate public access to information. MassDOT attempts to provide current and accurate information but cannot guarantee so. MassDOT provides such documents, files or other data "as is" without any warranty of any kind, either expressed or implied, including but not limited to, accuracy, reliability, omissions, completeness and currentness. The Commonwealth of Massachusetts and its Consultants shall not be liable for any claim for damages, including lost profits or other consequential, exemplary, incidental, indirect or special damages, relating in any way to the documents, files or other data accessible from this file, including, but not limited to, claims arising out of or related to electronic access or transmission of data or viruses. Because data stored on electronic media can deteriorate undetected or be modified without our knowledge, MassDOT cannot be held liable for its completeness or correctness. MassDOT makes no representation as to the compatibility of these files beyond the version of the stated CAD software.

By signing this form, I agree that it shall be my responsibility to reconcile this electronic data with the conformed contract documents, and that only the conformed contract documents shall be regarded as legal documents for this Project. I understand that this authorization does not give me the right to distribute the files. I agree to the terms above and wish to receive the AutoCAD files.

This signed form shall be emailed to the Highway Design Engineer at the MassDOT -Highway Division at the following email address:

[DOTHighwayDesign@dot.state.ma.us](mailto:DOTHighwayDesign@dot.state.ma.us)

Attn: AutoCAD Files

Name of person requesting AutoCAD files: \_\_\_\_\_

Affiliation/Company: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone number: \_\_\_\_\_

Email address: \_\_\_\_\_

Signature/Date: \_\_\_\_\_

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DOCUMENT A00832

## **Massachusetts Office of Coastal Zone Management (CZM)**

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THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS  
OFFICE OF COASTAL ZONE MANAGEMENT  
100 Cambridge Street, Suite 900, Boston, MA 02114 • (617) 626-1200

December 12, 2024

Lily Collins  
Wetlands and Water Resources Co-Op  
MassDOT - Highway Division  
10 Park Plaza  
Boston, MA 02116

RE: Federal Consistency Certification: Bridge Preservation Oak Street Over Route 6;  
Barnstable

Dear Ms. Collins:

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the proposed project which consists of bridge preservation activities at Oak Street over Route 6 in Barnstable. These activities include the following:

- The project consists of removing and disposing of the granite curb, excavating the existing bridge barrier and safety walk, formation and pouring of the new barrier and safety fence, installation of Highway Guardrail Transition, removal of the temporary barrier, pavement milling, and installation of new pavement markings.

Although the activities associated with this project are located within the defined Massachusetts Coastal Zone, they fall below the thresholds that CZM generally uses to require review under our federal consistency provisions. Consequently, a formal decision from this office regarding consistency with our enforceable program policies is not necessary. Any federal licenses or permits for the work performed may be subject to CZM's federal consistency review. It is incumbent upon the proponent to notify CZM, submit an explanation of the nature of the work, and submit necessary data and information. CZM will use this information to determine if further federal consistency review is required.

Thank you for submitting the information to CZM. If you have any questions regarding our review process, feel free to contact me at [sean.duffey@mass.gov](mailto:sean.duffey@mass.gov).

Sincerely,

Sean Duffey  
CZM Project Review and Dredging Coordinator



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DOCUMENT A00871

**UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
(USFWS)  
No Effect - Consistency letter Letter**

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## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
New England Ecological Services Field Office  
70 Commercial Street, Suite 300  
Concord, NH 03301-5094  
Phone: (603) 223-2541 Fax: (603) 223-0104



In Reply Refer To:

10/16/2024 14:45:26 UTC

Project code: 2025-0006270

Project Name: 613202 - BARNSTABLE- BRIDGE PRESERVATION, B-01-012 (4AP) AND B-01-014 (4AN), OAK STREET OVER ROUTE 6

Subject: Consistency letter for the '613202 - BARNSTABLE- BRIDGE PRESERVATION, B-01-012 (4AP) AND B-01-014 (4AN), OAK STREET OVER ROUTE 6' project under the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (NLEB).

To whom it may concern:

The U.S. Fish and Wildlife Service (Service) has received your request dated October 16, 2024 to verify that the **613202 - BARNSTABLE- BRIDGE PRESERVATION, B-01-012 (4AP) AND B-01-014 (4AN), OAK STREET OVER ROUTE 6** (Proposed Action) may rely on the amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion (dated March 23, 2023) for Transportation Projects within the Range of the Indiana Bat and Northern Long-eared Bat (PBO) to satisfy requirements under section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 *et seq.*).

Based on the information you provided (Project Description shown below), you have determined that the Proposed Action will have no effect on the endangered Indiana bat (*Myotis sodalis*) or the endangered northern long-eared bat (*Myotis septentrionalis*). If the Proposed Action is not modified, **no consultation is required for these two species**. If the Proposed Action is modified, or new information reveals that it may affect the Indiana bat and/or northern long-eared bat in a manner or to an extent not considered in the PBO, further review to conclude the requirements of ESA section 7(a)(2) may be required.

**For Proposed Actions that include bridge/culvert or structure removal, replacement, and/or maintenance activities:**

If your initial bridge/culvert or structure assessment failed to detect Indiana bats and/or NLEBs use or occupancy, yet later detected prior to, or during construction, please submit the Post Assessment Discovery of Bats at Bridge/Culvert or Structure Form (User Guide Appendix E) to this Service Office within 2 working days of the incident. In these instances, potential incidental

take of Indiana bats and/or NLEBs may be exempted provided that the take is reported to the Service.

If the Proposed Action may affect any other federally-listed or proposed species and/or designated critical habitat, additional consultation between the lead Federal action agency and this Service Office is required. If the proposed action has the potential to take bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act may also be required. In either of these circumstances, please advise the lead Federal action agency accordingly.

The following species may occur in your project area and **are not** covered by this determination:

- American Chaffseed *Schwalbea americana* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Sandplain Gerardia *Agalinis acuta* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

## **PROJECT DESCRIPTION**

The following project name and description was collected in IPaC as part of the endangered species review process.

### **NAME**

613202 - BARNSTABLE- BRIDGE PRESERVATION, B-01-012 (4AP) AND B-01-014 (4AN), OAK STREET OVER ROUTE 6

### **DESCRIPTION**

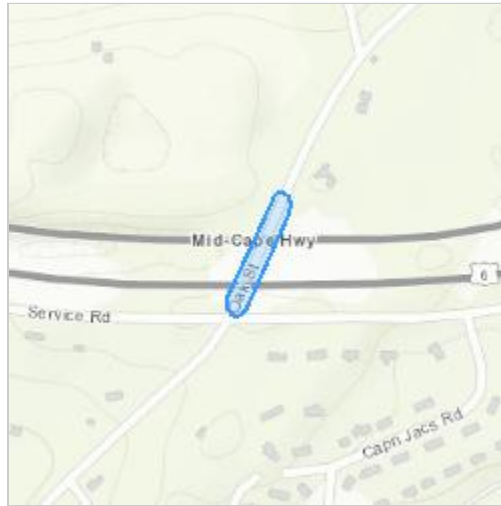
613202 - BARNSTABLE- BRIDGE PRESERVATION, B-01-012 (4AP) AND B-01-014 (4AN), OAK STREET OVER ROUTE 6 (MID-CAPE HIGHWAY)

This is primarily a deck replacement project. Proposed scope aims to replace reinforced concrete deck with new reinforced concrete deck.

Tricolored Bat: Proposed Endangered Species only. The project action will not jeopardize the continued existence of a proposed species.

Monarch Butterfly: Candidate Species only, no conservation measures at this time.

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.6843657,-70.35359679999999,14z>



## DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the endangered Indiana bat and/or the endangered northern long-eared bat.

Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for these two species.

## QUALIFICATION INTERVIEW

1. Is the project within the range of the Indiana bat<sup>[1]</sup>?

[1] See [Indiana bat species profile](#)

**Automatically answered**

No

2. Is the project within the range of the northern long-eared bat<sup>[1]</sup>?

[1] See [northern long-eared bat species profile](#)

**Automatically answered**

Yes

3. [Semantic] Does your proposed action intersect an area where Indiana bats and northern long-eared bats are not likely to occur?

**Automatically answered**

Yes

## **DETERMINATION KEY DESCRIPTION: FHWA, FRA, FTA PROGRAMMATIC CONSULTATION FOR TRANSPORTATION PROJECTS AFFECTING NLEB OR INDIANA BAT**

This key was last updated in IPaC on October 30, 2023. Keys are subject to periodic revision.

This decision key is intended for projects/activities funded or authorized by the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), and/or Federal Transit Administration (FTA), which may require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 of the Endangered Species Act (ESA) for the endangered **Indiana bat** (*Myotis sodalis*) and the endangered **northern long-eared bat** (NLEB) (*Myotis septentrionalis*).

This decision key should only be used to verify project applicability with the Service's [amended February 5, 2018, FHWA, FRA, FTA Programmatic Biological Opinion \(dated March 23, 2023\) for Transportation Projects](#). The programmatic biological opinion covers limited transportation activities that may affect either bat species, and addresses situations that are both likely and not likely to adversely affect either bat species. This decision key will assist in identifying the effect of a specific project/activity and applicability of the programmatic consultation. The programmatic biological opinion is not intended to cover all types of transportation actions. Activities outside the scope of the programmatic biological opinion, or that may affect ESA-listed species other than the Indiana bat or NLEB, or any designated critical habitat, may require additional ESA Section 7 consultation.

## **IPAC USER CONTACT INFORMATION**

Agency: Massachusetts Department of Transportation

Name: Emily Puglisi

Address: 10 Park Plaza

City: Boston

State: MA

Zip: 02116

Email: emily.a.puglisi@dot.state.ma.us

Phone: 6178964454

## **LEAD AGENCY CONTACT INFORMATION**

Lead Agency: Federal Highway Administration

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DOCUMENT A00875

**POLICY DIRECTIVE P-22-001  
AND  
POLICY DIRECTIVE P-22-002**

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Number: P-22-001  
Date: 9/23/22

## ***POLICY DIRECTIVE***

Jonathan Gulliver (signature on original)

HIGHWAY ADMINISTRATOR

### **Off-Site Stockpiling of Soil from MassDOT Construction Projects**

#### **Purpose**

The purpose of this Policy Directive is to formally establish a policy and procedures for managing and stockpiling soil generated and transported from MassDOT construction projects. This Policy Directive does not supersede any Federal, State, or Local regulations.

#### **Date of Effect**

This Policy Directive is effective immediately for all projects, including active construction projects.

For active construction projects and for other projects advertised prior to October 15, 2022, changes to the contract documents needed to implement the requirements of this Policy Directive will be considered on a case-by-case basis and shall be approved by the District Highway Director, as necessary.

For projects advertised on or after October 15, 2022, MassDOT will include the requirements and implementation procedures of this Policy Directive in the construction contract documents.

#### **Policy Requirements**

This policy is intended to prevent the off-site relocation of excavated soil generated from MassDOT projects to areas near residential receptors and to control potential fugitive dusts and/or contaminants. To that end, excavated soil may not be moved from the project site without knowledge of the content of the material. Knowledge may include visual field observations for presence of staining, odor, and/or debris, screening with a photoionization detector (PID), laboratory analysis, and/or site history. Pavement millings and other non-soil materials are not subject to the requirements of this Policy Directive.

Moving soil from a MassDOT project site to a temporary off-site storage location must be approved in writing by the District Highway Director.

The Contractor must select a storage location that is at least 500 feet away from residential receptors, as defined herein to include, but not be limited to, residential dwellings, residentially

zoned property, schools, daycare facilities, playgrounds, parks, recreational areas, hospitals, elderly housing and convalescent facilities.

Temporary off-site storage of excavated soil from a MassDOT project is only permissible at a location approved and permitted by MassDOT. The temporary storage location should be located within the same municipality where the soil was excavated, where possible. Stockpiled soil must be securely covered, and appropriate measures must be taken to minimize fugitive dust and erosion.

Signs indicating the source of the soil, the date the soil was generated, and contact information must be erected and maintained until the stockpiled soils are transported to a disposal facility or reused on the project site.

### **Implementation Procedures**

To ensure that off-site storage of excavated soils is managed properly on MassDOT projects, this policy requires the following:

#### **1. Off-Site Stockpile Storage Locations**

- a. The Contractor shall provide proposed off-site storage locations to the Engineer for approval at least 30 days prior to transporting soil off site. Off-site storage locations should be in the same municipality as the work site.
- b. The Contractor shall keep excavated soil on site until adequately characterized to the satisfaction of the Engineer.
- c. The Contractor shall provide notification of the approved off-site storage location to the local Board of Health and the Town Manager's/Mayor's Office at least 7-days prior to transporting soil off site.
- d. The Contractor shall provide the Engineer with at least 3-days' notice prior to transporting soil off site.
- e. For off-site storage locations on MassDOT property, the Contractor is required to obtain an Access Permit through the District Permits Office prior to storage of soil or other materials. MassDOT will issue these permits at no cost to the Contractor. Information to be submitted by the Contractor as part of the permit application shall include:
  - i. A description of material to be stored off-site, including available analytical data;
  - ii. A figure of the location with distances to residences and residential receptors; and
  - iii. Anticipated duration of temporary storage.
- f. Stockpile locations should not be within 500 feet of residential receptors (e.g., residential dwellings, residentially zoned property, schools, daycare facilities, playgrounds, parks, recreational areas, hospitals, elderly housing and convalescent facilities).
  - i. If the stockpile location must be within 500 feet of residential receptors, then soil must be less than RCS-1 (per 310 CMR 40.1600) and free of potentially hazardous or regulated items.

- g. For off-site storage locations on non-MassDOT property, the Contractor must notify the property owner(s) at least 7 days prior to transporting material.
- h. Exceptions to these rules will be reviewed by MassDOT and may be approved by the District Highway Director on a case-by-case basis.

## **2. Off-Site Stockpile Management**

- a. The Contractor shall keep soil stockpiles on impermeable surfaces (e.g., asphalt or concrete) or on 10-mil polyethylene sheeting.
- b. The Contractor shall cover soil stockpiles with 10-mil polyethylene sheeting and surround with a berm made of hay bales, straw wattles, or similar.
  - i. Piles that are actively being worked on must be covered and re-secured at the end of the work shift.
- c. The Contractor shall label stockpiles with signs, including:
  - i. Location of origin (including any Release Tracking Numbers)
  - ii. Stockpile ID number (including MassDOT District office-assigned tracking ID, if different)
  - iii. Date of initial accumulation
  - iv. Applicable telephone numbers for the Contractor and MassDOT.
- d. The Contractor shall mitigate fugitive dust at storage locations under the direction of an appropriately trained/certified environmental professional.
- e. The Contractor shall remedy noncompliance with this policy within 48 hours.
- f. The Contractor shall remedy noncompliance with this policy on the SAME DAY for potentially hazardous material, as determined by the Engineer.
- g. The Contractor shall handle excavated soil according to federal, state, and local regulations.
- h. The Contractor shall use appropriate shipping documents for all movements of excavated soil on public roadways (e.g., Bill of Lading, Material Shipping Record, Manifest, Asbestos Waste Shipment Record, etc.).

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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 B00420

PROPOSAL

BARNSTABLE

For: **Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over  
Route 6 (Mid-Cape Highway)**

COMMONWEALTH OF MASSACHUSETTS

LOCATION

The work referred to herein is in the Town of BARNSTABLE in Barnstable County, in the Commonwealth of Massachusetts, and is shown by the locus map (Document 00331) in the Proposal Pamphlet, the work locations extend as follows:

**Oak Street**

**Bridge B-01-012 (4AP) = B-01-014 (4AN)**

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 **691 CALENDAR DAYS** upon receipt of a Notice to Proceed, except that if the completion date falls between December 1 and March 15 then the same number of days beyond December 1st will be extended after March 15<sup>th</sup>.

The Work of this project is described by the following Items and quantities.

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Project # 613202		Contract # 129788		
Location : BARNSTABLE				
Description : Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
102.	0.5	SELECTIVE CLEARING AND THINNING  AT _____ PER ACRE		
114.11	1	PARTIAL DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. B-01-012 (4AP)  AT _____ LUMP SUM		
114.12	1	PARTIAL DEMOLITION OF SUPERSTRUCTURE OF BRIDGE NO. B-01-014 (4AN)  AT _____ LUMP SUM		
127.12	10.5	REINFORCED CONCRETE SUBSTRUCTURE EXCAVATION  AT _____ PER CUBIC YARD		
129.6	245	BRIDGE PAVEMENT EXCAVATION  AT _____ PER SQUARE YARD		
140.	25	BRIDGE EXCAVATION  AT _____ PER CUBIC YARD		
151.	54	GRAVEL BORROW  AT _____ PER CUBIC YARD		
184.1	4.5	DISPOSAL OF TREATED WOOD PRODUCTS  AT _____ PER TON		
204.	2	GUTTER INLET  AT _____ EACH		

Project # 613202		Contract # 129788		
Location : BARNSTABLE				
Description : Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
220.5	2	DRAINAGE STRUCTURE REMODELED  AT _____ EACH		
221.	2	FRAME AND COVER  AT _____ EACH		
222.1	2	FRAME AND GRATE - MASSDOT CASCADE TYPE  AT _____ EACH		
223.2	2	FRAME AND GRATE (OR COVER) REMOVED AND DISCARDED  AT _____ EACH		
238.10	23.5	10 INCH DUCTILE IRON PIPE  AT _____ PER FOOT		
415.4	2,057	BRIDGE PAVEMENT MILLING  AT _____ PER SQUARE YARD		
450.601	182	SUPERPAVE BRIDGE SURFACE COURSE - 9.5 POLYMER (SSC-B - 9.5 - P)  AT _____ PER TON		
451.	58	HMA FOR PATCHING  AT _____ PER TON		
452.	176	ASPHALT EMULSION FOR TACK COAT  AT _____ PER GALLON		

Project # 613202		Contract # 129788		
Location : BARNSTABLE				
Description : Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
453.	1,652	HMA JOINT ADHESIVE  AT _____ PER FOOT		
472.	6	TEMPORARY ASPHALT PATCHING  AT _____ PER TON		
482.31	158	SAWING AND SEALING JOINTS IN ASPHALT PAVEMENT AT BRIDGES  AT _____ PER FOOT		
501.	42	GRANITE CURB TYPE VA1 - STRAIGHT  AT _____ PER FOOT		
501.1	42	GRANITE CURB TYPE VA1 - CURVED  AT _____ PER FOOT		
594.	141	CURB REMOVED AND DISCARDED  AT _____ PER FOOT		
620.12	86	GUARDRAIL, TL-2 (SINGLE FACED)  AT _____ PER FOOT		
627.1	2	TRAILING ANCHORAGE  AT _____ EACH		
627.82	2	GUARDRAIL TANGENT END TREATMENT, TL-2  AT _____ EACH		

Project # 613202		Contract # 129788		
Location : BARNSTABLE				
Description : Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
628.24	4	TRANSITION TO BRIDGE RAIL  AT _____ EACH		
628.315	1	TEMPORARY IMPACT ATTENUATOR, REDIRECTIVE, TL-3  AT _____ EACH		
628.4	1	TEMPORARY IMPACT ATTENUATOR, REMOVED AND RESET  AT _____ EACH		
630.2	256	HIGHWAY GUARD REMOVED AND DISCARDED  AT _____ PER FOOT		
722.3	1	SCHEDULE OF OPERATIONS (TYPE C) - FIXED PRICE \$9500  AT Nine Thousand Five Hundred Dollars LUMP SUM	\$9,500.00	\$9,500.00
734.	2	SIGN REMOVED AND RESET  AT _____ EACH		
740.	23	ENGINEER'S FIELD OFFICE AND EQUIPMENT (TYPE A)  AT _____ PER MONTH		
748.	1	MOBILIZATION  AT _____ LUMP SUM		
751.	20	LOAM FOR ROADSIDES  AT _____ PER CUBIC YARD		

Project # 613202		Contract # 129788		
Location : BARNSTABLE				
Description : Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
765.	174	SEEDING  AT _____ PER SQUARE YARD		
769.	357	PAVEMENT MILLING MULCH UNDER GUARD RAIL  AT _____ PER FOOT		
850.41	350	ROADWAY FLAGGER  AT _____ PER HOUR		
851.1	250	TRAFFIC CONES FOR TRAFFIC MANAGEMENT  AT _____ PER DAY		
852.	668	SAFETY SIGNING FOR TRAFFIC MANAGEMENT  AT _____ PER SQUARE FOOT		
853.1	15	PORTABLE BREAKAWAY BARRICADE TYPE III  AT _____ EACH		
853.21	561	TEMPORARY BARRIER REMOVED AND RESET  AT _____ PER FOOT		
853.33	561	TEMPORARY BARRIER - LIMITED DEFLECTION (TL-3)  AT _____ PER FOOT		
853.403	150	TRUCK MOUNTED ATTENUATOR  AT _____ PER DAY		

Project # 613202		Contract # 129788		
Location : BARNSTABLE				
Description : Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
853.8	46	TEMPORARY ILLUMINATION FOR WORK ZONE  AT _____ PER DAY		
854.016	4,294	TEMPORARY PAVING MARKINGS - 6 INCH (PAINTED)  AT _____ PER FOOT		
854.1	1,572	PAVEMENT MARKING REMOVAL  AT _____ PER SQUARE FOOT		
854.6	22	TEMPORARY PORTABLE RUMBLE STRIP  AT _____ PER DAY		
856.	134	ARROW BOARD  AT _____ PER DAY		
856.12	212	PORTABLE CHANGEABLE MESSAGE SIGN  AT _____ PER DAY		
859.	2,050	REFLECTORIZED DRUM  AT _____ PER DAY		
859.1	300	REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS  AT _____ PER DAY		
866.106	1,380	6 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)  AT _____ PER FOOT		



Project # 613202		Contract # 129788		
Location : BARNSTABLE				
Description : Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)				
ITEM #	QUANTITY	ITEM WITH UNIT BID PRICE WRITTEN IN WORDS	UNIT PRICE	AMOUNT
866.112	15	12 INCH REFLECTORIZED WHITE LINE (THERMOPLASTIC)  AT _____ PER FOOT		
867.106	1,380	6 INCH REFLECTORIZED YELLOW LINE (THERMOPLASTIC)  AT _____ PER FOOT		
874.1	5	STREET SIGN REMOVED AND RESET  AT _____ EACH		
905.	10.5	4000 PSI, 3/8 INCH, 660 CEMENT CONCRETE  AT _____ PER CUBIC YARD		
964.3	13,069	ELASTOMERIC PROTECTIVE COATING  AT _____ PER SQUARE FOOT		
992.11	1	ALTERATION TO BRIDGE STRUCTURE NO. B-01-012 (4AP)  AT _____ LUMP SUM		
992.12	1	ALTERATION TO BRIDGE STRUCTURE NO. B-01-014 (4AN)  AT _____ LUMP SUM		
Total Qty: 32,865.5				

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## DOCUMENT B00853

## SCHEDULE OF PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES (DBES)

PRIME BIDDER: \_\_\_\_\_

DATE OF BID OPENING: \_\_\_\_\_ PROJECT NO.: 613202FEDERAL AID PROJECT NO. HIP(BR)-0035(062)XPROJECT LOCATION: BARNSTABLE

Name, Address, and Phone Number(s) of DBE	Name of Activity	(a) <sup>†</sup> DBE Contractor Activity Amount <i>Construction Work</i>	(b) DBE Other Business Amount <i>Services, Supplies, Material</i>	(c) Total amount eligible for credit under rules in Section 6 of Document 00719 - DBE Special Provisions
Total Bid Amount	TOTALS:	\$	\$	\$
\$	DBE Percentage of Total Bid:	%	%	%

<sup>†</sup>Column (a) must be at least one-half of the DBE participation goal. Attach additional sheets as necessary.Is MassDOT Document B00855 (Joint Check Approval) being submitted for any of the above? ☐ Yes ☐ No☐ Not Known at This TimeWill any of the contractors listed above be using a third party (i.e. manufacturer) to deliver materials or perform any portion of work by a third party? ☐ Yes ☐ No

**CERTIFICATION:** I HEREBY DECLARE, TO THE BEST OF MY KNOWLEDGE, THAT **I HAVE READ THE SPECIAL PROVISIONS FOR PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES - DOCUMENT 00719.** BOTH THIS SCHEDULE AND THE RELEVANT AND ACCOMPANYING LETTER(S) OF INTENT ARE IN FULL COMPLIANCE WITH THE PROVISIONS OF, AND IN ACCORDANCE WITH, TITLE 49 CODE OF FEDERAL REGULATIONS, PART 26 (49 CFR Part 26).

SIGNATURE: \_\_\_\_\_ DATE \_\_\_\_\_

NAME AND TITLE (*PRINT*): \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_ TEL NO.: \_\_\_\_\_

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

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DOCUMENT B00854

DISADVANTAGED BUSINESS ENTERPRISES (DBE) PARTICIPATION  
LETTER OF INTENT

(To be completed by the DBE – Page 1 of 2)

TO: \_\_\_\_\_ (Prime Bidder)

FROM: \_\_\_\_\_ (DBE Firm)

RE: PROJECT NO.: 613202 FEDERAL AID PROJECT NO.: HIP(BR)-0035(062)X

PROJECT LOCATION: BARNSTABLE

DATE OF BID OPENING: \_\_\_\_\_

I, \_\_\_\_\_, authorized signatory of the above-referenced DBE firm hereby declare:  
*Print Name*

1. My company is currently certified as a Disadvantaged Business Enterprise (DBE) by the Massachusetts Supplier Diversity Office (“SDO”), formerly known as the State Office of Minority and Women Business Assistance (SOMWBA), as a: (check all applicable, see Section 1 of the Special Provisions For Participation By Disadvantaged Business Enterprises, MassDOT Document 00719 additional guidance is available at Title 49, Code of Federal Regulations, Part 26.55 (49 CFR Part 26.55)):

( ) CONTRACTOR ( ) REGULAR DEALER ( ) BROKER  
( ) MANUFACTURER ( ) TRUCKING OPERATIONS ( ) PROFESSIONAL SERVICES

2. My firm has the ability to manage, supervise and perform the activity described on page 2 of this Letter of Intent. If you are awarded the contract, my company intends to enter into a contract with your firm to perform the items of work or other activity described on the following sheet for the prices indicated.
3. There have been no changes affecting the ownership, control or independence of my company since my last certification review on \_\_\_\_\_, 20\_\_\_\_. If any such change is planned or occurs prior to my company's completion of this proposed work, I will give prior written notification to your firm and to the Massachusetts Department of Transportation (“MassDOT”) Office of Civil Rights and SDO.
4. I have read the MassDOT proposal for the Project which may be entitled “Project Contract Documents and Special Provisions” or the draft “Contract” which includes MassDOT Document 00719, and acknowledge that my company will comply with that document and the requirements of 49 CFR Part 26.
5. For the purpose of obtaining subcontractor approval from MassDOT, my firm will provide to you:

A. **The following construction work:**

- (i) a resume, stating the qualifications and experience, of the superintendent or foreperson who will supervise on site-work;
- (ii) a list of equipment owned or leased by my firm for use on this project; and
- (iii) a list of all projects (public or private) upon which my firm is currently performing, is committed to perform, or intends to make a commitment to perform. I shall also include, for each project: the name and telephone number of a contact person for the contracting authority, person, or organization; the dollar value of the work; a description of the work; and my firm's work schedule for the project.

B. **The following services, materials or supplies:**

- (i) a written agreement and invoices for the materials or supplies, and any other documents evidencing the terms of providing such items;
- (ii) information concerning brokers fees and commissions for providing services or materials; and
- (iii) a statement concerning whether my firm intends or will be required to use a joint check arrangement; and any other documents that may be required by MassDOT.

\_\_\_\_\_  
DBE Company Authorized Signature

Date \_\_\_\_\_

DISADVANTAGED BUSINESS ENTERPRISES (DBE) PARTICIPATION  
LETTER OF INTENT  
(To be completed by the DBE – Page 2 of 2)

DATE OF BID OPENING: \_\_\_\_\_

PROJECT NUMBER: 613202FEDERAL AID PROJECT NUMBER: HIP(BR)-0035(062)XPROJECT LOCATION: BARNSTABLE

PRIME BIDDER: \_\_\_\_\_

DBE COMPANY NAME: \_\_\_\_\_

<u>Item number</u> if applicable	<u>NAICS</u> <u>Code</u>	<u>Description of Activity</u> with notations such as Services, or Brokerage, Installation Only, Material Only, or Complete	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
				TOTAL AMOUNT:	

*Please give full explanations, attach additional sheets if necessary.*

I HEREBY VERIFY THAT \_\_\_\_\_ WILL SOLELY  
(DBE company name)  
PERFORM THE WORK, OR PROVIDE THE SERVICES OR MATERIALS, AS DESCRIBED ABOVE.

DBE AUTHORIZED SIGNATURE: \_\_\_\_\_

NAME AND TITLE (PRINT): \_\_\_\_\_

TELEPHONE NUMBER: \_\_\_\_\_ FAX NUMBER: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

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

Rev'd 9/20/19

DOCUMENT B00855

## DBE JOINT CHECK ARRANGEMENT APPROVAL FORM

*(to be submitted by Prime Contractor)*Contract No: 129788 Project No. 613202 Federal Aid No.: HIP(BR)-0035(062)XLocation: BARNSTABLE Bid Opening Date: \_\_\_\_\_Project Description: Bridge Preservation, B-01-012 (4AP) and B-01-014 (4AN), Oak Street over Route 6 (Mid-Cape Highway)

We have received the attached request for the use of a joint check arrangement from \_\_\_\_\_, a DBE on the above- referenced Contract and \_\_\_\_\_, a Material Supplier/Vendor for the subject Contract. The DBE has complied with the requirements of 49 CFR Part 26.55(c)(1). In particular, the DBE has:

- a written agreement with the material supplier/vendor;
- applied for credit with the subject material supplier and has supplied the vendor's response;
- shown that it will place all orders to the subject material supplier/vendor;
- made and retains all decision-making responsibilities concerning the materials; and
- provided a Joint Check Agreement that is acceptable to MassDOT;

As the Contractor for the Project, we agree to issue joint checks (made payable to the Material Supplier/Vendor and the DBE) for payment of sums due pursuant to invoices from the Supplier/Vendor and DBE.

**Contractor:**\_\_\_\_\_  
Company Name\_\_\_\_\_  
Signature  
Duly Authorized\_\_\_\_\_  
Printed Name\_\_\_\_\_  
Date\_\_\_\_\_  
Title**SubContractor:**\_\_\_\_\_  
Company Name\_\_\_\_\_  
Signature –  
Duly Authorized\_\_\_\_\_  
Printed Name\_\_\_\_\_  
Date\_\_\_\_\_  
Title

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

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DOCUMENT B00856

## JOINT VENTURE AFFIDAVIT

*(All Firms)*

- All Information Requested By This Schedule Must Be Answered. Additional Sheets May Be Attached.
- If, there is any change in the information submitted, the Joint Venture parties must inform MassDOT Pre-Qualifications Office (and, if one of the companies is a DBE, the Director of Contract Compliance, Office of Civil Rights) *prior* to such change, in writing, either directly or through the Prime Contractor if the Joint Venture is a subcontractor.
- If the Joint Venture Entity will be the bidder on a prime Contract, it must bid and submit all required documents (insurance, worker's compensation, bonds, etc.) in the name of the Joint Venture Entity.

**I. Name of Joint Venture:** \_\_\_\_\_

Type of Entity if applicable (Corp., LLC): \_\_\_\_\_ Filing State \_\_\_\_\_

Address of joint venture: \_\_\_\_\_

Phone No(s) for JV Entity: \_\_\_\_\_ E-mail: \_\_\_\_\_

Contact Person(s) \_\_\_\_\_

Tax ID/EIN of Joint Venture: \_\_\_\_\_ Vendor Code: \_\_\_\_\_

**II. Identify each firm or party to the Joint Venture:**

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Phone : \_\_\_\_\_ E-mail: \_\_\_\_\_

Contact person(s) \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ E-mail: \_\_\_\_\_

Contact Person(s) \_\_\_\_\_

**III. Describe the role(s) of the each party to the Joint Venture:**\_\_\_\_\_  
\_\_\_\_\_

- IV. Attach a copy of the Joint Venture Agreement.** The proposed Joint Venture Agreement should include specific details including, but not limited to: (1) the contributions of capital and equipment; (2) work items to be performed by each company's forces, (3) work items to be performed under the supervision of any DBE Venturer; (4) the commitment of management, supervisory and operative personnel employed by the DBE to be dedicated to the performance of the Project; and (5) warranty, guaranty, and indemnification clauses.

**V. Attach any applicable Corporate or LLC Votes, Authorizations, etc.**

**VI. Ownership of the Joint Venture:**

A. What is the percentage(s) of each company's ownership in the Joint Venture?

ownership percentage(s): \_\_\_\_\_

ownership percentage(s): \_\_\_\_\_

B. Specify percentages for each of the following (provide narrative descriptions and other detail as applicable):

1. Sharing of profit and loss: \_\_\_\_\_

2. Capital contributions:

(a) Dollar amounts of initial contribution: \_\_\_\_\_

(b) Dollar amounts of anticipated on-going contributions: \_\_\_\_\_

(c) Contributions of equipment (specify types, quality and quantities of equipment to be provided by each firm): \_\_\_\_\_

4. Other applicable ownership interests, including ownership options or other agreements, which restrict or limit ownership and/or control:

5. Provide copies of all other written agreements between firms concerning bidding and operation of this Project or projects or contracts.

6. Identify all current contracts and contracts completed during the past two (2) years by either of the Joint Venture partners to this Joint Venture:

**VII. Control of and Participation in the Joint Venture.** Identify by name and firm those individuals who are, or will be, responsible for and have the authority to engage in the following management functions and policy decisions. (Indicate any limitations to their authority such as dollar limits and co-signatory requirements.):

A. Joint Venture check signing:

\_\_\_\_\_  
\_\_\_\_\_

B. Authority to enter Contracts on behalf of the Joint Venture:

\_\_\_\_\_  
\_\_\_\_\_

C. Signing, co-signing and/or collateralizing loans:

\_\_\_\_\_  
\_\_\_\_\_

## D. Acquisition of lines of credit:

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## E. Acquisition and indemnification of payment and performance bonds:

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## F. Negotiating and signing labor agreements:

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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?

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## B. Identify the "Managing Partner," if any, and describe the means and measure of their compensation:

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## 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?

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**IX. Personnel of Joint Venture:** State the approximate number of personnel (by trade) needed to perform the Joint Venture's work under this Contract. Indicate whether they will be employees of the majority firm, DBE firm, or the Joint Venture.

	Firm 1 (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 \*\*\*