MB

**VOLUME 2 OF 2**

COMMONWEALTH OF MASSACHUSETTS

massDOT
Massachusetts Department of Transportation
Highway Division

# CONTRACT DOCUMENTS AND SPECIAL PROVISIONS

| | |
|---|---|
| PROPOSAL NO. | 608051-132406 |
| P.V. = | $37,384,000.00 |
| PLANS | YES |

FOR

**Federal Aid Project No. STP/CMQ/HSI-0034(030)X**
**Reconstruction on Route 38 (Main Street), from Route 62 to the Woburn C.L.**

**in the Town of**

**WILMINGTON**

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

This Proposal to be opened and read: **TUESDAY, JANUARY 27, 2026 at 2:00 P.M.**

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DOCUMENT A00806

# MBTA RAILROAD REQUIRMENTS

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Document A00811

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

# RAILROAD OPERATIONS DIRECTORATE

The attached Specifications are required for any construction and/or related activities on, over, under, within or adjacent to railroad property owned or controlled by the Massachusetts Bay Transportation Authority. They are intended to provide general guidelines and safeguards. Attachment "A" of Construction Guidelines and Procedures contains a summary of MBTA Railroad Operations Specifications which may be required. It is the responsibility of the Contractor to obtain all the necessary specifications for each project.

AUGUST 2014

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# GUIDELINES AND PROCEDURES

# FOR CONSTRUCTION ON

# MBTA RAILROAD PROPERTY

AUGUST 2014

## SECTION 1. SCOPE

1.01 These specifications provide general safeguards to railroad property owned or controlled by the Massachusetts Bay Transportation Authority and to railroad operations upon that property during the performance of construction and/or related activities on, over, under, within or adjacent to the railroad property. They are intended as guidelines and do not represent all legal requirements which are or may be associated with construction and/or related activities. The MBTA reserves the right to require additional information and clarification and to make unilateral changes to these specifications at any time, at its sole discretion.

## SECTION 2. DEFINITIONS

MBTA

Massachusetts Bay Transportation Authority; Massachusetts Realty Group, Designated Representative of MBTA Real Estate

RAILROAD COMPANY

The particular reference for the purpose of these specifications is the railroad company which maintains and/or operates or has trackage rights on the subject MBTA Railroad Property, including, but not limited to:

- Massachusetts Bay Transportation Authority (MBTA")
- Keolis Commuter Services
- Providence and Worcester Railroad (PW)
- National Railroad Passenger Corporation ("Amtrak")
- CSX Transportation ("CSX")
- Pan Am Railways (PAR) and subsidiaries The Boston and Maine Corporation (BM), The Springfield Terminal Railway Company (ST), its affiliates, successors and assigns
- Bay Colony Railroad Corporation (BLCR)

MBTA RAILROAD PROPERTY

All railroad rights of way and adjacent owned and/or controlled by the MBTA.

OWNER

The individual, utility, government, or corporation having title to the structure to be constructed upon, over or adjacent to the railroad property owned or controlled by the MBTA.

UTILITY

Public or private communication, water, sewer, electric, gas and petroleum companies or other entity governed by the Massachusetts Department of Public Utilities.

GOVERNMENT

Federal, State, Town, City, County and other forms of government.

CORPORATION

Any firm duly incorporated under laws of a state government.

INDIVIDUAL

Any party not defined by "Owner, Utility, Government or Corporation".

CONTRACTOR

The individual, partnership, firm, corporation or any combination thereof, or joint venture, contracting with a Utility. Government, Firm, Company, Corporation or Individual for work to be done on, over, under, within or adjacent to MBTA Railroad Property.

OWNER OR ITS CONTRACTOR

As used in these specifications, does not affect the responsibilities of either party for work conducted on, over, under, within or adjacent to MBTA Railroad Property.

CONSTRUCTION DRAWINGS

Original drawings, submitted to the Engineer by the Contractor pursuant to the Work, including, but not limited to: stress sheets, working drawings, diagrams, illustrations, schedules, performance charts, brochures, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcing steel, or other supplementary plans or similar data which are prepared by the Contractor or a Subcontractor, manufacturer, supplier or distributor, and which the Contractor is required to submit for review and approval by the MBTA. Working Drawings: Contractor prepared plans for temporary

structures and facilities. Working Drawings for elements of work which may affect safety of persons or property included but are not limited to Contractor's plans for temporary structures such as decking, temporary bulkheads, support of utilities, and for such other work as may be required for construction but which do not become an integral part of completed project.

SECTION 3. SUBMITTALS

3.01 INITIAL CONTACT

A. The MBTA owns the majority of the railroad lines in eastern Massachusetts. Many of these railroad lines are operated for passenger service, using a Railroad Company as an operating and maintaining Contractor. Some of the railroad lines are used for freight-only service, operated and maintained by other Railroad Company(s). In most instances, both passenger and freight service are operated over the same railroad lines.

B. All of the MBTA railroad lines are maintained by a designated Railroad Company(s), excepting rapid transit and light rail lines. The maintaining Railroad Company(s) has rights and responsibilities, in addition to the MBTA's property owner's rights.

C. To obtain further information concerning License Agreements, Easements, Licenses for Entry and performance of construction related activities which affect MBTA Railroad Property, a written request may be forwarded to:

License Administrator
Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116

or you may access the website at www.mbtarealty.com

The License Administrator is also the contact person for information concerning rapid transit and light rail lines.

SECTION 4. PLANS AND SPECIFICATIONS

4.01 SCOPE: It is the intent of the MBTA to eliminate or minimize any risk involved with construction or related activities on, over, under, within or adjacent to MBTA Railroad Property. Therefore, MBTA approval and

frequently one or more Railroad Company(s) approval of construction plans and specifications for all phases of a proposed project affecting MBTA Railroad Property is required.

4.02 GENERAL: If requested by the License Administrator, the applicant must provide six (6) sets of plans and specifications to the License Administrator. These plans and specifications must meet the approval of the Railroad Company(s) and the MBTA prior to the start of construction. These plans are to be prepared in sizes as small as possible (no smaller than 11" x 17") and are to be folded to an 8-1/2 inch by 11 inch size (folded dimensions) with a 1-1/2 inch margin on the left side and a 1 inch margin on the top.

A. After folding, the title block and other identification of the plans shall be visible at the lower right corner, without the necessity of unfolding. Each plan shall bear an individually identifying number and an original date, together with subsequent revision dates, clearly identified on the plan.

B. All plans are to be individually folded or rolled and where more than one plan is involved, they shall be assembled into complete sets before submission to the MBTA.

4.03 PLANS: The plans are to show all the work which may affect MBTA Railroad Property, and contain a location map and plan view of the project, with appropriate cross sections and sufficient details. The proposed construction or related activities must be (orated with respect to top of rail (vertical) and center line of track (horizontal). The plan must also include railroad stationing, property lines and subsurface soil conditions. The subsurface information is to be in the form of boring logs with the borings located on the plan view. The plans must be stamped by a Professional Engineer registered in the state of Massachusetts. (The purchase of railroad valuation plans may be arranged by contacting MBTA Engineering offices at (617) 222-6178).

4.04 SPECIFICATIONS: The specifications summarized on Attachment "A" attached hereto are the Standard Specifications of the MBTA Railroad Operations Department and apply to all types of construction work affecting MBTA Railroad Property.

A. In addition to "Maintenance and Protection of Railroad Traffic" and "Insurance Specifications" which are required for all work on, over, under, within or adjacent to MBTA Railroad Property, certain other Specifications contained in Attachment "A" shall be incorporated into construction/engineering submittals when deemed necessary by the MBTA and/or Railroad Company(s). (The purchase

of additional specifications may be arranged by contacting MBTA offices at (617) 222-3448 or visiting Massachusetts Realty Group website at www.mbtarealty.com.

SECTION 5. SUBMISSION REVIEW

5.01 An initial submission of six (6) sets of plans and specifications for MBTA review must be forwarded to the License Administrator, along with a completed MBTA Application for Entry (Attachment "B"). The submission will be circulated for review and comment to MBTA departments which may be impacted by the proposed project. If approved by the MBTA, the Railroad Company(s) will review.

5.02 The applicant is advised that the MBTA's initial review process requires a minimum forty-five (45) day period, prior to the Railroad Company(s) involvement, and additional processing time may be required for specific documents (See Section 9).

SECTION 6. INSPECTIONS/PAYMENTS

6.01 The MBTA may inspect all projects affecting MBTA Railroad Property at least twice, at the applicant's sole expense. The actual number of MBTA inspections will depend on the size and complexity of the project.

6.02 The MBTA may utilize Railroad Company inspectors and flagmen for daily inspection and protection of rail traffic during the term of the construction period or related activities. The Owner or Contractor will be responsible for advance payment of all associated fees.

6.03 Advance payments to the MBTA for construction/engineering review of plans and specifications by MBTA staff must be submitted when initial contact is made with the License Administrator. Payments shall be in the form of check or money order, made payable to the Massachusetts Bay Transportation Authority.

6.04 Advance payments covering the services for Railroad Company(s) construction/engineering review of plans and specifications, or services of an inspector or flagman, will be paid directly to the Railroad Company(s). The MBTA will advise when such services are required, and the Railroad Company(s) will advise of the amount of the required advance payment.

SECTION 7. EXAMINATION OF PLANS OR PROPERTY

7.01 The Contractor/Applicant shall have no claim for any differences between MBTA valuation plans and the actual conditions encountered in the field.

SECTION 8. INSURANCE AND INDEMNIFICATION

8.01 Prior to entry upon MBTA Railroad Property, insurance will be provided to and approved by the MBTA and affected Railroad Company(s), as outlined in “Insurance Specifications."

8.02 Additionally, all MBTA Licenses and Letters of Authorization contain a clause for Indemnifying MBTA and the Railroad Company(s) from and against any and all liabilities, losses, damages, costs, expenses, causes of action, suits, claims, demands and/or judgments of any nature whatsoever that may be imposed upon or incurred by or asserted against the MBTA or the Railroad Company(s).

SECTION 9. LEGAL DOCUMENTS FOR TEMPORARY AND PERMANENT INSTALLATIONS

9.01 The nature of entry upon or installation within MBTA Railroad Property will determine the authorizing document to be issued. Listed below are brief descriptions of MBTA documents:

A. **License for Entry**: Authorizes short-term entry for purposes of survey, Inspection, test borings, access, etc. One time administrative/ engineering/legal review and access fees.

B. **License Agreement**: Authorizes installations, subject to termination clause, if Applicant chooses not to pursue an Easement. One time administrative/engineering/legal review fee as well as annual rental fee.

C. **Easement**: Authorizes permanent installations in form suitable for recording at Registry Deeds. All easements are non-exclusive and subject to relocation at the Owner's expense, for Mass transportation purposes:

1. Easements must receive MBTA Board of Directors approval, which involves considerable time. Once approved by the Board of Directors and upon payment in full to the MBTA, a License for Construction is issued. Upon final inspection and acceptance of the installation by the MBTA the Easement document is issued.

2. Permanent Subsurface Easement widths are limited to a maximum three-foot distance on either side of the occupation.

3. a) A one-time administrative/engineering/legal review fee, in addition to value of easement, as established by independent appraisal conducted at the Applicant's expense.

   b) If easement size is minimal, as determined by the MBTA, a fixed fee, encompassing administrative/engineering/legal review fee.

D. **Letter of Authorization**: Authorizes installations and construction activities in association with Master License Agreements. One-time administrative/engineering/legal review as well as access and/or annual fees.

ATTACHMENT "A"

SUMMARY OF MBTA RAILROAD OPERATIONS SPECIFICATIONS

I. GUIDELINES AND PROCEDURES FOR CONSTRUCTION ON MBTA RAILROAD PROPERTY

This general specification outlines the immediate design requirements and methodology for progressing construction activities on MBTA Railroad Property.

II. MAINTENANCE AND PROTECTION OF RAILROAD TRAFFIC

This specification will be included in ALL work requirements on MBTA Railroad Property, and covers rules, requirements, and protective services or any construction-related activity on MBTA Railroad Property. Supplemental specifications are listed below.

III. INSURANCE SPECIFICATIONS

This specification details the required insurance coverages and limits of the MBTA and Railroad Company(s).

IV. PIPELINE OCCUPANCY SPECIFICATIONS

This specification details requirements for all pipeline borings/jacking's and open cuts on or adjacent to MBTA Railroad Property, as well as requirements for Drawing submittals.

V. SPECIFICATIONS FOR WIRE CONDUIT AND CABLE OCCUPATIONS

This specification details requirements for clearances and installations of parallel and overhead crossings on MBTA Railroad Property, as well as requirements for Drawing submittals.

VI. BRIDGE ERECTION DEMOLITION AND HOISTING OPERATIONS

This specification details plan preparation for demolition and/or hoisting and erection of structures on and over MBTA Railroad Property.

VII. TEMPORARY SHEETING AND SHORING

This specification details requirements for plan preparation and calculations necessary for sheeting and shoring for construction on or adjacent to MBTA Railroad Property.

VIII. BLASTING SPECIFICATIONS

This specification outlines submittals, details and requirements for blasting on or adjacent to MBTA Railroad Property.

IX. TEMPORARY PROTECTION SHIELDS FOR DEMOLITION AND CONSTRUCTION

This specification outlines criteria for plan preparation related to protection of MBTA Railroad Property when work takes place on overhead structures.

X. INDUSTRIAL SIDE TRACK SPECIFICATIONS

This specification outlines minimal requirements for materials and installation submission for private railroad side tracks up to MBTA property line and/or clearance point. Other provisions, site-specific, may be required, including signal protection maintenance and protection of railroad traffic.

XI. RIGHT OF WAY FENCING SPECIFICATIONS

This specification details the requirements for the materials, construction and installation of standard right of way fence.

XII. TEST BORING SPECIFICATIONS

This specification outlines procedures and requirements for the performance of test borings on MBTA Railroad Property.

XIII. FIBER OPTIC CABLE SPECIFICATIONS

This specification details requirements for design and installation of fiber optic cables on MBTA Railroad Property; and is modified by site-specific requirements, including the construction methodology, location and type of fiber optic cables and protection conduits.

XIV. RAILROAD OPERATIONS BOOK OF STANDARD PLANS, TRACK AND ROADWAY, MW-I SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF TRACK

Certain construction activities may require obtaining this comprehensive package if rail construction details and requirements are related to the track operation.

XV. COMMUTER RAIL DESIGN STANDARDS

ATTACHMENT "B"

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**
**APPLICATION FOR ENTRY UPON MBTA RAILROAD, TRANSIT,**
**OR OTHER PROPERTY**

Date_____

1. Name of Applicant: _____
2. Type of Entity (Partnership, Corporation, Proprietorship, Public Authority, etc.):

   _____
3. Mailing Address: _____
4. Contact info:_____
5. If incorporated, state of incorporation:_____
6. Proposed license term commencement date:_____
7. Agents for applicant for service of notice or process: _____

   _____

   _____
8. Administrative Fee: 1,000.00 paid with application
9. *If plan reviews by The MBTA Design and Construction are deemed necessary the following fee shall apply:*

   Design and Construction Plan Review Fee: 1,600.00 Paid with Application Fee
10. Applicant shall submit Drawings in pdf form and one set of paper Drawings to License Administrator
11. If applicant is self-insured, please provide limits of self-insurance and attach copies of authorizing legislation or certification thereof:_____

    _____
12. If applicant is authorized by public authority to enter into such license agreement, please provide:

    Motion, Resolution, or Ordinance No.: _____

    Date of Adoption: _____

Adopted by: _____

13. Is the applicant seeking permission to perform environmental testing and/or assessment on Authority property?

_____

a) Is the proposed testing and/or assessment required by the Massachusetts Contingency Plan ("MCP")?

_____

b) What is the Release Tracking number and current status of the MCP work?

_____

_____

_____

_____

14. Name, title and email of applicant's officer authorized to sign agreement: _____

_____

_____

**Project Description**

1. Brief description of construction (including types of pipes and other attachments or ancillary facilities to be installed on MBTA Railroad Property): _____

_____

_____

_____

_____

2. Brief description of purpose of entry and/or installation: _____

_____

_____

_____

**Space Requirements**
**[*To Be Provided*]**

## Technical Information

1. Is this occupancy within the limits of a public road? _____
   Attach copies of applicant's franchise to occupy such space.

2. If occupancy is under, over, though, or attached to undergrade or overhead bridge, who owns such bridge? _____

   _____

3. Type of occupancy (facility):
   a) Exact Length of MBTA Railroad Property to be burdened by occupancy: ____

   _____

   b) Width of excavation facility on MBTA Railroad Property:

   _____

   c) Number of manholes: _____

   **A. Aerial or underground wire and cable:**

   (1) Telephone and other communication cables:

   Number of cables: _____

   Number of pairs/cable: _____

   Are these composite coaxial cables? _____

   (2) Power Cables:

   Number of cables/size: _____

   Number of volts per conductor: _____

   Are these pipe-type cables consisting of one or more high voltage cables encased in steel pipe under inert oil pressure? _____

   (3) Fiber optic cables:

   Number of cables: _____

   Number of distribution cables: _____

   Number of transmission cables: _____

   Number of strands in each cable: _____

Number of repeater stations on MBTA Railroad Property: _____

Systems (check one):

Transmission _____

Distribution _____

Sensor _____

(4) Number of spare or unoccupied ducts to be installed: _____

**B. Pipes and Sewers**

(1) Circular line carrying no pressure:

Number of pipes: _____

Number of inches of inside nominal diameter per pipe: _____

(2) Circular lines under pressure and carrying non-flammable, non-explosive, or non-combustible supporting materials, except coal and slurry:

Number of pipes: _____

Number of inches of inside nominal diameter per pipe: _____

(3) Circular lines under pressure and carrying flammable, explosive, or combustible supporting material:

Number of pipes: _____

Number of inches of inside nominal diameter per pipe: _____

(4) Non-circular pipe: _____

(5) Will a pipe tunnel be constructed? _____

(6) Will pipe be supported by MBTA structures, bridges, etc.? _____

Explain: _____

_____

(7) Will pipe be attached to MBTA structures, bridges, etc.? _____

Explain: _____

_____

**C. Ancillary Facilities**

Number of wooden poles to be installed on MBTA Railroad Property:

_____

Other wooden supporting structures: _____

_____

Steel supporting structures: _____

Explain: _____

Number of braces, stub poles: _____

Number of guy wires anchored on MBTA Railroad Property: _____

Number of span guy wires crossing MBTA Railroad Property: _____

**D. Attachments**

(1) Attachment of aerial wires and cables to poles or other structures of MBTA used in wire line construction or support:

Number of wires attached to MBTA cross-arm: _____

Voltage of wire: _____

Number of wires attached to applicant's cross-arm or bracket: ____

Voltage of wire: _____

Number of cross-arms or brackets attached to MBTA poles: _____

(2) Attachment of aerial wires and cables to building or structures other than those used in wire line construction or support:

Number of wires or cables attached to MBTA's building or structures:

_____

(3) Attachment of cable terminals to poles, buildings, or structures including highway bridges, railroad bridges over highways, or other bridges of MBTA:

Number of cable terminals, loading coils, transformers, or like devices attached:

_____

Explain: _____

**E. Guy wire crossings and overhanging cross-arms and power wires of pole lines outside MBTA right-of-way.**

Number of guy wires crossing MBTA Railroad property but not anchored thereon: _____

Number of cross-arms overhanging MBTA Railroad Property from poles located outside thereof: _____

Number of cross-arms on any poles: _____

It is hereby understood and agreed that the undersigned applicant will bear any and all costs associated with MBTA's preliminary and final engineering review in connection with this application. Any charges in excess of the initial advance payment will be billed directly to the address indicated in Item #3 above.

Agent: _____

For: _____
Name of Applicant

By: _____
(Title)

_____
(Date)

REVENUE ENFORCEMENT AND PROTECTION PROGRAM CERTIFICATION

Pursuant to M.G.L. Ch. 62C, Sec. 49A, I certify under penalties of perjury that I (my company), to my best knowledge and belief, have (has) filed all state tax returns and paid all state taxes required under law.

_____ _____

Social Security Number or
Federal Identification Number

Signature of Individual or Corporate Name

By: _____
Corporate Officer
(If applicable)

Date: _____

EMPLOYER'S CERTIFICATE OF COMPLIANCE WITH
MASSACHUSETTS EMPLOYMENT SECURITY LAW

Pursuant to G. L. C. 151A, Sec. 19A (b), I _____

on behalf of (Name of Employer) _____,

D.E.T. ID Number _____, certify under the penalties of perjury[1] that the aforementioned employer has complied with all laws of the Commonwealth relating to contributions and payments in lieu of contributions.

Signed under the penalties of perjury this _____ day of _____, 20__.

_____
Name of Employer

_____
Signature

_____
Name (Printed)

_____
Title (Printed)

[1] The employer may certify its compliance if it has entered into and is complying with a repayment agreement satisfactory to the Commissioner or there is a pending adjudicatory proceeding or court action contesting the amount due pursuant to G. L. C. 161A, Sec. 19A(c).

## STATEMENT REGARDING BENEFICIAL INTEREST

In compliance with the provisions of Chapter 7, Sec. 40J of the General Laws, I hereby state, under the penalties of perjury, that the true names and addresses of all persons who have or will have a direct or indirect beneficial interest in the real property subject to this Application dated _____, 20__,

between _____ as applicant/tenant, for premises in the building (on the site) know as _____, and located at _____ _____ are listed below.

Name and residence of all persons with beneficial interests:

1. _____
2. _____
3. _____
4. _____
5 _____
6. _____

Signed: _____

Title: _____

Date: _____

ATTACHMENT "C"

REFERENCED STANDARDS AND SPECIFICATIONS

A. Wherever standards or specifications issued by a recognized industry association or regulatory body are referenced in these Specifications, the reference shall be interpreted as incorporating the referenced standard or specification in total into these Specifications as applicable. In the event of a difference between referenced standard or specifications and these Specifications, the latter shall govern.

B. Technical Reference Abbreviations - References are made to recognized standards by use of the acronyms listed below. Addresses are included for convenience, and the accuracy of the addresses is not warranted:

AA The Aluminum Association
900 19th Street NW
Washington, DC 20006

AAR The Association of American Railroads
American Railroads Building
50 F Street NW
Washington, DC 20001

AASHTO American Association of State Highway and Transportation Officials
444 North Capitol Street NW
Suite 249
Washington, DC 20001

ACGIH American Conference of Governmental Industrial Hygienists
1330 Kemper Meadow Drive
Cincinnati, OH 45240

ACI American Concrete Institute
P. O. Box 19150
Detroit, MI 48219

AFPA American Forest and Paper Association
1111 19th Street, NW
Suite 700
Washington, DC 20036

| | |
|---|---|
| AIA | American Insurance Association<br>1130 Connecticut Avenue NW<br>Washington, DC 20036 |
| AISC | American Institute of Steel Construction Inc.<br>1 East Wacker Drive<br>Suite 1300<br>Chicago, IL 60601 |
| AISI | American Iron and Steel Institute<br>1101 17th Street NW Suite 1300<br>Washington, DC 20036-4700 |
| AITC | American Institute of Timber Construction<br>7012 South Revere Parkway<br>Suite 140<br>Englewood, CO 80112 |
| ANSI | American National Standards Institute<br>11 West 42nd Street<br>New York, NY 10036 |
| APA | American Plywood Association<br>P. O. Box 11700<br>Tacoma, WA 98411 |
| APHA | American Public Health Association<br>1015 15th Street NW<br>Washington, DC 20005 |
| AREA | American Railway Engineering Association<br>50 F Street NW Washington,<br>DC 20001 |
| ASCE | American Society of Civil Engineers<br>345 East 47th Street<br>New York, NY 10017 |
| ASHRAE | American Society of Heating, Refrigerating and Air Conditioning Engineers<br>1791 Tullie Circle, NE<br>Atlanta, GA 30329 |
| ASME | American Society of Mechanical Engineers<br>345 East 47th Street<br>New York, NY 10017 |

| | |
|---|---|
| ASTM | American Society for Testing and Materials<br>1916 Race Street<br>Philadelphia, PA 19103 |
| AWPA | American Wood Preservers' Association<br>P. O. Box 286<br>Woodstock, MD 21163-0286 |
| AWS | American Welding Society<br>550 NW 42nd Avenue<br>Miami, FL 33126 |
| AWWA | American Water Works Association, Inc.<br>6666 W. Quincy Avenue<br>Denver, CO 802350 |
| CSI | Construction Specifications Institute<br>601 Madison Avenue<br>Alexandria, VA 22314-1791 |
| FHA | Federal Highway Administration<br>400 7th Street SW<br>Washington, DC 20590 |
| FRA | Federal Railroad Administration<br>403 7th Street SW<br>Washington, DC 20590 |
| ICBO | International Conference of Building Officials<br>5360 Workman Mill Road<br>Whittler, CA 90601 |
| IIA | Incinerator Institute of America<br>60 East 42nd Street<br>New York, NY 10017 |

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# II

# MAINTENANCE AND PROTECTION OF RAILROAD TRAFFIC

AUGUST 2014

SECTION 1. GENERAL

1.01 The Contractor should note that these specifications govern proposed work that involves construction on, over, under, within or adjacent to MBTA Railroad Property. Requirements must be strictly observed whenever the tracks, structures, or properties of the MBTA are involved or affected.

1.02 If the tracks or other facilities of the MBTA are endangered, the Contractor shall immediately perform such work as directed by the Railroad Company(s), and upon failure of the Contractor to carry out such orders immediately, the Railroad Company(s) may take whatever steps are necessary to restore safe conditions. The cost and expense to the Railroad Company(s) and/or MBTA of restoring safe conditions or of any damage to the MBTA's trains, tracks, or other facilities caused by the Contractors' or subcontractors' operations, shall be at the sole expense of the Contractor and will be collected as appropriate. This cost shall be paid for by the Contractor and may be deducted from any monies due and that may become due to the Contractor.

1.03 Before entering upon MBTA Railroad Property:

A. The Owner or its Contractor shall be fully informed of all requirements of the MBTA pertaining to the specific project and shall conduct all their work accordingly. Any questions relating to the requirements of the MBTA should be directed to the Director of Engineering for MBTA Railroad Operations or their authorized representative.

B. The Owner or its Contractor shall execute an MBTA License for Entry, and shall provide the MBTA and Railroad Company(s) with the information required in the "Insurance Specifications".

C. The Owner or its Contractor shall take note that if an excavation is to be made within a 2 to 1 slope line commencing 5.5 feet from the centerline of track, they shall be required to submit the proposed method of soil stabilization for approval by the Director of Engineering for MBTA Railroad Operations.

D. The Owner or its Contractor shall furnish detailed plans for falsework, bracing, sheeting, or other supports adjacent to the tracks for approval by the Director of Engineering for MBTA Railroad Operations and the Railroad Company(s), and the work shall be performed in accordance with temporary “Sheeting and Shoring". All plans and calculations shall be stamped by a Registered Professional Engineer.

E. The Owner or its Contractor shall give written notice to the Director of Engineering for MBTA Railroad Operations and the applicable

Railroad Company(s) at least 21 days in advance of starting work or locating equipment at the site.

F. The Owner or its Contractor shall make all necessary arrangements with the MBTA before entering upon MBTA Railroad Property.

1.04 After entering upon MBTA Railroad Property:

A. The Owner or its Contractor shall have, in their possession on the job site, the contract plans and specifications which bear the stamp of approval of the Director of Engineering for MBTA Railroad Operations or Railroad Company(s). The Owner or its Contractor shall conduct all their work according to these plans and specifications.

B. All work shall be performed and completed in a manner fully satisfactory to the MBTA Chief Engineering Officer or authorized representative(s). Railroad Company(s) inspection of the work shall be conducted at any time and the Owner or its Contractor shall cooperate fully with the MBTA and Railroad Company(s) representatives.

C. All equipment used by the Owner or its Contractor on MBTA Railroad Property may be inspected by the Railroad Company(s) and shall not be used if considered unsatisfactory by the Railroad Company(s) representative. Equipment of the Owner or its Contractor to be used adjacent to tracks shall be in first class condition so as to positively prevent any failure that would cause delay in the operation of trains or damage to MBTA or railroad facilities. Equipment shall not be placed or put into operation adjacent to a track without first obtaining the permission of the Railroad Company(s).

D. Operators of such equipment must be properly licensed and may be examined by the Railroad Company(s) representative to determine their fitness. If it is determined that they are unfit to work, then the Owner or its Contractor shall remove them from MBTA Railroad Property.

E. If the Director of Engineering for MBTA Railroad Operations deems it necessary, the Owner or its Contractor shall furnish and erect in close proximity to the site of the work a suitable, furnished shelter with lights, heat, telephone, etc., for use by Railroad Company(s) personnel providing services to the Owner's or Contractor’s work.

F. The Owner or its Contractor's work shall be performed in such manner that the tracks, train operations and appurtenances of the MBTA and the Railroad Company(s) will be safeguarded.

G. Open excavations shall be suitably planked and safeguarded when construction operations are not in progress.

H. Blasting will be permitted under or adjacent to tracks only after proof that blasting is required and all methods have been approved by the Director of Engineering for MBTA Railroad Operations and the Railroad Company(s). All blasting operations must comply with the MBTA's "Blasting Specifications".

I. The Owner or its Contractor shall be fully responsible for all damages arising from their failure to comply with the requirements of these specifications. Failure to comply may result in their removal from MBTA Railroad Property, at the MBTA's sole discretion.

SECTION 2. RULES, REGULATIONS, AND REQUIRMENTS.

2.01 Railroad traffic shall be maintained at all times with safety and continuity, and the Contractor shall conduct all operations on, over, under, within or adjacent to MBTA Railroad Property within the rules, regulations, and requirements of the Railroad Company(s) and/or MBTA. The Contractor shall be responsible for acquainting themselves with such requirements as the Railroad Company(s) and/or MBTA may demand.

2.02 The Contractor shall obtain verification of the time and schedule of track occupancy from the Railroad Company(s) before proceeding with any construction or demolition work on, over, under, within or adjacent to MBTA Railroad Property. The work shall not proceed until the plans and method of procedure have been approved by the Director of Engineering for MBTA Railroad Operations or their authorized representative.

2.03 All work to be done on, over, under, within or adjacent to MBTA Railroad Property shall be performed by the Contractor in a manner satisfactory to the MBTA and the Railroad Company(s), and shall be performed at such times and in such manner, as to not interfere with the movement of trains or operations upon the tracks of the MBTA. The Contractor shall use all necessary care and precaution in order to avoid accidents, delays or interference with the MBTA's trains or other property.

2.04 The Contractor shall give written notice to the Railroad Company(s) at least twenty- one (21) days prior to the commencement of any work, or any portion of the work, by the Contractor or their subcontractors on, over, under, within or adjacent to MBTA Railroad Property, in order that necessary arrangements may be made by the Railroad Company(s) to protect railroad operations.

2.05 If deemed necessary by the Railroad Company(s), it may assign an inspector and/or engineer who will be placed on the work site during the time the Contractor or any subcontractor is performing work on, over, under, within or adjacent to MBTA Railroad Property. The cost and expense will be paid directly by the contracting party with an advance deposit to the Railroad Company(s), unless otherwise approved.

2.06 Before proceeding with any construction or demolition work, on, over, under, within or adjacent to the MBTA's Railroad Property, a pre-construction meeting shall be held at which time the Contractor shall submit for approval of the MBTA and Railroad Company(s), Drawings, computations, and a detailed description of the method for accomplishing the construction work, including methods of protecting railroad operations. Such approval shall not serve in any way to relieve the Contractor of complete responsibility for the adequacy and safety of the referenced methods.

2.07 During any demolition procedure, the Contractor must provide an approved shield to prohibit all debris from falling onto MBTA Railroad Property. A protective fence must be erected at both ends of the project to prohibit trespassers from entering MBTA Railroad Property.

2.08 Cranes, shovels, or any other equipment shall be considered to be fouling the track when located in such position that failure of same with or without load brings the equipment within the fouling limit. The Contractor's employees and equipment will not be permitted to work near overhead wires or apparatus.

2.09 The Contractor shall conduct their work and handle their equipment and materials so that no part of any equipment should foul an operated track or wire line without the written permission of the Railroad Company(s). When it becomes necessary for the Contractor to foul any track, they must give the Railroad Company(s) written notice of their intentions twenty-one (21) days in advance, so that if approved, arrangements may be made for proper protection of the Railroad Company(s).

2.10 The Contractor's equipment shall not be placed or put into operation adjacent to tracks without first obtaining permission from the Railroad Company(s). Under no circumstances shall any equipment or materials be placed or stored within fifteen (15) feet from the centerline of the closest track.

2.11 Materials and equipment belonging to the Contractor shall not be stored on MBTA Railroad Property without first having obtained permission from the Railroad Company(s), and such permission will be on the condition that the MBTA and/or Railroad Company(s) will not be liable for damage to such materials and equipment from any cause. The Contractor shall keep the

tracks adjacent to the site clear of all refuse and debris that may accumulate from construction operations, and shall leave the MBTA Railroad Property in the condition existing before construction commencement. Equipment repair, refueling or extended storage is prohibited on MBTA Railroad Property.

2.12 The Contractor shall consult the Railroad Company(s) in order to determine the type of protection required to insure safety and continuity of railroad operations. The railroad field engineer may assign track foremen, flagmen, signalmen or other employees deemed necessary for protective services by the Railroad Company(s), to insure the safety of trains and MBTA Railroad Property. The cost of same shall be paid directly by the contracting party with an advance deposit to the Railroad Company(s), unless otherwise approved.

2.13 The provision of such protective services, and other precautionary measures, shall not relieve the Contractor from liability for the cost of any and all damages caused by their operations.

2.14 The Railroad Company(s) will require protection during all periods when the Contractor is working on, over, under, within or adjacent to MBTA Railroad Property or as may be deemed necessary. When protection is required, the Contractor shall make the request in writing to the Railroad Company(s) at least twenty-one (21) days before such protection is required.

2.15 The Contractor shall not bill the Railroad Company(s) or MBTA for any work which they are proposing to perform, unless the Railroad Company(s) or MBTA authorizes the said work in writing. This work must be to the benefit of the MBTA or Railroad Company(s).

2.16 The Contractor, subcontractor and respective employees who will come within the limits of the MBTA Railroad Property, must first attend the Railroad Company(s) Safety Orientation Class. They are required to comply with the Railroad Company(s) Safety Requirements throughout the entire construction period. All costs associated with compliance of the Railroad Company(s) Safety Requirements will be at the sole expense of the Contractor and subcontractors.

A. The Contractor for the project must appoint a qualified person who will be designated as a Safety Representative. They must be approved by the Railroad Company(s) Safety Representative. The Contractor's designee will be responsible to give Safety Orientation to the Contractor's/subcontractor's employees who will come onto the MBTA's Railroad Property for short periods of time after the initial Safety Orientation Class has been given by the Railroad Company(s). The Contractor's designee will keep the Railroad Company(s) Safety Representative informed of the temporary employees who received Safety Orientation. The Railroad Company(s)

Safety Orientation Class will be repeated when employee turnover or groups of Contractor's and subcontractor's employees are such that another Railroad Company(s) Safety Orientation Class is justified.

B. All Contractors shall follow established safety procedures and remain 15 feet or more from the closest rail of the closest track. When it becomes necessary for Contractors to encroach on this 15 foot limitation, the proper fouling procedures will be arranged with the Railroad Company(s).

C. Contractors will establish the 15 foot foul line by installing stakes and taping off the area prior to beginning work.

2.17 Upon completion of the work, the Contractor shall remove from the MBTA Railroad Property, all machinery, equipment, surplus materials, falsework, rubbish, temporary buildings and other property of the Contractor, or any subcontractor, and shall leave MBTA Railroad Property in a condition satisfactory to the MBTA and Railroad Company(s). Failure to comply will result in Railroad Company(s) forces restoring MBTA Railroad Property at the Contractor's expense.

2.18 The Contractor will pay the Railroad Company(s) directly, for all protective services unless otherwise approved. The services are performed to insure safe operation of trains when construction work would, in the Railroad Company(s) opinion, be a hazard.

SECTION 3. DEFINITION OF HAZARD

3.01 Protection Services will be required whenever the Contractor is performing work on, over, under, within or adjacent to MBTA Railroad Property. This will include excavating, sheeting, shoring, erection, removal of forms, handling material, using equipment which by swinging or by failure could foul the track, and when any other type of work being performed, in the opinion of the Railroad Company(s), requires such service.

3.02 Railroad operations will be considered subject to hazard when explosives are used in the vicinity of MBTA Railroad Property during the driving or pulling of sheeting for footings adjacent to a track, when erecting structural steel across or adjacent to a track, when operations involve swinging booms or chutes that could in any way come closer than 5 feet to the center line of a track or wire line. None of these or similar operations, shall be carried on without Railroad Company(s) protective services personnel on site.

3.03 A signal line or communication line shall be considered fouled and subject to hazard when any object is brought closer than ten (10) feet to any wire or cable. An electrical supply line shall be considered fouled and subject to hazard when any object is brought closer than ten (10) feet to any

wire of the line.

3.04 As excavation approaches pipes, conduits, or other underground structures on or adjacent to MBTA Railroad Property, digging by machinery shall be discontinued and the excavation shall continue by means of hand tools. All existing pipes, poles, wires, fences, property line markers, and other structures, which the MBTA and/or Railroad Company(s) decides must be preserved in place, shall be carefully protected from damage by the Contractor or its Owner. Should such items be damaged, they shall be restored by the Railroad Company(s), at the Owner's or Contractor's sole expense to the original condition prior to construction commencement. If any excavation is taken beyond the work limit indicated on the approved Drawings or prescribed herein, the Owner or its Contractor shall backfill and compact to the satisfaction of the Railroad Company(s) at the Contractors expense.

SECTION 4. BACKFILL

4.01 Backfilling

A. All backfill material adjacent to any Railroad Company(s) facility shall be approved by the Railroad Company(s). Backfill material shall be free from hard lumps and clods larger than 3 inches in diameter, and free from large rocks or stumps. Uniformly fine material shall be placed next to any pipe liable to dent or break.

B. All backfill material shall be compacted at or near optimum moisture content, in layers not exceeding 6 inches in compacted thickness by pneumatic tampers, vibrator compactors, or other approved means to the base of the railroad subgrade. Material shall be compacted to not less than 95 percent of AASHTO T 99, Method C. The Contractor will be required to supply to the job site, ballast stone (AREA #4) to be installed by the Railroad Company(s).

4.02 Certification

The Owner or its Contractor shall provide testing, through the use of a testing lab or Professional Engineer, to insure that the in place density of the backfill meets or exceeds the requirements of Section 4.01(B). Written certification of the tests shall be given to the Railroad Company(s) immediately upon completion of the test.

4.03 Alternate

In the case of an open cut crossing of the MBTA Railroad Property, the Owner or its Contractor may backfill with concrete having a three-day compressive strength of 1000 psi to the base of the track subgrade. This

may be used in lieu of providing the certification of proper compaction when using gravel backfill. The Owner or its Contractor will be required to supply to the job site, ballast stone (AREA #4) to be installed by the Railroad Company(s).

SECTION 5. CLEARANCES

5.01 Staging falsework or forms shall at all times be maintained with a minimum vertical clearance of 226" above top of the high rail and a minimum horizontal clearance of 15' from the center line of track.

SECTION 6. PROTECTION SERVICES

6.01 The MBTA shall require railroad inspection and may require railroad flagging. Prior to the start of any work on MBTA Railroad Properly, the Owner or its Contractor shall submit a deposit to the amount required by the Railroad Company(s). If Railroad Company(s) expenses are greater than the amount of deposit, the Owner or its Contractor shall reimburse the Railroad Company(s) for the balance when billed, and, if the Railroad Company(s) expenses are less than the amount of deposit, the Railroad Company(s) will refund the balance to the Owner or its Contractor. The Railroad Company(s) reserves the right to request additional deposits as project work progresses.

6.02 If the MBTA or Railroad Company(s) determines that flagmen are necessary, the number required shall be on duty at the site during the hours of hazard described under Section 3. No work shall be performed if flagmen are required but are not on duty.

6.03 It shall be the responsibility of the Owner or its Contractor to keep the MBTA and Railroad Company(s) informed at all times when the Owner or its Contractor shall be working on, over, under, within or adjacent to MBTA Railroad Property and creating the hazards described under Section 3. Failure of the Owner or its Contractor to give the MBTA and Railroad Company(s) suitable advance notice of hazardous operation shall result in the shutdown of the work by the Railroad Company(s), until such time as sufficient numbers of flagmen are on duty at the site. If this becomes a repeat occurrence, the Contractor will be removed from the project.

6.04 The Railroad Company(s) will make its best effort to provide protective services personnel. Should the situation arise where such personnel are not available, Contractor operations must cease. The Railroad Company(s) is not liable for any monetary claims incurred during the absence of protective services personnel.

SECTION 7. INSPECTION

7.01 If deemed necessary by the Director of Engineering for MBTA Railroad Operations, the MBTA will furnish and assign an engineer(s) for inspection and the Railroad Company(s) will furnish an appropriate inspector for general inspection purposes or for general protection of MBTA Railroad Property and operations during construction. All protection services will be at the expense of the Owner or its Contractor.

SECTION 8. EXTRA-CONTRACT SERVICES

8.01 Temporary and permanent changes of tracks and all railroad utilities made necessary by the work of the Contractor, will be made by the MBTA or Railroad Company(s) at the expense of the Owner or its Contractor.

8.02 All other changes made or services furnished by the Railroad Company(s), at the request of the Owner or its Contractor, will be at the Owner's or its Contractor's expense.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# III

# INSURANCE SPECIFICATIONS

The insurance outlined in these Specifications is required of the Owner or Contractor, and shall be provided by or in behalf of all subcontractors performing any portion of the work. The Owner or Contractor shall be responsible for any modifications, deviations or omissions of the required insurance as it applies to subcontractors.

All insurance policies, unless otherwise specified under Railroad Protective Liability Insurance, are to be written either on an occurrence basis or, if a claims-made form, applicable renewals must have a date retroactive to the construction start date and shall be maintained in force for one year following the acceptance of the work by the MBTA or its duly authorized representative.

With the exception of Railroad Protective Liability Insurance, all insurance policies must name the MBTA as an additional insured as its interest appears and waive any rights of subrogation against the MBTA.

Certificates of Insurance evidencing (1) either the claims-made or occurrence form coverage, (2) work description/location, (3) Owner or Contractor's corporate name, and (4) individual, company, government agency or municipality for which the work is being performed, are to be furnished to the MBTA prior to work commencement, and within fifteen (15) days of expiration of the insurance coverage, when applicable.

All policies must contain a minimum thirty (30) day written notice of cancellation clause, and provide that the Insurance Company shall notify the Owner, Contractor, MBTA and Railroad Company(s), via registered mail, of any cancellation, change or expiration of the policy.

Original Insurance Certificate(s) shall be received and approved by the MBTA before the Owner or Contractor will be allowed entry upon MBTA Railroad Property. Certificates, including any required endorsements, shall be furnished to the MBTA, c/o Risk Manager, Office of the Treasurer-Controller, Ten Park Plaza, Room 8450, Boston, MA 02116, and shall provide stated coverage and a provision that Notice of Accident (occurrence) and Notice of Claim shall be given to the Insurance Company as soon as practicable after notice to the insured(s).

Original Insurance Binders reflecting Railroad Protective Insurance shall be received and approved by the MBTA and the appropriate Railroad Company(s) prior to entry upon MBTA Railroad Property. Mailing addresses for transmittal of original Insurance Binders to the named insured Railroad Company(s) are contained on Page Four of these Specifications.

The Owner or Contractor shall indemnify, defend and save harmless the MBTA and the appropriate Railroad Company(s) from and against any and all liabilities, losses (including losses of revenue), claims, costs, damages and expenses (including reasonable attorney's fees and expenses) that may be asserted against or incurred by the MBTA and the Railroad Company(s) arising from or as a result of the Owner or Contractor's work, or its use of adjacent land. Said indemnification shall include claims, whether covered by insurance or not, including, but not limited to

Workers Compensation and similar insurance.

The Owner or Contractor shall maintain, during the life of the contract, from company (s} authorized to do business in the Commonwealth of Massachusetts and satisfactory to the MBTA:

**A.** **COMMERCIAL GENERAL LIABILITY INSURANCE** for personal injury, bodily injury and property damage in an amount not less than $1,000,000 per occurrence and $3,000,000 in the aggregate covering all work performed on over or adjacent to MBTA Railroad Property (the “work"), including:

1. All operations;

2. Contractual liability;

3. Coverage for the so-called "X, C, U" hazards, i.e., collapse of building, blasting, and damage to underground property;

4. Asbestos abatement, when applicable.

**B.** **AUTOMOBILE LIABILITY INSURANCE** including the use of all vehicles owned, non-owned, leased and hired, in an amount not less than $1,000,000 combined single limit covering all the work.

**C.** **WORKER'S COMPENSATION INSURANCE** including Employees, Liability Insurance, as provided by Massachusetts General Laws, Chapter 152, as amended, covering all the work.

**D.** **UMBRELLA LIABILITY COVERAGE** in an amount not less than $10,000,000 per occurrence covering all the work.

**E.** **HAZARDOUS MATERIALS INSURANCE** if the work involves hazardous materials, the following coverage is required:

1. **Pollution Liability insurance** for sudden and gradual occurrences in an amount not less than $1,000,000 per occurrence and $5,000,000 in the aggregate arising out of the work, including but not limited to all hazardous materials identified in the contract.

2. When applicable, the Owner or Contractor shall designate the disposal site and furnish a Certificate of Insurance from the Disposal Facility for Environmental Impairment Liability Insurance for (a) sudden and accidental occurrences in an amount not less than $3,000,000 per occurrence and $6,000,000 in the aggregate and (b) non-sudden occurrences in an amount not less than $5,000,000 per occurrence and $10,000,000 in the aggregate.

3. Certificates of insurance shall clearly state the hazardous materials exposure work being performed.

**F.** **RAILROAD PROTECTIVE LIABILITY INSURANCE** is specifically designed for insuring Railroads, and is purchased by the Owner or Contractor in the name of the MBTA and the Railroad Company(s). **The Railroad Company(s) is the named insured on the policy.** Railroad Protective Liability Insurance is required for any work performed within fifty (50) feet from center line of the nearest railroad track; it is not a substitute for any types of insurance outlined in these Specifications. Required limits are:

Bodily injury: not less than $5,000,000 for all damages arising out of bodily injuries to or death of one person, and subject to that limit for each person, a total limit of $6,000,000 for all damages arising out of bodily injury to or death of two or more persons in any one accident;

Property Damage: not less than $10,000,000 or all damages arising out of injury to or destruction of MBTA property in any one accident, and subject to that limit per accident, a total of $10,000,000 in the aggregate for all damages arising out of injury to or destruction of MBTA property.

Questions regarding insurance should be directed to MBTA's Risk Manager at (617) 222-3064.

Questions regarding train counts and train speeds should be directed to the appropriate Railroad Company(s) listed on Page Four.

PROOF OF INSURANCE

MAILING ADDRESSES:

| | |
|---|---|
| MBTA | Risk Manager<br>c/o Treasurer-Controller<br>10 Park Plaza<br>Boston, MA 02116<br>cc: Massachusetts Realty Group |
| National Railroad Passenger Corporation (Amtrak) | Boston Division Office<br>c/o Division Engineer<br>2 South Station 5th Floor<br>Boston, MA 02110 |
| CSX Transportation Inc. | 500 Water St.<br>Jacksonville, FL 32202 |
| Bay Colony Railroad Corporation | General Manager<br>4 Freight House Road<br>East Wareham, MA 02571 |

| | |
|---|---|
| Boston and Maine Corporation and Springfield Terminal Railway Co. | Chief Engineer<br>402 Amherst Street<br>Suite 300<br>Nashua, NH 03063-1287 |
| Providence and Worcester Railroad Company | P. O. Box 1188<br>Worcester, MA 01601 |
| Keolis Commuter Services | Chief Engineering Officer<br>470 Atlantic Ave.<br>Boston, MA 02110 |

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# IV

## PIPELINE OCCUPANCY SPECIFICATIONS

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## SECTION 1. GENERAL REQUIREMENTS

### 1.01 DESCRIPTION OF WORK AND LOCATION

These specifications apply to the design and construction of pipelines carrying flammable and non-flammable substances and to casings over 4-inches in diameter containing wires and cables, under, across or along MBTA Railroad Property, facilities and tracks.

### 1.02 LICENSE TO ENTER RAILROAD PROPERTY

A. Entry upon MBTA Railroad Property for the purpose of conducting surveys, field inspections, obtaining soil information, or any other purpose associated with the design and engineering of the proposed occupancy, will be authorized by an MBTA License for Entry (See "Guidelines and Procedures for Construction on MBTA Railroad Property").

B. Issuance of the License does not constitute authority to proceed with the actual construction.

### 1.03 WORK ON RAILROAD PROPERTY

A. The safety and continuity of train operations shall be the first priority. The Applicant shall arrange the work so that the trains will be protected and safeguarded at all times. Whenever the work may affect the safety and movement of trains, the method, sequence and time schedule of performing such work shall be submitted to the Director of Engineering for MBTA Railroad Operations or their authorized representative for approval.

B. The Applicant waives all claims against the Railroad Company(s) and/or the MBTA for delays or any interference occasioned by railroad traffic or railroad maintenance.

C. All Applicant-designed temporary construction on MBTA Railroad Property shall be designed in accordance with the appropriate railroad criteria and all construction performed on, over, under, within or adjacent to MBTA Railroad Property will be subject to the inspection and approval of the Railroad Company(s) and/or MBTA.

D. A minimum of fourteen (14) days advance written notice shall be given to the Railroad Company(s) prior to construction related activities.

E. The Railroad Company(s) will furnish such qualified flagmen, signalmen or protection men as may be required to insure complete

protection of train operations and railroad facilities. The need for this type of service will be determined by the Railroad Company(s) on the basis of railroad regulations and the Applicant's approved construction schedule. No work shall proceed without proper protection on the site.

F. All expenses incurred in connection with protection of railroad facilities by Railroad Company(s) employees will be borne by the Applicant. Billings for such service or expense, including labor, materials and equipment will be made directly to the Applicant for payment.

G. During construction, railroad traffic shall be maintained at all times without interruption, except when approved in advance, in writing, by the Director of Engineering for MBTA Railroad Operations or their authorized representative.

H. All construction operations shall be conducted so as not to interfere with, interrupt, or endanger the operation of trains, nor damage, destroy, or endanger the integrity of railroad facilities. All work on or near MBTA Railroad Property shall be conducted in accordance with the Railroad safety rules and regulations. The Applicant shall secure and comply with the Railroad safety rules and shall give written acknowledgment to the Railroad Company(s) that they have been received, read, and understood by the Applicant and their employees. Construction operations will be subject to Railroad Company(s) inspection at any and all times.

I. All cranes, lifts, or other equipment that will be operated in the vicinity of the MBTA's electrification and power transmission facilities shall be electrically grounded as directed by the Railroad Company(s).

J. At all times when the work is progressing, a field supervisor for the work with no less than twelve (12) months experience in the operation of the equipment being used shall be present. Certification of the above must be submitted to the Railroad Company(s).

K. Whenever equipment or personnel are working closer than fifteen (15) feet to the closest rail of an adjacent track, that track shall be considered as being obstructed. As best possible, all construction operations shall be conducted no less than this distance. Construction operations closer than fifteen (15) feet to the closest rail of a track shall be conducted only with the permission of, and as directed by, a qualified Railroad Company(s) employee present at the work site.

L. Crossing of tracks at grade by equipment and personnel is prohibited except by prior arrangement with, and as directed by, the Director of

Engineering for MBTA Railroad Operations or their authorized representative.

M. All tunneling, jacking and boring operations within railroad influence lines will be done on a 24 hour per day basis to minimize Railroad exposure to construction hazards.

1.04 COORDINATION

The Applicant shall coordinate the work with their Contractors, subcontractors, utility companies, governmental units, and any affected Railroad Company(s) with regard to site access, establishment and use of temporary facilities, work schedules, and other elements of the specified work which require interfacing with others.

1.05 LAYOUT OF WORK

The Applicant shall lay out their work true to lines and grades indicated on the Drawings and shall be responsible for all measurements in connection therewith. The Applicant will be held responsible for the execution of the work to such lines and grades indicated on the approved construction Drawings or such other lines and grades as may be directed or established by the Director of Engineering for MBTA Railroad Operations or their authorized representative.

1.06 INDEMNIFICATION AND INSURANCE

See requirements in "Guidelines and Procedures for Construction on MBTA Railroad Property" and "Insurance Specifications."

1.07 SCIENTIFIC OR HISTORIC ARTIFACTS

The Applicant shall immediately notify the Director of Engineering for MBTA Railroad Operations of the discovery of scientific or historical artifacts and shall protect same until identified and removed by the appropriate Authorities exercising jurisdiction.

1.08 RECORD DOCUMENTS

A. The Applicant shall furnish the Railroad Company(s) and the MBTA with one reproducible "As Built" copy of each approved Construction Drawing, marked to indicate all changes and deviations from same.

B. All project record documents shall be received and accepted by the MBTA and the Railroad Company(s) prior to final inspection.

## SECTION 2. SUBMITTALS

### 2.01 APPLICATION FOR OCCUPANCY

The Applicant must agree, upon approval of the construction details by the Director of Engineering for MBTA Railroad Operations, to execute the MBTA Pipeline Occupancy Agreement and pay any required fees and/or rentals outlined therein. Refer to "Guidelines and Procedures for Construction on MBTA Railroad Property" for application policy.

### 2.02 SUBMISSION OF CONSTRUCTION DRAWINGS AND SPECIFICATIONS

A. Six (6) sets of Drawings and specifications for proposed pipeline occupations shall be submitted to the AGM for Real Estate and Asset Development and meet the approval of the Railroad Company(s) and the MBTA prior to the start of construction. These plans are to be prepared in sizes as small as possible arid are to be folded to an 8-1/2 inch by 11-inch size (folded dimensions) with a 1-1/2 inch margin on the left side and a 1-inch margin on the top.

1. After folding, the title block and other identification of the Drawings shall be visible at the lower right corner, without the necessity of unfolding. Each Drawing shall bear an individually identifying number and an original date, together with subsequent revision dates, clearly identified on the Drawing.
2. All Drawings are to be individually folded or rolled and where more than one Drawing is involved, they shall be assembled into complete sets before submission to the MBTA.

B. Drawings shall be to scale and show the following (see attached Plates).

1. Plan view of proposed pipeline in relation to all railroad facilities.
2. Location of pipe (in feet) from nearest railroad milepost, centerline of a railroad bridge (giving bridge number), or centerline of an existing or former passenger station, or other fixed point. In all cases, the name of the City or Town and County in which the proposed facilities are located must be shown.
3. Profile of ground on centerline of pipe from field survey showing relationship of pipe and casing to ground level, tracks and other facilities. For longitudinal occupations, the profile of adjacent track(s) must be shown.

4. All MBTA property lines. If pipeline is in a public highway, the limits of the right-of-way for the highway shall be clearly indicated with dimensions from centerline.
5. The angle of crossings in relation to centerline of tracks.
6. Location of valves or control stations of the pipeline.
7. "Pipe Crossing Data Sheet" completed and out on Plan.

C. The Drawing must be specific (both on MBTA Railroad Property and under tracks that are not on MBTA Railroad Properly) as to:

1. Method of installations.
2. Size and material of casing pipe.
3. Size and material of carrier pipe.

These items shall not have an alternative.

D. Once an application is approved by the Director of Engineering for MBTA Railroad Operations or their authorized representative, proposed variances from the approved plans, specifications, method of construction, etc., will be resubmitted for approval.

E. Location and dimensions of jacking, boring, or tunneling pits shall be shown with details of their sheeting and shoring. If the bottom of the pit excavation nearest the adjacent track intersects a line from a point 5.5 feet horizontally from center line of adjacent track at the plane of the base of fall drawn on a slope of 2 horizontal to 1 vertical, submit design and details of the pit construction to the MBTA for approval complete with computations prepared by a Registered Professional Engineer. In any event, the face of the pit shall be no less than 25 feet from adjacent track, unless otherwise approved by the Director of Engineering for MBTA Railroad Operations or their authorized representative. Pits shall be fenced, lighted, and otherwise protected as directed by the Railroad Company(s).

F. All Drawings and computations, including those submitted by Contractors, must bear the seal of a Registered Professional Engineer.

G. Computations for all structures involving the support or protection of railroad track, embankment and facilities must be prepared by and bear the seal of a Registered Professional Engineer and shall be submitted within the construction Drawings.

H. When computer calculations are included with design calculations, the following documentation shall be furnished:

1. A synopsis of the computer program(s) stating briefly required input, method of solution, approximations used, second order analysis incorporated, specifications or codes used, cases considered, output generated, extent of previous usage of certification of program(s) and program(s) author.

2. Identification by number, indexing and cross-referencing of all calculation sheets, including supplemental "long-hand" calculation sheets.

3. Fully identified, dimensioned, and annotated diagram of each member or structure being considered.

4. Clear identification and printing of all input and output values, including intermediate values if such values are necessary for orderly review.

5. Identification of the processing unit, input/output devices, storage requirements, etc., if such supplemental information is significant and necessary for evaluation of the submittal.

I. Specifications shall conform to Construction Specifications Institute (CSI) 16 Division, 3-part Section Format.

J. If other than American Railway Engineering Association (AREA), American Society for Testing and Materials (ASTM), or American National Standards Institute (ANSI) specifications are referred to for design, materials or workmanship on the Construction Drawings and specifications for the work, then copies of the applicable sections of such other specifications referred to shall accompany the Construction Drawings and specifications for the work.

## SECTION 3. TEMPORARY FACILITIES AND CONTROLS

### 3.01 REQUIREMENTS OF REGULATORY AGENCIES

Applicant shall:

A. Obtain and pay all costs for required permits for installation and maintenance of temporary facilities and controls.

B. Comply with all applicable Federal, State and local codes, regulations and ordinances.

C. Comply with regulations and requirements of all utility or service companies from which temporary utilities or services are obtained, and pay all costs incurred therewith.

## 3.02 INSTALLATION AND COORDINATION - GENERAL

Applicant shall:

A. Install all temporary facilities and controls in a neat and orderly manner.

B. Make all temporary facilities structurally and functionally sound throughout.

C. Construct temporary facilities and controls to give continuous service and to provide safe working conditions.

1. Enforce conformance with applicable standards
2. Enforce safe practices.

D. Modify, extend or relocate temporary facilities and controls as work progress requires.

E. Locate temporary facilities and controls to avoid interference with, or hazards to:

1. Work or movement of railroad personnel or traffic.
2. Vehicular traffic.
3. General Public.
4. Work of other contracts.
5. Railroad Passengers.

F. Obtain easements as may be required across non-MBTA Railroad Property.

G. Provide materials for temporary facilities and controls for the purpose intended and shall not violate requirements of applicable codes and shall not create unsafe conditions.

## 3.03 SANITARY FACILITIES

Prior to the start of work, the Applicant shall furnish necessary toilet conveniences, secluded from public observation. They shall be kept in a clean and sanitary condition and comply with the requirements and regulations of the area in which the work is performed.

3.04 LIGHT AND POWER

Applicant shall make their own arrangements for obtaining temporary light and power as required for the work, and shall maintain such temporary facilities in a proper and safe condition, including compliance with applicable codes.

3.05 TEMPORARY WATER

Applicant shall make their own arrangements for obtaining all temporary water service as required for the work.

3.06 TEMPORARY TRAFFIC CONTROLS

Applicant shall cooperate with the directives of the MBTA and/or Railroad Company(s) regarding vehicular traffic control and provide any temporary controls or devices required to eliminate or minimize congestion or obstruction of vehicular traffic caused by the work, including use of designated routes of ingress and egress from the work area.

3.07 TEMPORARY WORK AND STORAGE AREAS

A. The areas designated by the MBTA as the temporary parking, work and storage area(s) will be provided to the Applicant in accordance with the terms of the MBTA License Agreement.

B. All designated temporary parking, work and storage areas used by the Applicant shall be restored to their original condition prior to completion of the work, subject to inspection and approval of the MBTA and the Railroad Company(s).

3.08 POLLUTION ABATEMENT CONTROLS

Applicant shall:

A. Conduct operations in a manner to minimize pollution of the environment surrounding the area of work by every means possible. Specific controls shall be provided as follows:

1. Vehicles: All vehicles and material transport trucks leaving the site and entering paved public streets shall be cleaned of mud and dirt clinging to the body and wheels of the vehicle. Trucks arriving at or leaving the site with materials shall be loaded in a manner which will prevent dropping of materials or debris on the streets. Spills of materials in public areas shall be removed immediately at no cost to the MBTA or Railroad Company(s).

2. Waste Materials: No waste or erosion materials shall be allowed to enter natural or man-made water or sewage removal systems. Erosion materials from excavations, borrow areas or stockpiled fill shall be contained within the work area. The Applicant shall develop methods for control of waste and erosion which shall include such means as filtration, settlement and manual removal to satisfy the above requirements. Do not dispose of machinery lubricants, fuels, coolants and solvents on the site. If hazardous waste is encountered, the Applicant shall dispose of it in accordance with all federal, state and local codes. Verification of proper disposal must be provided, in writing, to the MBTA and the Railroad Company(s).

3. Burning: No burning of waste shall be allowed without prior written permission. In cases where permission is granted, burning shall be conducted in accordance with the regulations of the appropriate jurisdictional agency.

4. Dust Control: The Applicant shall at all times control the generation of dust by their operations. Control of dust is mandatory and shall be accomplished by water sprinkling or by other methods approved by the MBTA or Railroad Company(s).

5. Noise Control: The Applicant shall take every action possible to minimize the noise caused by their operation. When required by agencies having jurisdiction, noise producing work shall be performed during less sensitive hours of the day or week as directed by the MBTA or Railroad Company(s) or as required by local ordinance.

6. Environmental: All local and state environmental laws will be strictly adhered to. All applications, permits, licenses, approvals, etc., will be the sole responsibility of the Applicant.

B. Submit a program for pollution control with applicable licenses and permits for all piping carrying non-potable liquids, gases or other pollutants.

## 3.09 PROTECTION OF PERSONS AND PROPERTY

A. Safety Requirements

1. The Applicant must adhere to the most stringent provisions of the applicable statutes and regulations of the political subdivision in which the work is being performed. The Applicant must also observe the Department of Labor-

Occupational Safety, Health Administration provision, pertaining to the safe performance of the work, and further, the methods of performing the work must not involve undue danger to the personnel employed thereon, Railroad Company(s) employees, the public, or to public and private property. Should charges of violation of any of the above be issued to the Applicant in the course of the work, a copy of each charge shall immediately be forwarded to the Railroad Company(s). The Applicant shall pay all fines and penalties levied against him.

2. The Applicant shall erect and maintain, as required by existing conditions and progress of the work, all reasonable safeguards for safety and protection. This includes posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent utilities.

B. Safety of Persons and Property - The Applicant shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to:

1. All employees on the work site and all other persons who may be affected.

2. All materials and equipment, whether in storage on or off the site, under the care, custody or control of the Contractor or any of their subcontractors.

3. Other property at the site or adjacent thereto, including walks, pavements, roadways, structures, and utilities not designated for removal, relocation or replacement in the course of construction. Any damage to such items shall be restored to original condition by the Applicant at no cost to the MBTA or Railroad Company(s).

C. First Aid

The Applicant shall maintain adequate first aid supplies at the site as prescribed by Federal, State or Local codes and regulations.

D. Use of Explosives

Non blasting methods are preferred. See "Blasting Specifications."

E. Site Security

The Applicant shall:

1. Maintain a secure work site protecting the MBTA and the Railroad Company(s) interests and property from claims arising from trespass, theft and vandalism.

2. Permit access to the work site only to employees, Contractors and those persons having business related to the work.

3. Provide security measures as required to protect Contractor or subcontractor's tools, equipment and property from damage, theft or vandalism.

4. Assume all costs for any MBTA and/or local police details required by the work.

3.10 VERMIN CONTROL

A. Do not permit food scraps, lunch bags, food wrappers or other items which would attract rats or other vermin to be left lying around the site. Deposit such items in closed, rat-proof metal containers for disposal on a regular basis.

B. The Applicant must provide vermin control as required by the MBTA or Railroad Company(s).

3.11 RUBBISH AND DEBRIS REMOVAL

A. Rubbish and debris resulting from the work must be neatly piled in a single location and legally disposed of at least once a week. If rubbish or debris interferes with railroad activities, or creates a fire or safety hazard, it must be removed on a more frequent basis.

B. Volatile waste such as mineral spirits, oil, or paint thinner shall not be disposed of in storm or sanitary drains, streams or waterways or any location upon the site.

SECTION 4. PIPELINE OCCUPANCY GENERAL CRITERIA

GENERAL:

4.01 METHOD OF INSTALLATION:

A In a public way:

1. No work shall be done without a Railroad Company(s) Inspector present.

2. Open cuts will not be allowed in or immediately adjacent to an at

grade crossing. Sleeves will be installed by the jerking method, unless otherwise approved by the Director of Engineering for MBTA Railroad Operations.

3. Jerking is the preferred method of installation in or immediately adjacent to and at grade crossing. The sleeve may be installed by the open cut method with the Applicant paying for the complete rebuilding of the crossing, pending approval of the Director of Engineering for MBTA Railroad Operations. Approval will be given only under very unusual circumstances.

4. Jacking is the preferred method of installation in or immediately adjacent to and at grade crossing scheduled for rebuilding. The sleeve may be installed by the open cut method within seven (7) calendar days of the scheduled date of the crossing reconstruction. In the case of any open cut, strict adherence shall be made to the backfill specifications which provide the MBTA with written certification from a testing lab or Professional Engineer, that the backfill density requirements of the MBTA specifications have been met or exceeded.

B. Not within a Public Way:

The preferred method of crossing the railroad is by jacking of a pipe sleeve under the railroad. Only upon written request, will an alternate of open cut be given consideration. The engineering decision shall be based upon, but not limited to, the following: (1) track usage, (2) depth of cut, (3) soil conditions, (4) physical restraints. In the event an open cut is allowed, the following items shall be adhered to, and (5) any other circumstances which may necessitate an open cut.

1. The installation is to be a continuous operation and performed according to an MBTA approved schedule.

2. No work shall be done without a Railroad Company(s) Inspector present.

3. MBTA backfill specifications by the Owner or its Contractor.

4. The Owner or its Contractor may be required to provide a non-refundable lump sum payment for "after the fact maintenance." The determination of this amount is based on the individual situation. No work will be allowed until this payment is received. This payment is not to be confused with payments for Drawings and specification review, flagging, inspection, etc. (also required from the Owner or its Contractor before they enter upon MBTA property.)

## 4.02 GENERAL REQUIREMENTS

A. Pipelines under or across MBTA tracks on rights-of-way shall be encased in a larger pipe or conduit called the casing pipe as indicated in Plate II.

B. Casing pipe will be required for all pipelines carrying oil, gas, petroleum products, or other flammable, highly volatile substances which, from their nature or pressure, might cause damage if escaping on or near MBTA Railroad Property.

C. For non-pressure sewer or drainage crossings where the installation can be made without interference to railroad operations, the casing pipe may be omitted when the pipe strength is capable of withstanding railroad loading. This type of installation must be approved by the Director of Engineering for MBTA Railroad Operations.

D. The casing pipe shall be laid across the entire width of the right-of-way. Casing pipe shall extend beyond the right-of-way when the right-of-way line on either side of the tracks is less than the minimum length of casing specified in Section 6, Para. 6.01(E).

E. Pipelines laid longitudinally on railroad right-of-way shall be located in accordance with Plate III. If located within 25 feet of the closest rail of any track or closer than 45 feet to nearest point of any bridge, building or other structure, the carrier pipe shall be encased.

F. Where practicable, pipelines shall be located to cross the tracks at approximate right angles, but preferably at not less than 45 degrees.

G. Pipelines shall not be placed within a culvert, under railroad bridges, or closer than 45 feet to any portion of a railroad bridge, building, or other structure, except in special cases, and then by special design, as approved by the Director of Engineering for MBTA Railroad Operations.

H. Pipelines carrying liquefied petroleum gas shall, where practicable, cross the railroad where tracks are carried on embankment.

I. Any replacement or modification of an existing carrier pipe and/or casing shall be considered a new installation, subject to the requirements of these Specifications.

J. Where laws or orders of public authority prescribe a higher degree of protection than specified herein, the higher degree so prescribed shall be deemed a part of these Specifications.

K. Pipelines and casings shall be suitably insulated from underground conduits carrying electric wires on MBTA Railroad Property.

4.03 INSPECTION AND TESTING

For pipelines carrying flammable or hazardous materials, ANSI Codes B 31.8 and B 31.4, current at time of constructing the pipeline, shall govern the inspection and testing of the facility on MBTA Railroad Property, except that proof-testing of strength of carrier pipe shall be in accordance with the requirements of ANSI Code B 31.4, as applicable, for all pipelines carrying all liquefied petroleum gas, natural or manufactured gas, and other flammable substances.

4.04 CATHODIC PROTECTION

A. Cathodic protection shall be applied to all pipelines and casings carrying flammable substances.

B. Where casing and/or carrier pipe is cathodically protected by other than anodes, the Director of Engineering for MBTA Railroad Operations shall be notified and suitable testing shall be made. This testing shall be witnessed by the Railroad Company(s) to insure that other railroad structures and facilities are adequately protected from the cathodic current in accordance with the recommendations of Reports of Correlating Committee on Cathodic Protection, current issue by the National Association of Corrosion Engineers.

4.05 SOIL INVESTIGATIONS

A. Soil borings (or other soil investigations approved by the Railroad Company(s) will be performed to determine the nature of the underlying material for all pipe crossings under tracks. See Test Boring Specifications.

B. Borings shall be made on each side of the tracks, on the centerline of the pipe crossing, and as close to the tracks as practicable.

C. Soil borings shall be in accordance with the current issue of the American Railway Engineering Association Specifications, Chapter 1, Part 1, "Specifications for Test Borings". Soils shall be investigated by the split- spoon and/or thin-walled tube method and rock shall be investigated by the Boring method specified therein.

D. Soil boring logs shall clearly indicate all of the following:

1. Boring number as shown on boring location Drawing.

2. Elevation of ground at boring, using same datum as the pipeline Construction Drawings.

3. Description or soil classification of soils and rock encountered.

4. Elevations or depth from surface for each change in strata.

5. Identification of where samples were taken and percentage of recovery.

6. Location of ground water at time of sampling and, if available, subsequent readings.

7. Natural dry density in lbs./sq.ft. for all strata.

8. Unconfined compressive strength in tons/sq.ft., for all strata.

9. Water content (percent). Liquid limit (percent) and plastic limit (percent).

10. Standard penetration in blows/ft.

E. The location of the carrier pipe and casing shall be superimposed on the boring logs before submission to the Director of Engineering for MBTA Railroad Operations.

F. Soil investigation by auger, wash, or rotary drilling method is not acceptable.

G. Soil boring logs shall be accompanied by a Drawing drawn to scale showing location of borings in relation to the tracks and the proposed pipe location, the elevation of around surface at each boring, and the elevation of the base of rail of the tracks.

## 4.06 GROUND STABILIZATION

Soil stabilization shall take place prior to the start of jacking. Stabilization shall be achieved by dewatering, grouting or a combination of both to maintain the stability of the face of the heading.

A. The Owner or its Contractor shall lower and maintain the ground water level a minimum of two (2) feet below the invert at all times during construction by well points, vacuum well points, or deep wells to prevent inflow of water and/or soil into the heading. Ground water observation wells shall be installed in the area to be dewatered to demonstrate that the dewatering requirements are being complied with.

B. The grouting Contractor shall be a specialist in the field with a minimum

of five (5) continuous years of successfully grouting soils. All granular soils (silty sands, sand or sand and gravel) shall be stabilized by injection of a cement or chemical grout from the ground surface or from the pipe heading. The stabilization shall extend as far as necessary outside the periphery of the casing pipe in order to maintain a stable face at the heading.

C. Railroad Company(s) forces will survey the crossing prior to, during and after construction. If it is necessary to align or surface the tracks as a result of construction, the Railroad Company(s) will perform the work at the expense of the Owner or the Owner's Contractor.

4.07 SUPPORT OF TRACKS

A. When jacking, boring, or tunneling, temporary track support structures shall be installed. The track support structures shall be provided by the Applicant and installed by the Railroad Company(s) at the Applicant's expense. The Contractors proposed type of temporary track support structures shall be subject to the approval of the Railroad Company(s)'

B. All work involving rail, signals, ties and other track material will be performed by the Railroad Company(s) at the Applicant's expense.

C. The Applicant shall deliver the track support structures to a site approved by the Railroad Company(s). Provisions for unloading shall be provided by the Applicant at no expense to the Railroad Company(s) and the Applicant shall provide the necessary labor to handle the material for pre-installation inventory.

4.08 GEOTECHNICAL MONITORING

**THE FOLLOWING SPECIFICATIONS ARE REQUIRED FOR ALL PIPE JACKING OPERATIONS**.

A. Jacking shall be performed on a continuous basis, 24 hours per day, and 7 days per week.

B. The monitoring points shall be set up one week before the jacking operation begins. The MBTA and Railroad Company(s) shall be notified. Elevation readings shall begin two days prior to the start of jacking and continue for a minimum of two weeks after the completion of the jacking operation. Initial readings immediately after any surfacing operations shall serve as new baseline figures. All future elevation readings shall be compared to the adjusted baseline. If the

track deviates to a condition not acceptable to the MBTA or Railroad Company(s), corrections shall be made at the proponent's expense.

C. Elevation readings shall be taken from the top rail of each track.

D. Elevation readings shall be taken every four hours or two times per shift, i.e., six times per day. The readings shall be faxed to the MBTA and Railroad Company(s) on a daily basis and all information is to be presented in legible print. Additional readings may be required by the MBTA or Railroad Company(s).

E. Stations shall be spaced at 15-1/2 foot intervals. The number of stations required shall be determined by the depth of the pipe. There shall be a minimum of two stations on either side of the centerline jacking. Additional stations may be required at the discretion of the MBTA or Railroad Company(s),

F. Elevation readings must show the date, time, weather conditions and temperature. Each reading must also provide the following information: track number, compass direction, station number, base elevation (with date), static elevation, change in elevation (recorded in hundredths and in inches), dynamic reading and total deflection in inches. See sample sheet attached.

G. Station "0" shall be located at the centerline of the pipe jacking with Stations 1 and being to the right and Stations -1 and -2 being to the left when standing in the gauge of the near track and looking at the receiving pit. In multiple track areas the stations as determined herein are to be carried across each track perpendicular to the near track.

H. Elevation readings taken from the top of the rail for static measurement and the dynamic readings shall be combined and the sum compared to the adjusted baseline. This reading will demonstrate the difference in elevation caused by the jacking operation.

I. The MBTA requires that the truck be maintained at all times within established criteria for the specific track classification. At the completion of the project the requirement for tamping and realigning the tracks, caused by the settlement from the construction activity, remains with the Contractor for the duration as specified by the MBTA in their initial review of the work plans. This tamping and track realignment will be performed by the MBTA or Railroad Company(s) at the sole expense of the Contractor.

## 4.09 PIPELINES ON BRIDGES

A. Pipelines carrying flammable or non-flammable substances which by their nature might cause damage if escaping on or near railroad facilities or personnel shall not be installed on bridges over railroad tracks or bridges carting railroad tracks.

B. The Director of Engineering for MBTA Railroad Operations may approve such an installation when it is demonstrated that no practicable alternative is available.

C. When allowed by the Director of Engineering for MBTA Railroad Operations, pipelines on bridges shall be located in a way to minimize the possibility of damage from vehicles, railroad equipment, vandalism and other external causes. Pipelines on bridges may be installed in a utility bay that is constructed between the girders of the bridge. The utility bay shall be protected from the environment by a removable shield bolted to the girders. This will allow utility companies to comply with the Code of Federal Regulations for Periodic Inspection.

D. In the event of pipe relocation due to the reconstruction of a bridge, the installation of the new pipe must comply with the requirements in these Specifications.

## 4.10 BONDING AND GROUNDING OF PIPELINES IN ELECTRIFIED TERRITORY

A. Carrier pipe shall be enclosed in a metal casing that is isolated from carrier pipe by approved insulators having a dielectric value of not less than 25 kV that provide an air gap between carrier pipe and casing of not less than 2 inches.

B. Carrier pipe supporting hangers, mountings or cradles shall provide an insulation value of not less than 25 kV and an air gap of not less than 2 inches between casing and any portion of mounting assembly.

C. Any grounding or isolation methods used must have a minimum dielectric of 25,000 volts.

## 4.11 ABANDONED PIPELINES OR FACILITIES

A. For all pipeline occupations on the railroad right-of-way, the owner of the pipeline shall notify the MBTA, in writing, of the intention to abandon the pipeline. Upon abandonment the carrier pipe shall be removed and the casing shall be filled with cement grout, compacted sand or other material approved by the Director of Engineering for

MBTA Railroad Operations. If it is impractical to remove the carrier pipe, then the carrier must be filled along with the annular space between the casing and carrier.

B. Facilities other than pipelines shall be removed or altered at abandonment to the satisfaction of the Director of Engineering for MBTA Railroad Operations.

4.12 DRAINAGE

A. Occupancies shall be designed, and constructed, so that adequate and uninterrupted drainage of railroad right-of-way is maintained. If it becomes necessary to block a ditch, pipe or other drainage facility, the applicant shall install temporary pipes, ditches or other drainage facilities as required to maintain adequate drainage, as approved by the MBTA or Railroad Company(s). Upon completion of the work, the temporary drainage facilities shall be removed and the permanent facilities restored.

B. Water may not be pumped or disposed of onto railroad rights-of-way unless discharged into an existing drainage facility, providing discharge does not cause erosion or leave sediment.

C. When water runoff is disposed of onto MBTA Railroad Property, it must be demonstrated to the Railroad Company(s) that the existing drainage facility can accommodate the increased runoff. Drainage calculations stamped by a Registered Professional Engineer must accompany all requests to use railroad culverts or drainage ditches.

D. If in the estimation of the Director of Engineering for MBTA Railroad Operations or their authorized representative, the railroad culvert or drainage ditch has to be cleaned in order to allow the increased flow to safely pass through the culvert, it must be cleaned at the expense of the applicant.

SECTION 5. CARRIER PIPE

GENERAL:

5.01 DESIGN CRITERIA

A. If the maximum allowable stress in the carrier pipe on either side of the occupancy of MBTA Railroad Property is less than specified herein, the carrier pipe on MBTA Railroad Property shall be designed at the same stress as the adjacent carrier pipe.

B. Requirements for carrier pipe under railroad tracks shall apply for a minimum distance equal to that of the casing pipe.

C. Carrier pipes within a casing shall be designed for railroad live loads as if they were not encased.

D. All pipes, ditches and other structures carrying surface drainage on MBTA Railroad Property and/or crossing under railroad tracks shall be designed to carry the run-off from a one hundred (100) year storm. Computations indicating this design and suitable topographic plans, prepared by a Registered Professional Engineer, shall be submitted to the Director of Engineering for MBTA Railroad Operations, or their authorized representative, for approval. If the drainage is to discharge into an existing drainage channel on railroad right- of-way and/or under railroad tracks, the computations should include the hydraulic analysis of any existing structures. Submitted with the computations should be formal approval of the proposed design by the appropriate governmental agency.

PRODUCTS:

5.02 GENERAL

A. All pipes shall be designed for the external and internal loads to which they will be subjected. The dead load of earth shall be considered 120 pounds per cubic foot. Railroad live loading shall be Cooper's E-8O with 50% added for impact. On railroad right-of-way or where railroad loading will be experienced, the following shall be the minimum requirements for carrier pipes:

1. Reinforced concrete pipe - ASTM Spec. C-76, Class V, Wall C.
2. Ductile Iron Pipe - For Culverts and Gravity Sewers - ASTM Spec, A-142 Extra Heavy.

5.03 OIL AND GAS PIPES

A. Pipelines carrying oil, liquefied petroleum gas, natural or manufactured gas and other flammable products shall conform to the requirements of the current ANSI B 31.4, with Addenda, "Liquefied Petroleum Transportation Piping Systems," ANSI B 31.8, "Gas Transmission and Distribution Piping Systems," and other applicable ANSI codes, except that the minimum allowable stresses for the design of steel pipe shall not exceed the following percentages of the specified minimum yield strength (multiplied by the longitudinal joint factor) of the pipe as defined in the ANSI Codes:

1. Steel pipe within a casing under, across and longitudinally on MBTA Railroad Property. (The following percentages apply to hoop stress):

   a. Seventy-two percent for installation on oil pipelines.

   b. Fifty percent for pipelines carrying liquefied petroleum gas and other flammable Liquids with low flash point.

   c. Sixty percent for installations on gas pipelines.

2. Steel pipe without a casing laid longitudinally on MBTA Railroad Property. (The following percentages apply to hoop stress):

   a. Sixty percent for installations on oil pipelines.

   b. Forty percent for pipelines carrying liquefied petroleum gas and other flammable Liquids with low flash point.

   c. Forty percent for installations on gas pipelines.

B. Design computations showing compliance with the requirements of Paragraph 5.03(A) above, and prepared by a Registered Professional Engineer, shall accompany the application for occupancy.

5.04 CAST IRON PIPE: For water and other materials under pressure shall conform to the current ANSI specifications A-21 Series 21/45 Iron strength with plain end, compression type or mechanical joints. The strength to sustain external railroad and other loadings shall be computed in accordance with the current ANSI A-21.1 “Thickness Design of Cast Iron Pipe."

5.05 VITRIFIED CLAY PIPE: ASTM Spec C-700, Extra Strength.

5.06 CORRUGATED METAL PIPE: AREA Spec Chapter I, Part 4

5.07 ASBESTOS CEMENT PIPE (Non-pressure): ASTM Spec. C-428, C1. 5000 Min. Pressure: AWWA Spec. C400, C1. 150 Min.

5.08 OTHER: Other miscellaneous piping not specified above shall be submitted to approval by the Director of Engineering for MBTA Railroad Operations.

5.09 SHUT-OFF VALVE

A. Provide accessible emergency shut-off valves at each side of the railroad within distances and at locations as directed by the Chief Engineering Officer.

B. Where pipelines are provided with automatic control stations and within distances approved by the Director of Engineering for MBTA Railroad Operations, no additional valves will be required.

5.10 SIGNS

A. Prominently identify all pipelines at rights-of-way by durable, weatherproof signs located over the centerline of the pipe. Mark pipelines at under crossings on both sides of track. Signs shall display the following:

1. Name and address of pipeline Owner.
2. Contents of Pipe.
3. Pressure in Pipe.
4. Depth below grade at point of sign.
5. Emergency telephone in event of pipe rupture.
6. Railroad File Number.

B. For pipelines running longitudinally on MBTA Railroad Property, place signs over the pipe (or offset and appropriately mark) at all changes in direction the pipeline. Locate signs so that when standing at one sign, the next adjacent marker in either direction is visible. In no event shall pipeline identification signs be placed more than 500 feet apart, unless otherwise directed by the Director of Engineering for MBTA Railroad Operations.

C. Submit details of signs (materials, size, methods of support, etc.) to the Director of Engineering for MBTA Railroad Operations for approval.

EXECUTION:

5.11 INSTALLATION:

A. Install carrier pipes in accordance with approved Construction Drawings, requirements of this specification, and all applicable codes and ordinances.

B. Install carrier pipes with sufficient slack so they are not in tension.

SECTION 6. CASING PIPE

GENERAL:

## 6.01 DESIGN CRITERIA

A. Casing pipe and joints shall be of metal and of leak-proof construction.

B. Casing pipe shall be designed for the earth and/or other pressures present, and for railroad live load. The dead load of earth shall be considered 120 pounds per cubic foot. Railroad Live load shall be Cooper E-80 with 50g added for impact.

C. The inside diameter of the casing pipe shall be such as to allow the carrier pipe to be removed subsequently without disturbing the casing or the roadbed. For carrier pipe less than six (6) inches in diameter, the inside diameter of the casing pipe shall be at least two (2) inches greater than the largest outside diameter of the carrier pipe joints or couplings. For carrier pipe six (6) inches and over in diameter, the inside diameter of the carrier pipe shall be at least four (4) inches greater than the largest outside diameter of the carrier pipe joints or couplings.

D. For flexible casing pipe, a minimum vertical deflection of 3 percent of its diameter, plus 1/2 inch, shall be provided so that no loads from the roadbed, track, traffic or casing pipe itself are transmitted to the carrier pipe. When insulators are used on the carrier pipe, the inside diameter of the flexible casing pipe shall be at least two (2) inches greater than the outside diameter of the carrier pipe for pipe less than eight (8) inches in diameter; at least 3-
1/4 inches greater for pipe 8 to 16 inches in diameter, and at least 4-1/2 inches greater for pipe 18 inches and over in diameter. In no event shall the casing pipe diameter be greater than is necessary to permit the insertion of the carrier pipe.

E. Casing pipe under railroad tracks and across MBTA Railroad Property shall extend the greater of the following distances, measured at right angles to centerline of track:

1. Across the entire width of MBTA Railroad Property.
2. Two (2) feet beyond ditch line.
3. Three (3) feet beyond toe of slope.
4. A minimum distance of 25 feet each side from centerline of outside track when casing is sealed at both ends.
5. A minimum distance of 45 feet from centerline of outside track when casing is open at both ends.

F. If additional tracks are constructed in the future, the casing shall be extended at the expense of the Applicant.

G. Table of Live Loads

LIVE LOADS, INCLUDING IMPACT, FOR VARIOUS HEIGHTS OF COVER FOR COOPER E- 80

| COVER (FT) LOAD (PSF) | COVER (FT) LOAD (PSF) | COVER (FT) LOAD (PSF) |
|---|---|---|
| 2 ….. 3800 | 10 ..... 1100 | 20 ..... 300 |
| 5 .....2400 | 12 ..... 800 | 30 ..... 100 |
| 8 ..... 1600 | 15 ..... 600 | |

6.02 PROTECTION AT ENDS OF CASING

A. Casings for carriers of flammable substances shall be sealed to the outside of the carrier pipe. Details of seals shall be shown on the Drawings.

B. Casings for carriers of non-flammable substances shall have both ends of the casing blocked in such a way as to prevent the entrance of foreign material, but allowing leakage to pass in the event of a carrier break.

C. Where ends of casing are at or above ground surface and above high water level, they may be left open, provided drainage is afforded in such a manner that leakage will be conducted away from railroad tracks and structures.

6.03 VENTS

A. Sealed casings for flammable substances shall be properly vented. Vent pipes shall be of sufficient diameter, but in no case less than two (2) inches in diameter, and shall be attached near each end of the casing and project through the ground surface at right-of-way lines or not less than 45 feet (measured at right angles from centerline of nearest track).

B. Vent pipes shall extend at least four (4) feet above the ground surface. Top of vent pipe shall have a down-turned elbow, properly screened, or a relief valve. Vents in locations subject to high water shall be extended above the maximum elevation of high water and shall be supported and protected in a manner approved by the Director of Engineering for MBTA Railroad Operations.

C. Vent pipes shall be at least four (4) feet from the closest aerial electric

wires.

D. When the pipeline is in a public highway, street-type vents shall be installed.

PRODUCTS:

6.04 STEEL PIPE

The minimum yield strength for steel pipe shall be 35,000psi. Smooth wall pipes with a nominal diameter greater than 70 inches require special approval by the Director of Engineering for MBTA Railroad Operations. See Plate V, "Table of Minimal Wall Thickness for Steel Casing Pipe."

6.05 CAST IRON PIPE

May be used for a casing, provided the method of installation is by open trench. Cast iron pipe shall conform to ASTM Specification A-142, Extra Heavy. The pipe shall be of the mechanical joint type or plain end type with compression type couplings.

6.06 CORRUGATED METAL PIPE AND CORRUGATED STRUCTURAL PLATE PIPE

May be used for casing only when emplaced by the open-cut method. Jacking or boring through railroad embankment is not permitted. Pipe shall be bituminous coated and shall conform to AREA Specifications Chapter 1, Part 4.

6.07 REINFORCED CONCRETE PIPE

Shall conform to ASTM Specification C 76, Class V, Wall C. It shall be used only in the open cut and jacking methods of installation. If concrete pipe is to be jacked into place, grout holes tapped for at least 1-1/2 inch pipe spaced at approximately 8 feet around the circumference and approximately 4 feet longitudinally shall be cast into the pipe at manufacture. Immediately upon completion of jacking operations, the installation shall be pressure grouted.

6.08 TUNNEL LINER PLATES

Shall be four flange and otherwise conform to American Railway Engineering Association Specifications Chapter 1, Part 4. In no event shall the liner plate thickness be less than 0.1046 inches. Tunnel liner plates are to be used only to maintain a tunneled opening until the carrier pipe is installed. After installation the annular space between the carrier and liner must be filled

with 1:6 cement grout or lined with 6 inches of concrete, reinforced with 6x6-6/6 wire mesh for tunnels up to 108 inches in diameter. Required thickness of lining for larger tunnels shall be determined by span and structural analysis. Manufacturer's Shop Detail Drawings and manufactures computations showing the ability of the tunnel liner plates to resist the jacking stresses shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval.

EXECUTION:

6.09 DEPTH OF INSTALLATION:

A. Casing pipe under railroad tracks and across MBTA Railroad Property shall be at least 6-1/2 feet from top of rail to top of casing at its closest point. Under secondary or industrial tracks this distance shall be at least 5-1/2 feet. On other portions of MBTA Railroad Property where casing is not directly beneath any track, the depth from ground surface or from bottom of ditches to top of casing shall be at least four (4) feet, unless otherwise specified herein.

B. Pipelines laid longitudinally on MBTA Railroad Property 50 feet or less from centerline of track shall be buried not less than five (5) feet from ground surface to top of pipe. This applies to all pipelines carrying oil, gas, petroleum products, or other flammable or highly volatile substances under pressure, and all non-flammable substances which by their nature or presence in the judgment of the Director of Engineering for MBTA Railroad Operations may be hazardous to life or property. For pipelines carrying water, sewage and non-flammable substances, the distance from surface of ground to top of pipe shall not be less than four (4) feet.

C. Pipelines located within the line of track live load influence (as shown on Plates II and III) are subject to railroad loading and require a casing or are to be of special design approved by the Director of Engineering for MBTA Railroad Operations. All longitudinal occupation locations must be approved by the Chief Engineering Officer.

D. The minimum cover shall be at least three (3) feet when pipeline is laid more than 50 feet from center line of track.

E. Pipelines installed under or adjacent to any overhead structure must be a minimum of 29 feet from the bottom of the structure to the top of the casing. Such installations must comply with the above requirements.

6.10 METHOD OF INSTALLATION

A. The Owner or its Contractor shall submit to the Director of Engineering for MBTA Railroad Operations, data and information demonstrating that the Contractor or their subcontractors have had successful previous experience in jacking, or using the proposed method of installation, in similar situations.

B. Before any work is begun within the limits of jacking, the Owner or its Contractor shall have assembled all tools, materials, and equipment which will be required. When the Owner or its Contractor has started the jacking operation, they shall proceed in a continuous operation without stopping. This will minimize the tendency of the material to freeze around the pipe.

C. A jacking shield shall be used and jacked ahead of the casing pipe. The excavation within the jacking pipe should not advance beyond the head of the pipe shield. If the stability at the face needs to be maintained from raveling or running soil, suitable temporary bulkheads, struts, and bracing shall be required. After completion of the sleeve installation the annular space around it shall be completely grouted with cement grout under pressure.

D. Casing pipe ends shall be beveled with a single V-groove toe field welding. Pipe joints shall be butt welded and shall be a full penetration on the outside circumference of the pipe. The single V-groove butt weld shall conform to the latest A.W.S. Welding Code. All joints of the easing pipe shall be butt welded, by a certified welder, prior to being subject to the jacking operation.

Alternate method: The casing pipe may be jacked without being butt welded through the use of a continuous 1/2"x12" interior collar plate. The collar plate shall be welded completely upon completion of the jacking operation. All welding shall conform to the latest A.W.S. Welding Code, and shall be performed by a certified welder.

6.11 CONSTRUCTION:

A. The casing pipe shall be constructed so as to prevent leakage of any substance from the casing throughout its length, except where the ends are left open, or through vent pipes when the ends are sealed. The casing shall be installed so as to prevent the formation of a waterway under the railroad, shall have an even bearing throughout its length, and shall slope to one end (except for longitudinal occupancy).

B. Casing pipes shall be installed by the following methods:

1. Jacking

   a. This method shall be in accordance with the most current edition of the American Railway Engineering Association Specifications, “Jacking Culvert Pipe Through Fills." This operation shall be conducted without hand mining ahead of the pipe and without the use of any type of boring, auguring, or drilling equipment.

   b. Bracing and backstops shall be designed and jacks of sufficient rating used so that the jacking will be continuous.

2. Drilling

   This method employs the use of an oil field type rock roller bit or a plate bit made up of individual roger cutter units which are welded to the pipe casing being installed and which are turned as it is advanced. The pipe is turned for its entire length from the drilling machine to the ground being drilled. A high density slurry is injected through a small supply line to the head which acts as a cutter lubricant. This slurry is injected at the rear of the cutter units to prevent any jetting action ahead of the pipe. The drilling machine runs on a set of steel rails and is advanced (thus advancing the pipe) by a set of hydraulic jacks. The method is the same whether earth or rock is being drilled. Any other drilling methods shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval.

3. Tunneling

   a. Tunneling operations shall be conducted as approved by the Railroad Company(s). Care shall be exercised in trimming the surface of the excavated section in order that the steel liner plates fit snugly against the undisturbed material. Excavation shall not be advanced ahead of the previously installed liner plates any more than is necessary for the installation of the succeeding liner plate. The vertical face of the excavation shall be supported as necessary to prevent sloughing. At any interruption of the tunneling operation, the heading shall be completely bulkheaded. Tunneling shall be conducted continuously, on a 24 hour basis until the tunnel liners extend at least one foot beyond the railroad line of influence.

   b. When tunneling, tight breasting must be maintained around the entire face. On any shutdowns (under or beyond railroad influence line, see Plate II), the entire

face shall be fully breasted and packed with hay.

c. The tail void shall be filled with pea stone (or other approved material) simultaneously with each advancement of the shield.

d. An ample supply of hay and/or sandbags must be kept at the site to fill any voids caused by the removal of large stones or other obstructions extending outside the shield.

e. A uniform mixture of 1:6 cement grout shall be placed under pressure behind the liner plates, in addition to the previously placed pea stone. Grout holes, tapped for at least 1-1/2 inch pipe and spaced 3 feet around the tunnel liner, shall be placed in every other ring. Grouting shall start at the lowest dole and proceed upwards. A threaded plug shall be installed in each grout hole as the grunting is completed at that hole.

f. Grouting shall be kept as close to the heading as possible, using grout stops behind the liner plates. If necessary, grouting shall proceed as directed by the Railroad Company(s), but in no event shall more than six lineal feet of tunnel be progressed beyond the grouting.

4. Tunneling Shields

a. All pipes 70 inches and larger in diameter shall be emplaced with the use of a tunneling shield, unless otherwise approved by the Director of Engineering for MBTA Railroad Operations. Pipes of smaller diameter may also require a shield when, at the sole discretion of the Director of Engineering for MBTA Railroad Operations, soil, or other conditions indicate its need.

b. The shield shall be of steel construction, designed to support railroad track loading as specified in Paragraph 6.01 B herein, in addition to other loadings it must sustain. The advancing face shall be provided with a hood, extending no less than 20 inches beyond the face and extending around no less than the upper 240 degrees of the total circumference. Installations made with linear plates shall be provided with a full 360 degree shield. It shall be of sufficient length to permit the installation of at least one complete ring of liner plates within the shield before it is advanced for the installation of the next ring of liner plates, It shall conform to and not exceed the outside dimensions of the pipe being emplaced by more than one inch at any point in the periphery.

c. The shield must be adequately braced and provided with necessary appurtenances for completely bulkheading the face with horizontal breastboards, and arrange so that the excavation can be benched as may be necessary. Excavation shall not be advanced beyond the edge of the hood, unless otherwise approved by the Railroad Company(s).

d. Manufacturer's Shop Detail Drawings and computations showing the ability of the tunnel liner plates to resist the jacking stresses shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval.

e. For jacking reinforced concrete pipe, the shield shall be fabricated as a special section of reinforced concrete pipe with the steel cutting edge, hood, breasting attachments, etc., cast into the pipe. The wall thickness and reinforcing shall be designed for the jacking stresses.

f. Grout holes tapped for no less than 1-1/2 inch pipe, spaced at approximately 3 foot centers around the circumference of the shield (or the aforementioned special reinforced concrete section) and no more than 4 foot centers longitudinally shall be provided.

g. Detail Drawings sufficient to determine the adequacy of the shield, accompanied with design calculations prepared by a Registered Professional Engineer, shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval and no work shall proceed until such approval is obtained.

5. Boring

a. This method consists of pushing the pipe into the fill with a boring auger rotating within the pipe to remove the spoil. When augers, or similar devices, are used for pipe emplacement, the front of the pipe shall be provided with mechanical arrangements or devices that will positively prevent the auger and cutting head from leading the pipe so that there will be no unsupported excavation ahead of the pipe. The auger and cutting head arrangement shall be removable from within the pipe in the event an obstruction is encountered. The over-cut by the cutting head shall not exceed the outside diameter of the pipe by more than one-half inch. The face of the cutting head shall be arranged to provide reasonable obstruction to the free flow of soft or poor material.

b. Drawings and descriptions of the auger stop arrangement to be used shall be submitted to the Director of Engineering for MBTA Railroad Operations for approval,

and no work shall proceed until such approval is obtained and the arrangement is inspected in the field by the Railroad Company(s).

c. The use of water or other Liquids to facilitate casing emplacement and/or spoil removal is prohibited.

d. Any method which employs simultaneous boring and jacking or drilling and jacking for pipes over 8 inches in diameter which does not have the above approved arrangement WILL NOT BE PERMITTED. For pipes 8 inches and less in diameter, augering or boring without this arrangement may be considered for use only as approved by the Director of Engineering for MBTA Railroad Operations.

C. If an obstruction is encountered during the installation which stops the forward action of the pipe, and it becomes evident that it is impossible to advance the pipe, operations shall cease and the pipe shall be abandoned in place and filled completely with grout, in accordance with Section 4, Paragraph 4.10.

D. Bored or jacked installations shall have a bored hole essentially the same as the outside diameter of the pipe plus the thickness of the protective coating. If voids should develop or if the bored hole diameter is greater than the outside diameter of the pipe (plus coating) by more than 1 inch, grouting or other methods approved by the Railroad Company(s) shall be employed to fill such voids.

E. Pressure grouting or freezing of the soils before or during jacking, boring, or tunneling may be required at the direction of the Railroad Company(s) to stabilize the soils, control water, prevent loss of material and prevent settlement or displacement of the embankment and/or tracks. Grout shall be cement, chemical or other special injection material selected to accomplish the necessary stabilization.

F. The materials to be used and the method of injection shall be prepared by a Registered Professional Engineer (Geotechnical), or by an experienced and qualified company specializing in this work and submitted for approval to the Railroad Company(s) before the start of work. Proof of experience and competency shall accompany the submission.

G. When water is expected to be encountered, pumps of sufficient capacity shall be provided and maintained at the site, and continually attended on a 24-hour basis, until in the sole judgment of the Railroad Company(s), their operation can be safely halted.

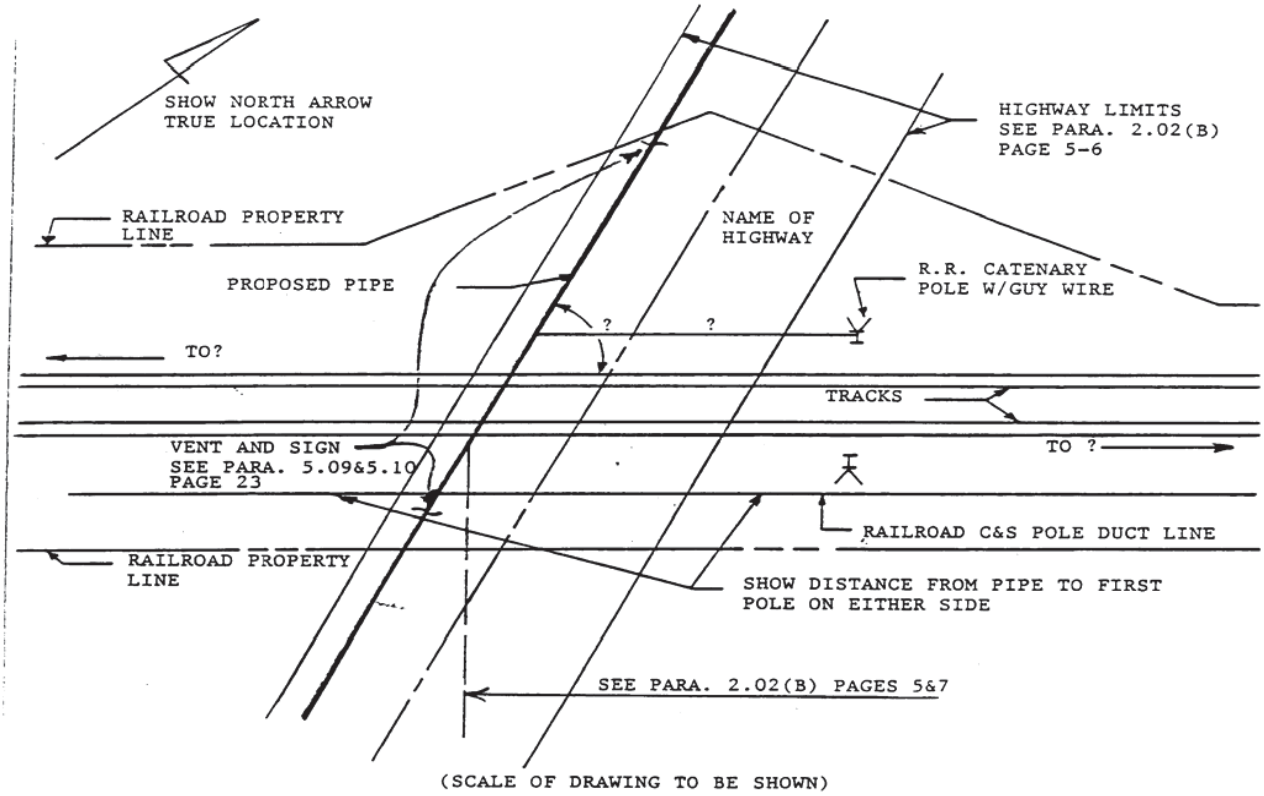
When dewatering, close observation shall be maintained to detect any settlement or displacement of railroad embankment, tracks, and facilities.

H. Proposed methods of dewatering must be submitted to the Railroad Company(s) for approval prior to implementation. The discharge from the dewatering operations in the vicinity of the railroad shall be carefully monitored. If in the opinion of the Railroad Company(s), there is an excessive loss of fine soil particles at any time during the dewatering process, the dewatering shall be halted immediately. The dewatering operation cannot resume until the unsatisfactory condition is remedied to the satisfaction of the Railroad Company(s).

**PLATE I**

PIPE CROSSING

INFORMATION TO BE SHOWN ON PLAN SECTION OF DRAWING




(SCALE OF DRAWING TO BE SHOWN)

NOTE:

IF MANHOLES ARE PLACED ON MBTA RAILROAD PROPERTY, DETAILS OF SAME, WITH CLEARANCES TO THE CENTERLINE OF THE NEAREST TRACK ARE TO BE SHOWN ON THE DRAWINGS.

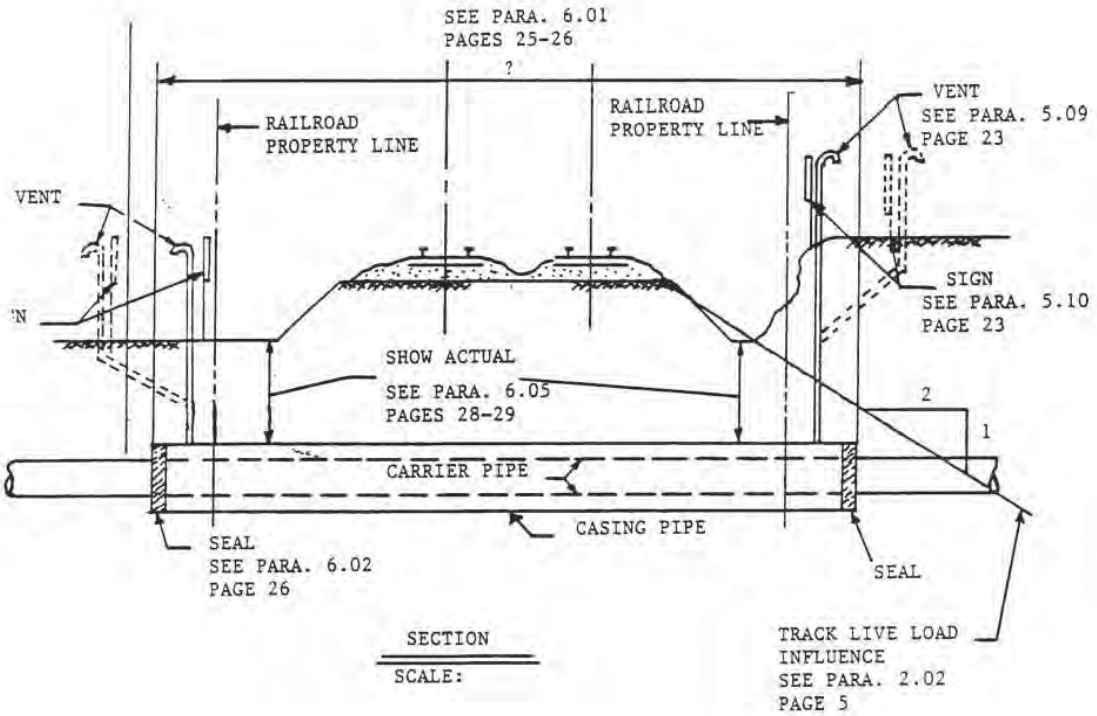
IF THE PROPOSED PIPE IS TO SERVE A NEW DEVELOPMENT, A MAP SHOWING THE AREA IN RELATION TO ESTABLISHED AREAS AND ROADS IS TO BE SENT WITH THE REQUEST.

THE PROPOSED PIPE IS NOT WHOLLY WITHIN HIGHWAY LIMITS, THE SAME INFORMATION IS REQUIRED AS SHOWN ON THIS PLATE.

**PLATE II**

PIPE CROSSING

INFORMATION TO BE SHOWN ON PROFILE SECTION OF DRAWING

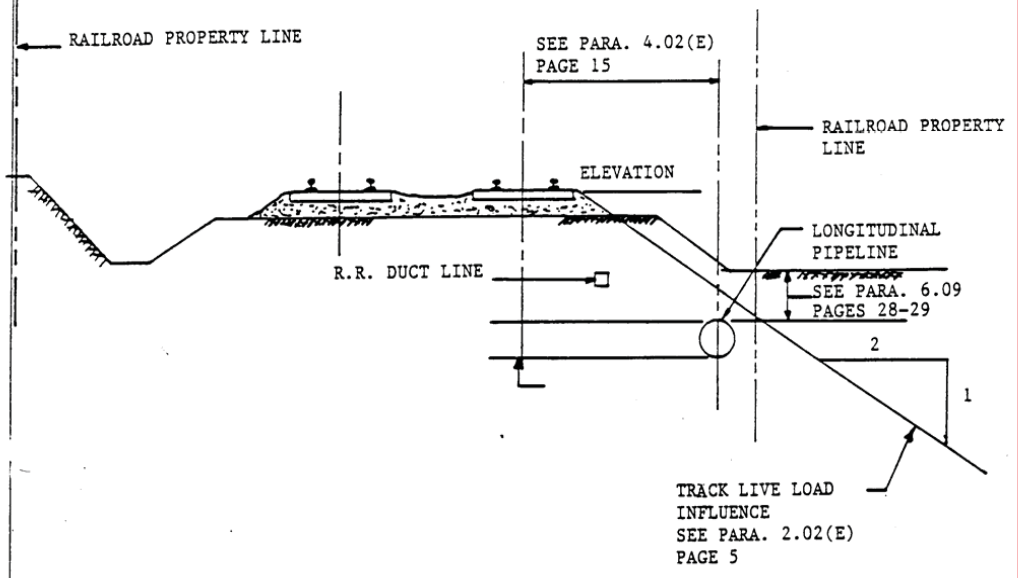


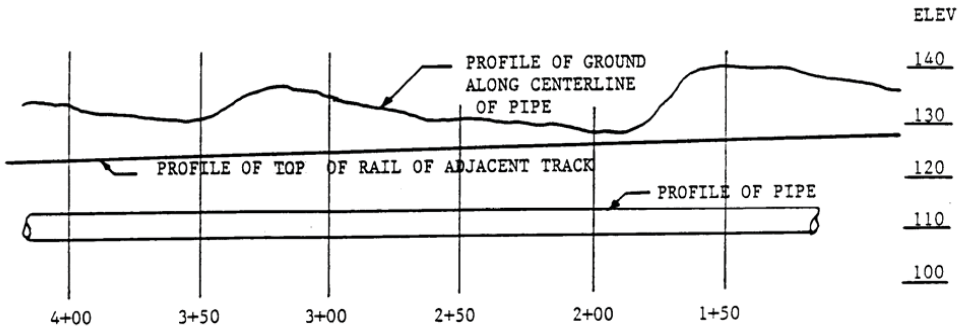

SECTION

SCALE:

**PLATE III**

LONGITUDINAL OCCUPANCY




STATIONING

PROFILE - SEE PARA. 2.02
PAGES 5-7

SCALE - HOR:
VER:

PIPE CROSSING DATA SHEET

**PLATE IV**

In addition to plan and profile of crossing, Drawings submitted for the Railroad Company(s) approval shall contain the following information:

| | Pipe Date | |
|---|---|---|
| | Carrier Pipe | Casing Pipe |
| Contents To Be Handled | | |
| Normal Operating Pressure | | |
| Normal Size of Pipe | | |
| O.S. Diameter | | |
| I.S. Diameter Wall | | |
| Thickness Weight | | |
| Per Foot Material | | |
| Process of Manufacture | | |
| Specification | | |
| Grade or Class | | |
| Test Pressure | | |
| Type of Joint | | |
| Type of Coating | | |
| Details of Cathodic Protection | | |
| Details of Seal or Protection at Ends of Casing: | | |
| Method of Installation | | |
| Character of Subsurface: Material At the Crossing Location | | |
| Approximate Ground Water Level | | |
| Source of Information on Sub- surface conditions (Test Pits, Borings or Other) | | |

NOTE: Any soil investigation made on MBTA Railroad Property, or adjacent to tracks shall be carried on under the supervision of the Railroad Company(s).

# PLATE V

## TABLE OF MINIMUM WALL THICKNESS FOR STEEL CASING PIPE
(FOR INFORMATION ONLY)

### PROTECTED WALL THICKNESS

| PIPE SIZE (INCHES) | WALL THICKNESS (PROTECTED) |
|---|---|
| 10 | 0.375 |
| 12 | 0.375 |
| 14 | 0.375 |
| 16 | 0.375 |
| 18 | 0.375 |
| 20 | 0.375 |
| 22 | 0.375 |
| 24 | 0.375 |
| 26 | 0.375 |
| 28 | 0.406 |
| 30 | 0.469 |
| 32 | 0.501 |
| 34 | 0.532 |
| 36 | 0.532 |
| 38 | 0.569 |
| 40 | 0.569 |
| 42 | 0.569 |
| 44 | 0.594 |
| 46 | 0.688 |
| 48 | 0.688 |
| 50 | 0.688 |
| 52 | 0.813 |
| 54 | 0.813 |
| 56 | 0.876 |
| 58 | 0.876 |
| 60 | 0.876 |
| 62 | 0.876 |
| 64 | 0.876 |
| 66 | 0.876 |
| 68 | 0.876 |
| 70 | 0.906 |

NOTE: FOR UNPROTECTED PIPE 26" AND UNDER ADD 0.032" TO PROTECTED WALL THICKNESS. FOR UNPROTECTED PIPE 28" AND OVER, ADD 0.063" TO PROTECTED WALL THICKNESS.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# V

## SPECIFICATIONS FOR WIRE CONDUIT AND CABLE OCCUPATIONS

SECTION 1. SCOPE

1.01 These specifications apply to the design of electric transmission wires and cables (power and communication) which are to be located over, under, across or upon property, facilities, and tracks owned by the MBTA.

SECTION 2. LICENSE TO ENTER MBTA RAILROAD PROPERTY

2.01 Individuals, corporations, or municipalities desiring wire or cable occupations must agree, upon approval of the construction details by the Director of Engineering for MBTA Railroad Operations, to execute an appropriate occupational agreement and pay any required fees and/or rentals outlined therein.

2.02 Application for an occupancy shall be submitted in writing to:

AGM for Real Estate and Asset Development
MBTA, 10 Park Plaza
Boston, Massachusetts 02116

See "Guidelines and Procedures for Construction on MBTA Railroad Property."

2.03 All applications shall be accompanied with six (6) copies of all Construction Drawings, specifications and computations concerning the proposed occupancy.

SECTION 3. APPROVAL OF DRAWINGS

3.01 Entry upon MBTA Railroad Property for the purpose of conducting surveys, field inspections, obtaining soil information, or any other purpose associated with the design and engineering of the proposed occupancy will be permitted only with a proper entry permit prepared by the MBTA Real Estate Department. The issuance of such a permit does not constitute authority to proceed with the actual construction. Construction cannot begin until the proper insurance certificate is received and a formal agreement is executed by the MBTA and permission is received by the Railroad Company(s).

3.02 Drawings shall be drawn to scale and show the following: (See attached plates I -VI)

A. Plan view of crossing or occupation in relation to all Railroad Company(s) facilities. (See Plate 1)

B. Location of wire or cane (in feet) from nearest railroad mile post, center line of a railroad bridge (giving bridge number), or center line of a passenger station. In all cases, the name of the County and City or

Town in which the proposed facilities are located must be shown.

C. Profile of ground on center line of pole or tower line, showing clearances between top of rail and bottom of sag, as well as clearances from bottom wire or cable to top wire or cable of the MBTA's transmission, signal and communication lines and catenary. If none of these facilities are in existence at the point of crossing, the plan should so indicate. Actual under-clearances are to be shown. (See Plate V for the required clearances).

D. Show all known property lines. If wires, cables or conduits are within public highway limits, such limits should be clearly indicated with dimensions from center line.

E. The Drawing must be specific as to:

1. Base diameter, height, class and bury of poles. Poles shall be set no closer than 13' 6" from face of pole to center line of nearest track. When necessary, however, each location will be analyzed by the MBTA to consider speed, traffic, access, etc.

2. Number, size and material of power wires, as well as number of pairs in communication cables.

3. Nominal voltage of line, type of current and frequency.

4. Number, location, size and material of anchors and all guying for poles and arms.

NOTE: Double cross-arms are required on poles adjacent to track. Any tower designs must be accompanied by engineering computations and data.

## SECTION 4. CONSTRUCTION REQUIREMENTS

4.01 Power and communication lines shall be constructed in accordance with "Safety Rules for the Installation and Maintenance of Electric Supply and Communication Lines, National Electrical Safety Code Handbook, Part 2" (current issue), with the following exceptions:

A. Item 3 (c), page 2.

B. Casing pipes to contain power or communication wires or cables having an outside diameter of over four (4) inches shall be constructed in accordance with the current issue of MBTA Railroad Operations "Pipeline Occupancy Specifications".

## SECTION 5. LONGITUDINAL OCCUPATIONS

5.01 Wires and cables running longitudinally along railroad right-of-way shall be

constructed as close to MBTA property lines as possible in accordance with Plate III. For electrical power lines and cables with voltages of 34,500 or over and communication canes containing over 180 pairs, the following information must be submitted in addition to the detail of the pole top configuration as called for on Plate IV of these specifications:

A. Voltage of circuit(s) or number of pairs. B. Phase of electrical circuit(s).

B. Number of electrical circuits.

C. Size (AWG or CM) and material of wires and cables.

5.02 Any facilities overhanging MBTA Railroad Property must have approval of the MBTA and appropriate rental charges will be applied.

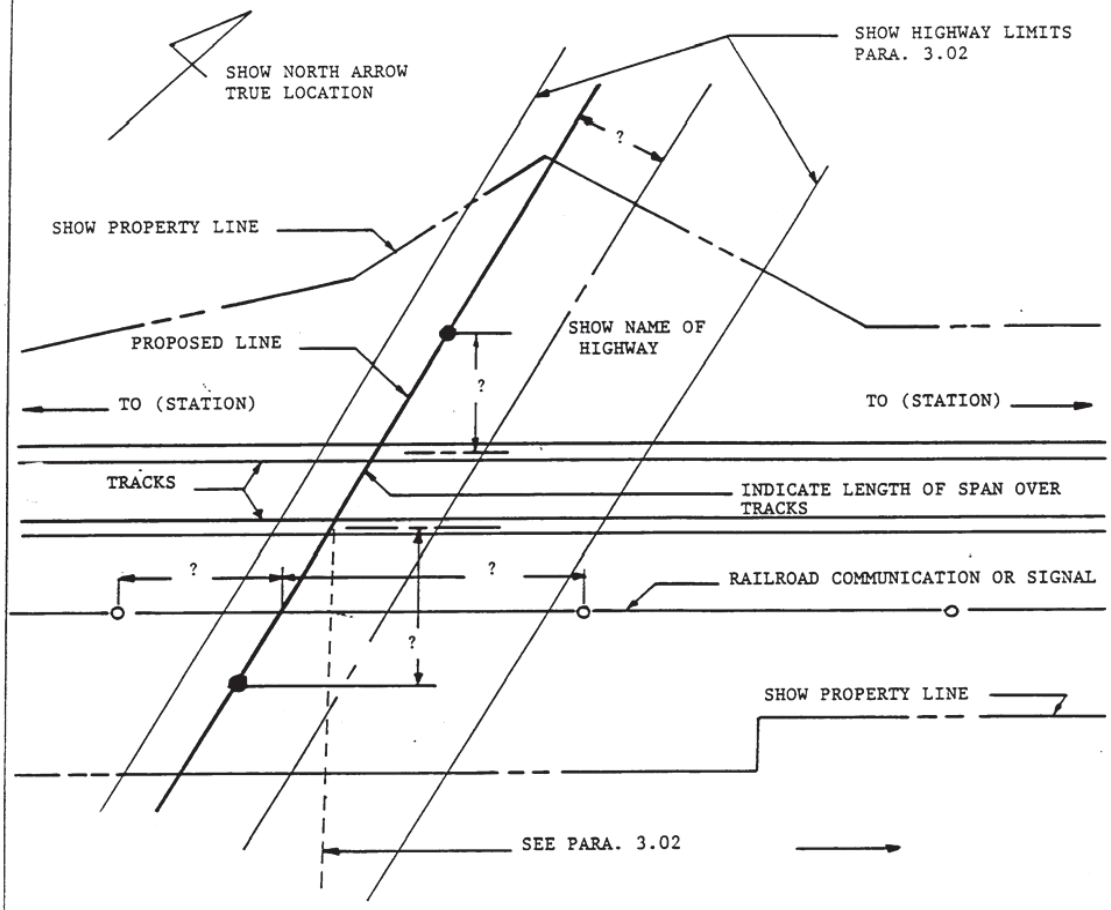
SECTION 6. INDUCTIVE INTERFERENCE

6.01 On agreements covering longitudinal occupations, provisions shall be included that hold the Applicant responsible to provide appropriate remedies, at their own expense, to correct any inductive interference with MBTA facilities.

**PLATE I**

PLAN VIEW

INFORMATION TO BE SHOWN ON PLAN SECTION OF DRAWINGS
WHEN FACILITY IS A CROSSING




SCALE OF DRAWING TO BE SHOWN

NOTE:

IF THE PROPOSED LINE IS TO SERVE A NEW DEVELOPMENT, A MAP SHOWING THE AREA IN RELATION TO ESTABLISHED AREAS AND ROADS IS TO BE SENT WITH THE REQUEST.

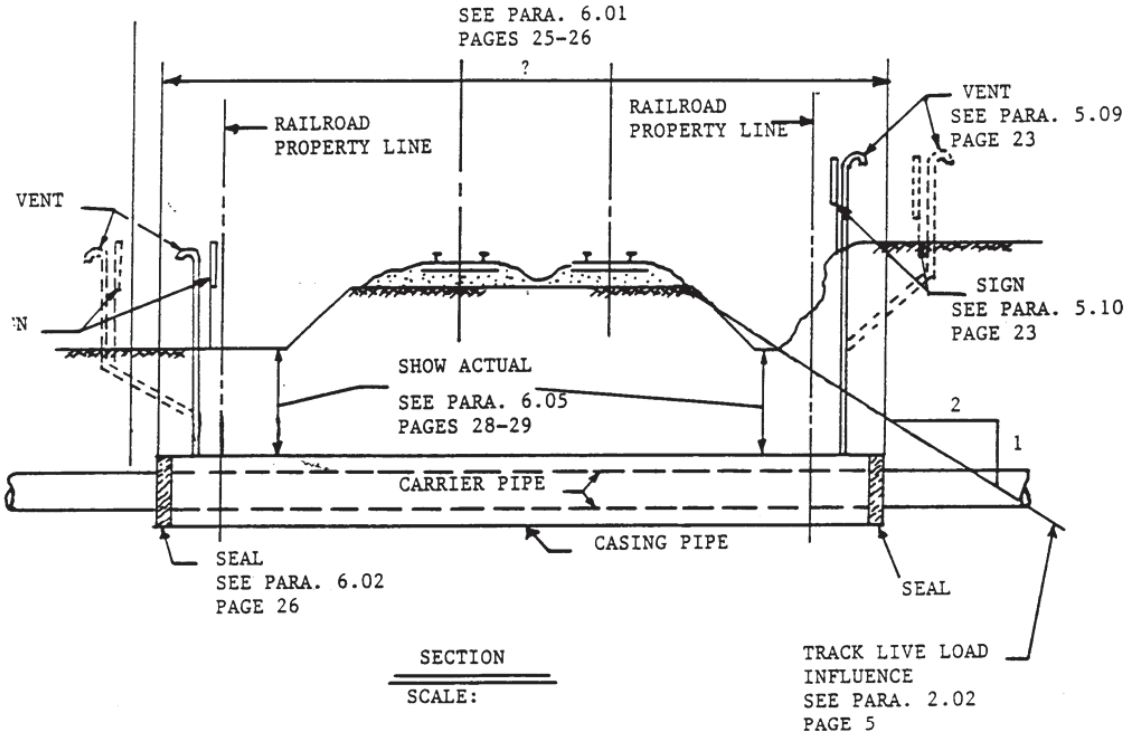
IF THE PROPOSED LINE IS NOT WHOLLY (OR PARTIALLY) WITHIN HIGHWAY LIMITS, THE SAME INFORMATION IS REQUIRED AS SHOWN ON THIS PLATE.

4

**PLATE II**

PIPE CROSSING

INFORMATION TO BE SHOWN ON PROFILE SECTION OF DRAWING



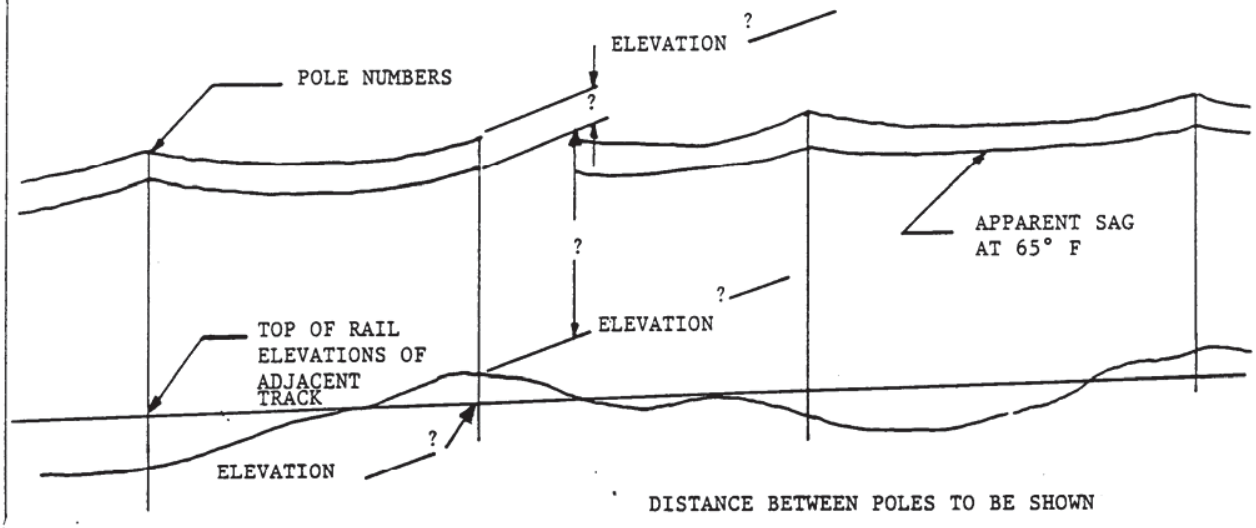

SECTION

SCALE:

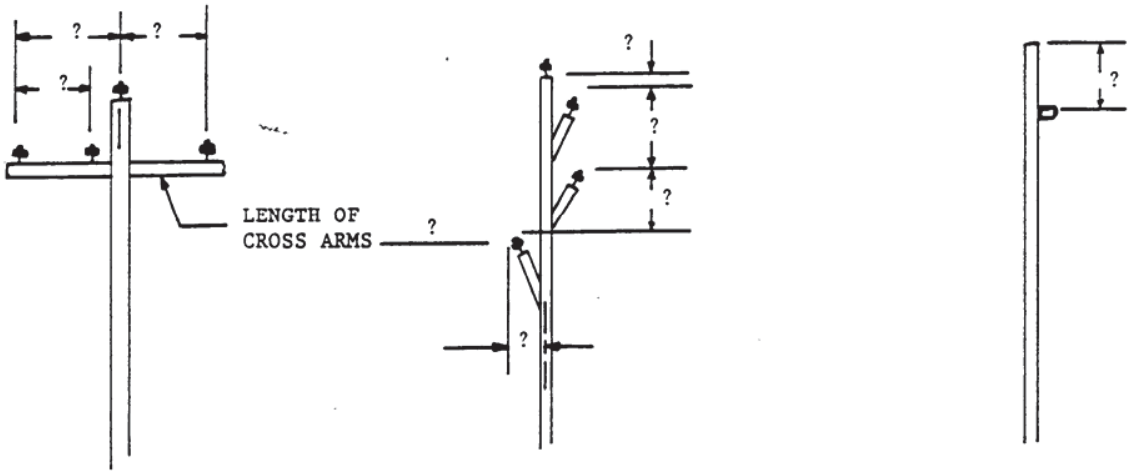
**PLATE III**

PROFILE VIEW

INFORMATION TO BE SHOWN ON PROFILE SECTION OF DRAWINGS
IN CASES OF LONGITUDINAL OCCUPATIONS




DISTANCE BETWEEN POLES TO BE SHOWN



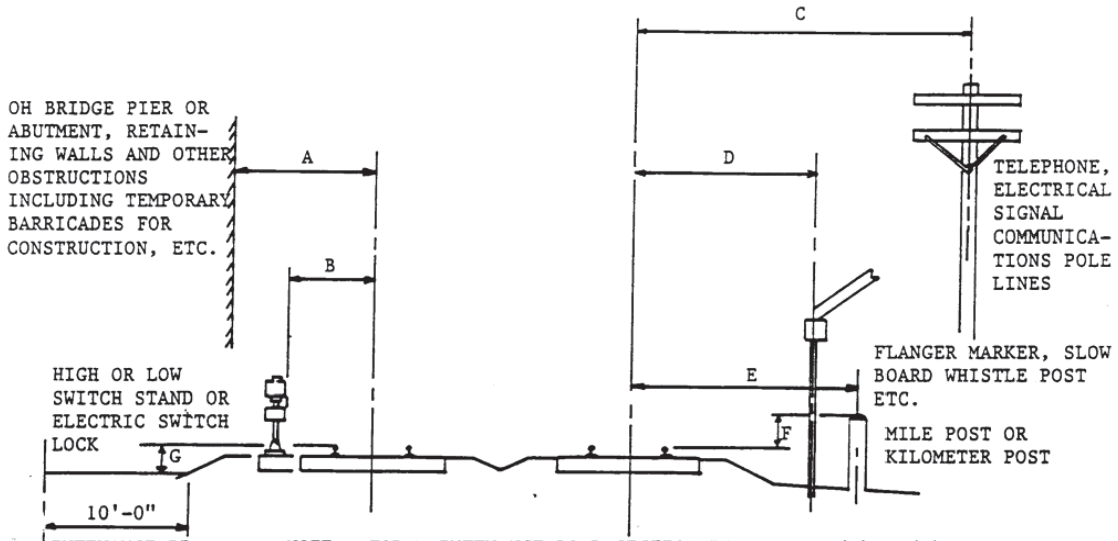

POLE TOP CONFIGURATION TO BE SHOWN SIMILAR TO SAMPLES ABOVE

NOTE: IF POWER LINE CROSSES ANY TRACK, THEN INFORMATION SHOWN ON PLATE II IS ALSO REQUIRED.

# PLATE IV

## STANDARD SIDE CLEARANCES - TANGENT TRACK

(FOR OBSTRUCTIONS OTHER THAN PASSENGER STATIONS)




NOTE: FOR MAINTENANCE ROAD SECTION DIMENSIONS (A) & (C) TO BE INCREASED ACCORDINGLY - DIMENSIONS (D) & (E) MAY BE REDUCED TO 8'-6" CLEARANCE.

| DIMENSION | DESCRIPTION | |
|---|---|---|
| A | GENERAL MINIMUM SIDE CLEARANCE | 8'-6" |
| | OVERHEAD BRIDGE PIERS & ABUTMENT, RETAINING WALLS & OTHER EXISTING STRUCTURES | 8'-6" |
| B | LOW SWITCH STANDS (3'-0" MAX HEIGHT) | 6'-6" |
| | HIGH SWITCH STANDS (OVER 3'-0" HEIGHT) | 9'-0" |
| | ELECTRIC SWITCH LOCKS | 6'-6" |
| C | POLE LINES - TELEPHONE, ELECTRIC, SIGNAL COMMUNICATIONS (MIN) | 13'-6" |
| D | CENTERLINE WHISTLE POSTS, FLANGER MARKERS, SLOW OR SPEED BOARDS AND OTHRE WAYSIDE SIGNS | 12'-0" |
| | AUTOMATIC HIGHWAY CROSSING PROTECTION (MIN) | 8'-6" |
| | AUTOMATIC HIGHWAY CROSSING PROTECTION (DESIRED) | 15'-0" |
| E | MILE POSTS - HORIZONTAL | 13'-6" |
| F | MILE POSTS - VERTICAL | 7'-0" |
| G | DEPRESSION OF MAINTENANCE ROAD | |

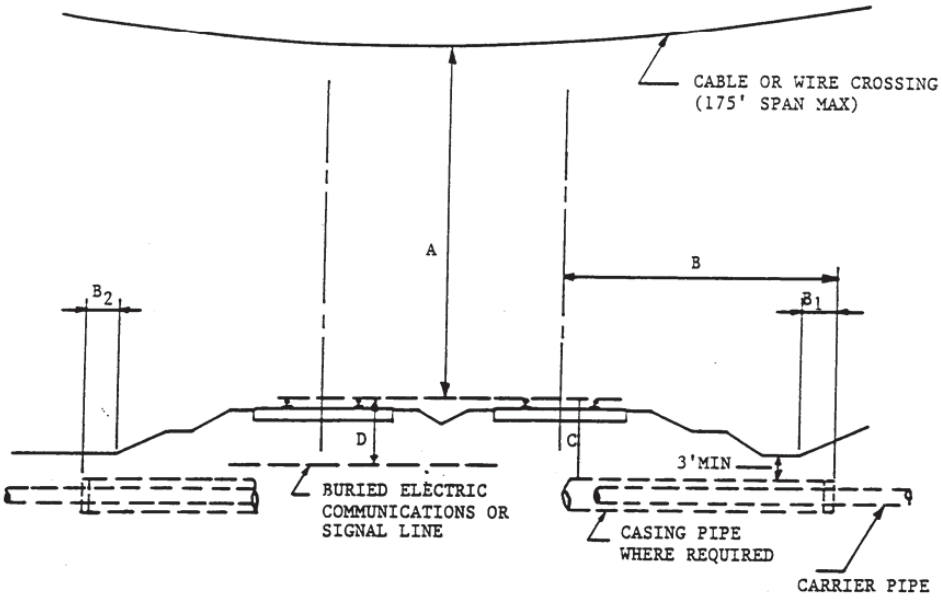
# PLATE V

| VOLTAGE | OVERHEAD CLEARANCE (Top of Rail to Bottom of Sag) | |
|---|---|---|
| 0- 750 | 27'0" | At 120°F Ambient Temperature |
| 750- 15,000 | 28'0" | |
| 15,000 - 50,000 | 30'0" | |
| 69,000 | 30'8" | |
| 115,000 | 32'2" | |
| 138,000 | 33'0" | |
| 345,000 | 39'10" | |
| 500,000 | 45'0" | |
| 745,000 | 53'2" | |
| 765,000 | 53'10" | |
| Other than power lines | 27'0" | |

(Calculation is 30'0" + 0.4" per 1,000 volts over 50,000 volts)

CLEARANCES FOR OVERHEAD AND BURIED UTILITY CROSSINGS

**PLATE VI**




| DIMENSION | DESCRIPTION | | |
|---|---|---|---|
| A | POWER LINES 0 TO 750V | 27'-0" | At 120°F Ambient Temperature |
| | POWER LINES 750V to 15,000V | 28'-0" | |
| | POWER LINES 15 to 50KV | 30'-0" | |
| | OTHER THAN POWER LINES | 27'-0" | |
| B | SEALED ENDED CASINGS | 25'-0" | |
| | OPEN ENDED CASINGS | 45'-0" | |
| $B_1$ | END CASING DEYOND DITCH | 2'-0" | |
| $B_2$ | END CASING BEYOND SLOPE | 3'-0" | |
| C | CASING PIPE | 4'-6" | |
| | CARRIER PIPE WITHOUT CASING | 6'-6" | |
| D | BURIED ELECTRIC LINES | 6'-6" | |
| | RAILROAD SIGNAL LINES (220V) | 2'-6" | |
| | COMMUNICATIONS LINES | 3'-6" | |

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**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# VI

## BRIDGE ERECTION, DEMOLITION AND HOISTING OPERATIONS

Submittals for bridge erection, demolition, or other hoisting operations shall be prepared and stamped by a Registered Professional Engineer and must include the following:

1. Plan view showing locations of crane or cranes, operating radii, with delivery or disposal locations shown.

2. Crane rating sheets showing cranes to be adequate for 150% of the lift. Crane and boom nomenclature is to be indicated.

3. Drawings and computations showing weight of picks.

4. Location plan showing obstructions, indicating that the proposed swing is possible.

5. Data sheet listing type and size of slings or other connecting equipment. Include copies of catalog cuts or information sheets of specialized equipment. The method of attachment must be detailed on the erection plan. All lifting components must be adequate for 150% of the lift.

6. A complete procedure indicating the order of lifts and any repositioning or re-hitching of the crane or cranes.

7. Drawings detailing temporary support of any components or intermediate stages.

8. A time schedule (by hour and day) of the various stages, as well as a schedule for the entire lifting procedure.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# VII

## TEMPORARY SHEETING AND SHORING

The following items are to be included in the design and construction procedures for all permanent and temporary facilities on, over, under, within or adjacent to MBTA Railroad Property:

1. Footings for all piers, columns, walls or other facilities shall be located and designed so that any temporary sheeting and shoring for support of adjacent track or tracks during construction will not be closer than toe of ballast slope. (See dimensions in the MBTA's Book of Standard Plans, #1000 and #1002 for tangent and curved track). Sheeting shall be required when excavation is inside of a line which extends horizontally from 5.5 feet off center line of adjacent track, then on a 2 (horizontal) to 1 (vertical) slope. This is known as the zone of influence.

2. Where physical condition of design impose insurmountable restrictions requiring the placing of sheeting closer than specified above, the matter must be submitted to the Director of Engineering for MBTA Railroad Operations for approval of any modifications.

3. When support of track or tracks is necessary during construction of above mentioned facilities, interlocking steel sheeting adequately braced and designed to carry E-80 live load plus 50% impact is required. Soldier piles and lagging will be permitted for supporting adjacent track or tracks only when required penetration of steel sheet piling cannot be obtained or when in the opinion of the Director of Engineering for MBTA Railroad Operations, or their authorized representative, steel sheet piling would be impracticable to place.

4. Exploratory trenches, three (3) feet deep and fifteen (15) inches wide in the form of an "H" with outside dimensions matching the outside of sheeting dimensions are to be hand dug, prior to placing and driving steel sheeting, in areas where railroad underground installations are known to exist. These trenches are for exploratory purposes only and are to be backfilled and compacted immediately. This work must be done in the presence of a railroad inspector.

5. Absolute use of track is required white driving sheeting adjacent to any track. Procedure for arranging the use of track shall be through the Railroad Company(s) representative on the project.

6. Cavities adjacent to sheet piling, created by driving of sheet piling, shall be filled with sand and any disturbed ballast must be restored and tamped immediately as required by the Railroad Company(s).

7. Sheet piling shall be cut off at top of tie during construction. After construction and backfilling has been completed, the piling within twelve (12) feet from centerline of track shall be cut off 24" below bottom of tie or 24" below finished grade, whichever is greater. Sheeting, used as a form on a permanent

structure, shall be cut as directed by the Railroad Company(s).

8. The excavation adjacent to the track shall be covered and protected by handrails and barricades, warning lights shall be provided by the Contractor as directed by the Railroad Company(s).

9. Graded backfill material shall be compacted at near optimum moisture content, in layers not exceeding 6 inches in compacted thickness, by pneumatic tampers, vibrator compactors, or other approved means to the base of the railroad subgrade. Material in the vicinity of sheet pile shall be compacted to not less than 95 percent of AASHTO T 99, Method C. The Contractor shall be required to supply, to the job site, ballast stone as prescribed herein to be installed by the Railroad Company(s).

10. The Contractor is to advise the Railroad Company(s) of the time schedule of each operation and obtain approval of the Railroad Company(s) for all work to be performed adjacent to MBTA tracks so that it may be properly supervised by railroad personnel.

11. AII Drawings for temporary sheeting and shoring shall be prepared and stamped by a Registered Professional Engineer and shall be accompanied by complete design computations when submitted for approval.

12. Particular care shall be taken to avoid erosion or filling of the Railroad Company(s) drainage facilities. Erosion and sediment control in the vicinity of the railroad shall be as approved by the Director of Engineering for MBTA Railroad Operations. Correction of disrupted Railroad Company(s) drainage facilities shall be at the Contractor's sole expense.

## MBTA REQUIREMENTS FOR GEOTECHNICAL MONITORING

**THE FOLLOWING SPECIFICATIONS ARE REQUIRED FOR ALL PILE DRIVING/EXCAVATING OPERATIONS:**

1. Pile driving shall be on a continuous basis for each pile driven. Once a pile is started, it shall be driven or cut off at an elevation not to exceed the plane across the top of the rails of any track within 8'-6" plus 2" for each degree of curvature from centerline of track to the closest edge of the edge or excavation.

2. The monitoring points shall be set up one week before the pile driving or excavation operations begin. The MBTA and the Railroad Company(s) shall be notified. Elevation readings to establish the initial baseline reading shall begin two days prior to the start of driving. Readings shall be for a minimum of two weeks after the completion of the driving or backfilling of the excavation, whichever is longer. Initial readings immediately after any surfacing operations shall serve as new baseline figures. All future elevation readings shall be compared to the adjusted baseline. If the track deviates to a condition that is unacceptable to the MBTA or Railroad Company(s), corrections shall be made at the Contractor's expense.

3. Elevation readings shall be taken from the top of each rail of each track within the "zone of influence" the excavation. See Section 1, Page 1 of this specification.

4. Elevation readings will be taken once per eight hour shift. The readings shall be faxed to the MBTA Railroad Company(s) on a daily basis and all information is to be presented in legible print. During excavation within the sheet pile protected area, the top of rail elevations shall be checked every hour. Additional readings may be required by the MBTA or Railroad Company(s).

5. Stations shall be spaced at 15-1/2 foot intervals. The number of distractions required will be determined by the length of the excavation parallel to the tracks. There will be four additional stations on each end of the pile driving/excavation operation along the track. Extra stations may be required by the MBTA or Railroad Company.

6. Elevation readings must show the date, time, weather conditions and temperature. Each reading must also provide the following information: track number, compass direction, station number, base elevation (with date), static elevation, change in elevation (recorded in hundredths and in inches), dynamic reading and total deflection in inches. See sample sheet attached.

7. Station "0" will be located at the centerline of the project with Stations 1, 2. 3, etc., being to the right and Stations -1, -2, -3, etc., being to the left when

standing on the near track and looking at the work. In multiple track areas the stations as determined herein are to be carried across each track located within any part of the zone of influence. See Plate I.

8. At each monitoring station a dynamic load measurement shall be taken. The dynamic load measurement device shall consist of a wooden stake placed firmly in the ballast and in initially in contact with the bottom of the rail. The loaded measurement is the resultant gap between the bottom of the rail and the top of the stake caused by the deflection of the rail under the load of a passing train. Based on field observations of the excavation, and at the option of the MBTA or railroad company(s), this requirement may be reduced.

9. Elevation readings taken from the top of rail for static measurement and the dynamic reading shall be combined and the sum compared to the adjusted baseline. This reading will demonstrate the difference in elevation caused by the excavation.

10. The MBTA requires that the track be maintained at all times within established criteria for the specific track classification. At the completion of the project the requirement for tamping and realigning the tracks, caused by the settlement from the construction activity, remains with the Contractor for the duration as specified by the MBTA in their initial review of the Construction Drawings. This tamping and track realignment will be performed by the MBTA or railroad company(s) at the sole expense of the Contractor.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# VIII

## BLASTING SPECIFICATIONS

Blasting on, over, under, within or adjacent to MBTA Railroad Property will be permitted only in special cases where it is demonstrated to the Director of Engineering for MBTA Railroad Operations that there is no practicable alternative to perform the work.

In such cases when blasting is permitted, the Contractor must submit a detailed blasting program to the MBTA and Railroad Company(s) for approval prior to the commencement of any work. The blasting program must contain the following information:

a. Site plan with location of nearest MBTA structure.

b. Plan of each blast showing hole spacing and delay pattern. c. Diameter and depth of each hole.

c. Amount of explosives per hole.

d. Total pounds of explosives per day.

e. Total amount of explosives per blast.

f. Type of non-electric delays to be used. h. Amount of stemming in each hole.

g. Type of explosive to be used.

h. Soil and rock profile in blast zone.

i. Scaled distance to the nearest MBTA facility.

j. Type and location of seismograph to be used. m. Size of blasting mats to be used.

k. Safety precautions to be followed.

The following general requirements are to be adhered to:

a. Obtain the services of a qualified vibration and blasting consultant to monitor the blasting.

b. Use a non-electric detonation system whenever possible. If electric caps are used, a check must be made for stray currents, induced current and radio frequency energy to insure that this hazardous extraneous electricity is at an acceptable safe level.

c. Provide an open face for maximum relief of burden.

d. Limit the maximum peak particle velocity to 1 inch per second. Depending on existing conditions, this may be modified to 2 inches per second.

e. Maintain an initial scale distance of 60 ft. per 1-1/2 lbs. After initial blasting, scale distance may be modified to a minimum of 50 ft. per 1-1/2 lbs., if conditions permit.

Scale distance -- Distance from blast to structure (in feet)

Weight of explosives per delay (in pounds)

The Contractor shall provide for a pre-blast and post blast survey, including photographs. An inspection of all nearby MBTA facilities shall be made to determine any changes that may occur due to blasting operations.

The Contractor shall coordinate all blasting with the MBTA and Railroad Company(s) in advance to determine when the charges may be set. The Contractor is advised that the MBTA and Railroad Company(s) use two way radios for train control. The radios operate in the 160 MHz area. These radios cannot be turned off at any time.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# IX

## TEMPORARY PROTECTION SHIELDS FOR DEMOLITION AND CONSTRUCTION

The Railroad Company(s) will determine when and where protection shields are required. The designated construction of temporary protection shields must adhere to the following specifications:

1. The construction of temporary protection shields shall be designed to prevent any dust, debris, concrete, formwork, paint, or tools from falling on MBTA Railroad Property below.
2. The temporary protection shields shall be erected prior to the start of work. The Railroad Company(s) will determine whether or not sufficient protection has been provided to perform the work over any particular area.
3. The temporary protection shields shall remain in place until all work over the railroad has been completed and shall be removed only when ordered by the Railroad Company(s).
4. To minimize the inconvenience to the users of any properties below and adjacent to the project, the Contractor shall be required to complete the actual erection and removal of the temporary shields within time limits acceptable to the Railroad Company(s).
5. The erected temporary protection shields shall not infringe on any existing minimum vertical clearance.
6. The Contractor shall be required to obtain the approval of the Railroad Company(s) before commencing any work beneath the shield. In certain areas, depending on the nature of the work, the Railroad Company(s) may require a specific method of protection.
7. The horizontal shield shall be designed to carry a live load of 100 pounds per square foot and a single concentrated load of 2,000 pounds located to produce maximum stress. The vertical shield shall be designed to carry a wide load of 30 pounds per square foot.
8. Prior to the start of construction, the Contractor shall be required to submit the details of the temporary protection shield to the Railroad Company(s), who will review and approve the details only as to the methods of erection and as to whether or not the proposed installation will provide the level of protection required at the various locations. It is the Contractor's responsibility to design these protections so that they are in conformance with all existing laws, regulations and specifications that govern this type of work. Shield plans must include a material list and shall be designed by a Registered Professional Engineer. The Drawings and calculations must bear their seal when they are submitted to the Railroad Company(s).
9. If during the actual construction, the Railroad Company(s) deems that the shield is not providing the desired level of protection or that the Contractor has failed to properly maintain the shield, all work at the

affected location shall cease until corrective measures acceptable to the Railroad Company(s) are instituted.

10. All temporary shields shall be constructed using new material.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# X

## INDUSTRIAL SIDE TRACK SPECIFICATIONS

## SECTION 1. GENERAL

1.01 All railroad track construction shall be performed under competent supervision of personnel experienced in railroad construction and shall conform to the standards of the MBTA. The MBTA and Railroad Company(s) will inspect and approve all side tracks prior to being put in service. This specification shall be used for side tracks directly on or within 15 feet of the MBTA property line. Any construction outside of the MBTA property line shall be in compliance with the standards of the serving freight railroad.

## SECTION 2. MATERIALS

### 2.01 MATERIAL

Rails, ties, switches, frogs, etc. shall conform to the standards of the MBTA for various types of turnouts and track installations thereby insuring replacement availability.

### 2.02 RAIL

The rails shall be 100# ASCE Section or of a heavier rail section in common use, new or relay. Relay rails shall not have more than 1/4" top wear measured vertically along center line of rail and not more than 3/8" side wear measured horizontally 3/4" below the normal top of rail. Rails shall be free from kinks, excessive rust and excessive head flow. Rails having line or surface bends that cannot be spiked will be rejected. Rail shall be free of internal defects. Rail used on the limits of MBTA Railroad Property shall be equal in weight and in section to the attached main line.

### 2.03 CROSS TIES

Cross ties shall conform to MBTA specifications, minimum size shall be 7" x
8" x 8'6" and shall be treated with creosote in accordance with MBTA specifications. Relay ties may be approved after inspection by the MBTA and Railroad Company(s) prior to installation.

### 2.04 SWITCH TIMBER

Switch timber shall be new hardwood and conform to MBTA specifications 7" x 9" and of lengths required by MBTA standard turnout bill of materials. All timber shall be creosote treated as specified for cross ties. Relay timber as above.

Tie plates shall be new or relay at least 7-1/2" x 10-3/4", 1/2" thick,

double shoulder and should be canted. Tie plates must conform to MBTA specifications. Damaged plates or plates showing more than 25% reduction in section due to corrosion or wear will be rejected.

2.06 JOINT BARS

Joint bars shall be new or relay, 100% toeless, 24" long or equal and conform to MBTA specifications. Relay bars must be free from appreciable wear. Joint bars shall have a minimum of four holes and the holes are to fit the punching's of the rail. Holes to have a clearance of 1/16". Joint bars that cannot be drawn up to give a tight fit will be rejected. No fewer than 4 bolts per joint will be allowed.

2.07 BOLTS, NUTS AND WASHERS

Bolts and nuts shall be new and of a size to fit the rail punching's. They shall conform to AREA specifications for low carbon steel track bolts and nuts. Washers shall be new spring type of appropriate size and shall conform to MBTA specifications.

2.08 TRACK SPIKES

Track spikes shall be 6" long, 5/8" square with an oval head and conform to MBTA specifications for soft steel track spikes. Tangent track shall have at least 2 rail holding spikes per tie plate and all curves over 3" shall have 3 spikes per tie plate.

2.09 BALLAST

Ballast shall conform to MBTA Material Specification 9248.

2.10 BUMPING POSTS

Bumping posts shall be Hayes type, Durable "D" or equal, unless otherwise specified, and will conform to MBTA Material Specification 9206.

2.11 DERAIL

Type and quality of derail shall be specified for each individual side track requirement. Derail shall be connected into the railroad signal system, which will be performed by the Railroad Company(s) at the Owner's expense. Two pairs of insulated joints shall be installed by the Contractor at a location to be determined by the MBTA. Side tracks with a descending grade toward the main track shall require a split switch type derail.

SECTION 3. INSTALLATION

3.01 The track shall be properly installed with a standard gauge of 4'8-1/2" except on sharp curves. In cases of sharp curves, gauge will be specified by the MBTA or the Railroad Company(s).

3.02 Ballast shall be installed on top of subgrade for a depth of at least 6" below the bottom of tie and brought up to the top of the tie at the center and slope off to 1" below top of tie at the ends. It shall then extend 1' beyond the end of the tie at that height, at which point it shall slope off at a rate of 2:1 to the sub- ballast.

3.03 Cross ties shall be placed not more than 24" on center on tangent track and19 ½ " on center on curved track. When relay rails are used the unworn side shall be placed on the gauge side. Tie plates shall be installed on each cross tie. The center of the joint shall be installed so as to be suspended by two ties.

3.04 It shall be the responsibility of the builder of that portion of track designated as "property line to end" to connect to that portion of track designated as "clearance to property line" and provide the necessary joints or compromise joints with bolts as the weights of rail would dictate.

SECTION 4. BONDING

4.01 Where track bonding is necessary, it will be performed by the Railroad Company(s) in accordance with MBTA standards.

SECTION 5. APPROVAL

5.01 Plans for track installation must be approved by the MBTA and Railroad Company(s) before the design of the facility to receive rail service is finalized.

SECTION 6. CURVATURE OF TRACK

6.01 The recommended curvature shall be $8^{o}$ or less. The maximum allowable degree of curve is not to exceed $12^{o}$ 30', unless approved by the Director of Engineering for MBTA Railroad Operations.

SECTION 7. GRADE OF TRACK

7.01 The maximum allowable grade for all tracks shall not exceed 1.5% descending towards mainline or 3% descending from mainline using 100 foot vertical curves.

SECTION 8. ELEVATION

8.01 Super elevation shall not exceed 1 inch.

SECTION 9. SUBGRADE

9.01 Subgrade shall be prepared to a grade 18" - 20" below the proposed top of rail and shall be of a material that is compacted to 95% and provides for adequate drainage.

SECTION 10. ACCEPTANCE

10.01 Before track is placed into service to receive cars, it shall be inspected and approved by a qualified track inspector from the MBTA, the Railroad Company, and the freight carrier.

10.02 No exceptions to these specifications are authorized without the written approval of the Director of Engineering for MBTA Railroad Operations.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# XI

## RIGHT OF WAY FENCING SPECIFICATIONS

## SECTION 1. GENERAL

### 1.01 DESCRIPTION

This section specifies the furnishing and installing of new Type I galvanized steel or Type II aluminum coated steel chain link fence. Right of way fence shall be 6', 8' or 10’ as required by site specific conditions.

### 1.02 SUBMITTALS

Shop Drawings

1. Include cross sectional dimension of posts, braces, rails, fittings, accessories and gate frames, design of gates, and details of gate hardware.
2. Include a layout drawing showing the spacing of posts and location of all gates, abrupt changes in grade, and all corner, gate, anchor, end and pull posts.

## SECTION 2. PRODUCTS

### 2.01 MATERIALS

A. General

1. Steel pipe dimensions and weights: ASTM A-53, Schedule 40 (except the hydrostatic testing requirement is waived). Dimensions specified are outside diameter (O.D.).
2. Provide post with accepted semi-steel or pressed steel tops, so designed as to fit securely over post and carry top rail or spring tension wire; the base of post top fitting shall fit over the outside of post and shall exclude moisture from post. All fittings and accessories shall be hot dipped galvanized in accordance with ASTM A-53.

B. Line Post: For all post heights, unless otherwise noted, Schedule 40, 2.375” O.D. pipe weighing 3.65 lbs./ft. ASTM A-53 with a 2 oz. hot dipped galvanized coating shall be used.

C. Gate post: Furnish post to support single gate leaf, or one leaf of a double gate installation, for the following gate widths:

| Leaf Width | Gate Post | Sch. 40 |
|---|---|---|
| up to 6' | 2.875" O.D. | 5.79 lb./ft. |
| 6' to 12’ | 4.000" O.D. | 9.11 lb./ft. |
| 12' to 18' | 6.625" O,D. | 18.97 lb./ft. |
| 18' to 32' | 8.625" O.D. | 28.55 lb./ft. |

D. End, Corner and Intermediate Posts

For all post heights, unless otherwise noted, Schedule 40, 2.875" O.D. pipe weighing 5.79 lbs./ft. ASTM A-53 with a 2 oz. hot dipped galvanized coating shall be used.

E. Top rail and Spring Tension Wire

1. Top Rail

   a. Schedule 40, 1.66" O.D, pipe weighing 2.27 lbs./ft. ASTM A-53 with a 2 oz. hot dipped galvanized coating.

   b. Couplings and expansion sleeves: Outside sleeve type, minimum six inches long.

2. Spring tension wire: shall be marcelled (spiraled or crimped) #7 gauge (.177 inches) plus or minus 0.005 inches in diameter. ASTM A-824. 1.2 oz. zinc per sq. ft.

F. Braces and Tension Rods

1. Compression braces: Same type and size as top rail.

2. Tension rods: 3/8" round rods with drop forged turnbuckles or other approved type of adjustment.

G. Fence Fabric

1. Type I galvanized steel ASTM A-392 Class 2 coating 2 oz.

   a. Typical-2" diamond mesh 6 gauge (192") 2 oz.

   b. Hot dipped galvanizing after weaving.

2. Type II aluminum coated steel ASTM A-491 size 2. 3/8" mesh.

3. Selvages: All types

   a. Fabric shall be knuckled at both selvages.

   b. Fabric over 60 inches high: knuckled at one selvage and twisted and barbed at the other.

H. Fabric Bands, Brace Bands and Stretcher Bars

1. Fabric Bands: 12 gauge pressed steel 7/8 inch wide.

2. Brace Bands: 11 gauge pressed steel 1 inch wide.

3. Stretcher Bars: 3/16" x 3/4" galvanized steel.

I. Tie wire and miscellaneous Items

1. Tie Wire: Galvanized steel 6 gauge (.192") for post and rails.
2. Hog rings: Galvanized steel 6 gauge (.192") for spring tension wire.
3. Rail and Truss Cups: Galvanized semi-steel or pressed steel.

J. Barbed Wire and Extension Arms

1. Barbed Wire; ASTM AI21, 12-1/2 gauge, 4-point round barbs, Class 3 coating.
2. Extension Arms: Projecting at an angle of approximately 45 degrees, fitted with clips or other means of attaching three strands of barbed wire, the top outside wire approximately 12 inches from the fence line and the other wires spaced uniformly between the top outside wire and the fence fabric.

K. Gates

1. General: Furnish gates complete with necessary hinges, latches, and drop bar locking devices; corners shall be welded or fastened and reinforced with suitable fittings.
2. All gates fabricated from 1.90" O.D. Schedule 40 pipe weighing 2.72 lbs./ft. with a 2 oz. hot dipped galvanized coating.

L. Concrete: Class 2500 psi concrete consisting of aggregate passing the No. 8 sieve.

## SECTION 3. EXECUTION

### 3.01 INSTALLATION

A. Place terminal post at each end, corner, gate post, pull post (minimum 500'), or any change in grade or direction greater than 30 degrees.

B. Line posts shall be spaced on a maximum of 10 foot centers. In determining the post spacing, measure parallel to slope of finished grade. All posts to be set plumb and in line. Post spacing on radius as follows:

200'- 500' radius 8' O.C.
100’ - 200' radius 6’ O.C.
less than 100’ radius 5' O.C.

C. When fencing is installed on the top of concrete structures, use galvanized sleeve and grout posts or install with suitable galvanized flange casing and galvanized anchor bolts. Set all other posts permanently in concrete.

D. Excavate post hole footings at least 12" in diameter for line post and I6" for terminal and gate posts up to 4" O.D. Larger gate posts require 18" diameter footings. All footings excavated to a depth of 42" with a minimum post embedment of 36". Crown top of concrete to shed water and allow curing for not less than 72 hours before proceeding with further work on the post.

E. Brace end, corner pull, and gate posts to the nearest line post with diagonal or horizontal brace rails used as compression chambers, and with truss rods with turnbuckles used as tension members. Brace line posts horizontally and truss in both directions as required, at approved intervals.

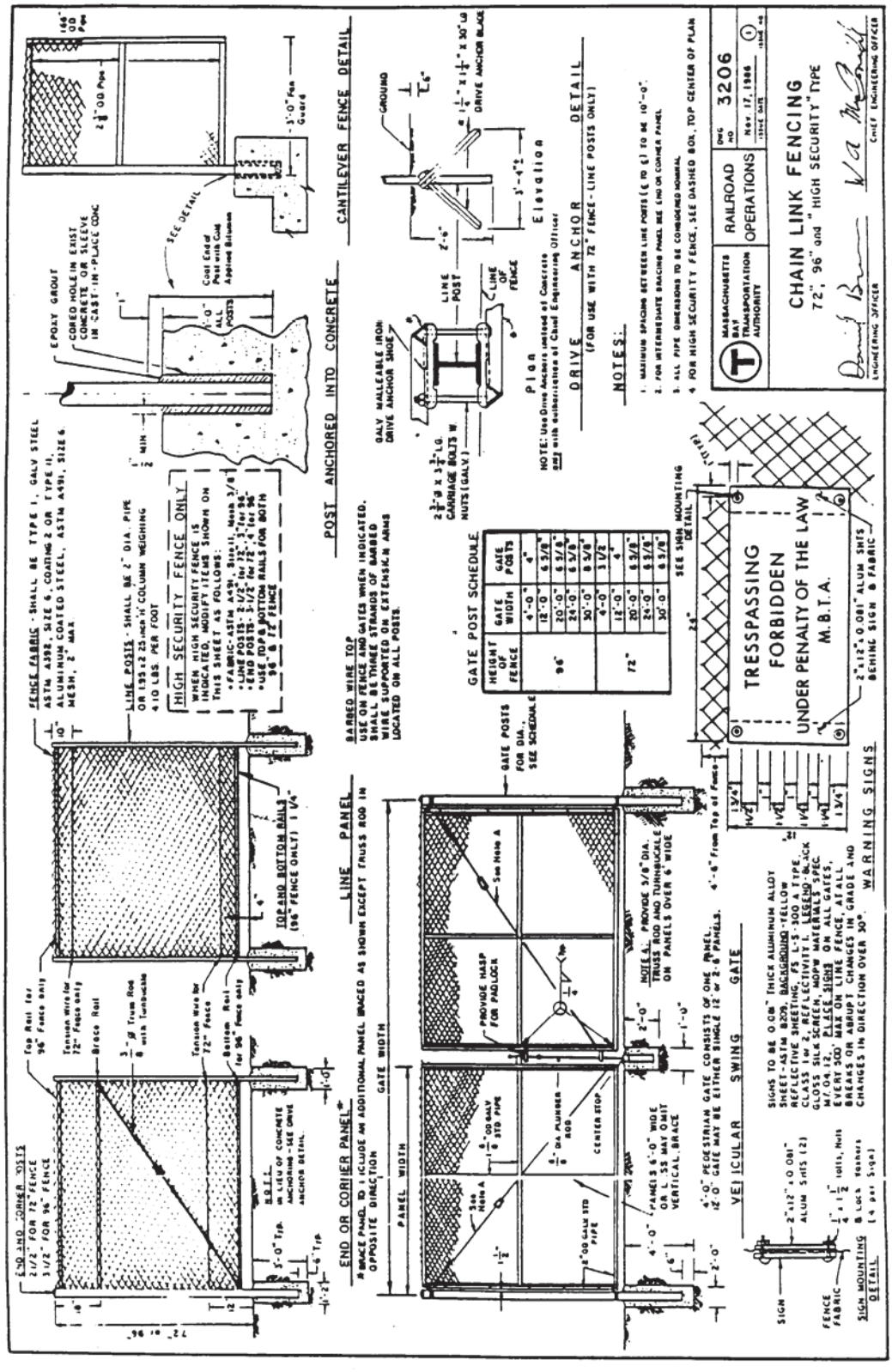
F. Install fabric on post side which best secures MBTA's Railroad Property. Pull fabric taut and tie to all line posts, rails, braces and spring tension wire spacing all ties at 12" intervals. Use hook shaped steel ties confined to the diameter of the pipe to which it is attached, clasping pipe and fabric firmly with both ends twisted at least 2 turns.

G. Barbed wire and tension wire must be taut and properly secured with brace bands at each terminal and gate post.

H. Electric Ground: Where a power line carrying more than 600 volts passes over fence, install ground rod at the nearest point directly below each point of crossing. Ground all substation fences and gates and perform other electrical grounding as indicated.

3.02 TOUCH-UP AND REPAIR WORK

Remove and replace fencing which is improperly located or is not true to line, grade and plumb within tolerances as indicated.


CHAIN LINK FENCING
72", 96" and "HIGH SECURITY" TYPE
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY
RAILROAD OPERATIONS
DWG NO 3206
Nov. 17, 1986
POST ANCHORED INTO CONCRETE
CANTILEVER FENCE DETAIL
HIGH SECURITY FENCE ONLY
GATE POST SCHEDULE
DRIVE ANCHOR DETAIL
(FOR USE WITH 72" FENCE - LINE POSTS ONLY)
NOTES:
END OR CORNER PANEL
LINE PANEL
VEHICULAR SWING GATE
WARNING SIGNS
TRESSPASSING FORBIDDEN
UNDER PENALTY OF THE LAW
M.B.T.A.

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# XII

## TEST BORINGS SPECIFICATIONS

SECTION 1. GENERAL

All borings on MBTA Railroad Property are to be performed according to the following requirements:

1.01 Work on MBTA Railroad Property must be performed with a Railroad Company(s) inspector and/or flagman present.

1.02 Where access can only be gained by crossing the tracks, a temporary crossing must be used. This crossing shall adhere to the following:

A. The location and material must be approved in advance by the Chief Engineering Officer or Railroad Company(s).

B. The crossing will be constructed by Railroad Company(s) forces at the Contractor's expense.

C. The crossing must be protected at all times when not in use. Access shall be prohibited through the use of right-of-way gates which will be constructed by Railroad Company(s) forces at the Contractor's expense.

D. No crossing of the track shall be made without a railroad flagman and/or inspector present.

E. The crossing of tracks shall be kept to a minimum.

1.03 Boring locations, including positioning of the boring rig, shall be kept at least 8'-6" from the center line of track.

1.04 All borings must be cased to insure adequate return (of mud and water) and to avoid undermining of the track.

1.05 All holes shall be backfilled with cement grout to fill the voids and protect against an artesian condition.

1.06 The location of all utilities owned or private, shall be located and suitably marked by the Railroad Company(s) and/or the private owner at the Contractor’s expense to avoid damage to the utility and/or track structure.

1.07 Prior to entry upon the MBTA Railroad Property, all necessary contracts, insurance policies and financial obligations shall be provided in a form acceptable to the Railroad Company(s).

1.08 Work within the operating right-of-way that has potential to foul the tracks, shall be restricted to periods of non-peak passenger operations.

1.09 While performing the work, full cooperation with the inspector and flagman is essential. The work will be terminated immediately if the safety of all traffic and personnel is jeopardized in any way.

SECTION 2. TESTING

2.01 Soil borings shall be in accordance with the current issue of the American Railway Engineering Association Specifications, Chapter 1, Part 1, "Specifications for Test Borings". Soils shall be investigated by the split-spoon and/or thin-walled tube method and rock shall be investigated by the Coring method specified therein.

2.02 Soil boring logs shall clearly indicate all of the following:

1. Boring number as shown on boring location plan.
2. Elevation of ground at boring.
3. Description or soil classification of soils and rock encountered.
4. Elevations or depth from surface for each change in strata.
5. Identification of where samples were taken and percentage of recovery.
6. Location of ground water at time of sampling and, if available, subsequent readings.
7. Natural dry density in Ibs./sq. ft. for all strata.
8. Unconfined compressive strength in tons/sq. ft. for all strata.
9. Water content (percent). Liquid Limit (percent) and plastic limit (percent).
10. Standard penetration in blows/ft.

2.03 Soil boring logs shall be accompanied by a plan drawn to scale showing location of borings in relation to the tracks, the elevation of ground surface at each boring, and the elevation of the top of rail of the tracks.

2.04 Soil investigation by auger, wash, or rotary drilling method is not acceptable.

2.05 Borings shall be taken no more than two (2) feet from the field stake which marks the boring location. The stake should not be disturbed during boring operations. Lost stakes shall be reinstalled.

2.06 Unless a boring hole is actively being worked, it shall be securely covered or otherwise protected until permanently filled. When work at each boring hole is completed, the hole shall be properly filled.

2.07 Access to the boring locations must be approved by the Railroad

Company(s). When possible, access shall be from public roads. Licenses for Entry, Insurance and Flag Protection must be obtained by the Contractor in accordance with all applicable MBTA Specifications.

2.08 Boring operations shall be confined to each boring location to the extent possible.

The Contractor shall take necessary precautions to prevent damage to structures and facilities. The site shall be restored to a condition satisfactory to the Railroad Company(s).

**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

RAILROAD OPERATIONS DIRECTORATE

# XIII

## FIBER OPTIC CABLE SPECIFICATIONS

SECTION 1. GENERAL

1.01 The purpose of the following standards is to provide basic information about the MBTA's requirements with respect to the design and construction of fiber optic cables on MBTA Railroad Property to fiber optic cable companies and their Contractors.

1.02 All work performed on or affecting MBTA Railroad Property must be designed and constructed in accordance with the Commuter Rail Design Standards (Vol. I and II), MBTA Book of Standards, Railroad Operations Specifications and the following standards. Additional job specific requirements will be contained in the MBTA's Fiber Optic License Agreement and can be obtained by contacting:

AGM for Real Estate and Asset Development
Ten Park Plaza
Boston, MA 02116

The Director of Engineering for MBTA Railroad Operations or their designated representative will be responsible for the approval of all work. No modifications, changes or deletions will be made without their approval.

SECTION 2. PROJECT REVIEW AND COORDINATION

2.01 All Drawings and specifications shall be reviewed and approved by the MBTA and Railroad Company(s) prior to construction. The MBTA must approve the construction schedule and sufficient Railroad Company(s) personnel must be available before work begins.

2.02 If another fiber optic cable company has previous or exclusive rights along the proposed route, the alignment and cable location must be approved in accordance with existing agreements.

2.03 The fiber optic cable companies must coordinate the construction with others to minimize the disruptions to the MBTA railroad operations.

SECTION 3. CONDUCT OF WORK

3.01 In order to minimize the manpower requirements of the Railroad Company(s) and afford better control, supervision, and protection, the Contractor will conduct their work sequentially and minimize the number of crews and their proximity. Crews should be confined geographically to an area that can be covered easily by a minimum number of Railroad Company(s) personnel. This can be accomplished by a block method of construction. A construction block will be used and is a 1-4 mile segment of right of way in which up to 3 fiber optic cable installation crews can work. The crews can work within the construction block, but cannot work outside of it. The construction block

must move as a unit along the right of way. The crews cannot work two blocks concurrently.

SECTION 4. CONSTRUCTION SCHEDULE

4.01 The fiber optic company or its Contractor will submit a schedule of work to the MBTA for approval. The schedule will be based on methods of construction acceptable to the MBTA and Railroad Company(s). No work shall begin prior to approval by the MBTA.

4.02 Any changes or modifications to the schedule proposed by the fiber optic company or its Contractor must be submitted to and approved by the MBTA prior to implementation. The MBTA, however, may be required to change or modify the construction schedule on account of its operations, maintenance requirements, or manpower shortages. In this event, the MBTA will give the fiber optic cable company as much advance notice as possible.

4.03 Construction schedules will be reviewed and updated every two (2) weeks or as required.

SECTION 5. ESTIMATE OF EXPENSES

5.01 An estimate of anticipated expenses will be provided based on durations provided by the fiber optic cable company or their Contractor and construction schedules approved by the Railroad Company(s). Any changes in the schedule will cause the estimate to be revised. The fiber optic cable company or their Contractor will be responsible for all of the costs incurred by the MBTA and Railroad Company(s) in support of the construction activities. This includes design review, engineering support, administration and supervision.

SECTION 6. BILLING

6.01 The fiber optic cable company or its Contractor will be required to pay for railroad protective services in advance of costs incurred.

# SECTION 01568

# CONSTRUCTION SAFETY

## PART 1 - GENERAL

### 1.1 DESCRIPTION

A. This Section specifies requirements to establish a practical, sound, and effective program for the prevention of construction accidents, and to assign specific responsibilities to Contractors for program compliance.

B. Contractors and their supervisors must control hazardous activities and conditions within their respective areas of contract responsibility.

### 1.2 SUBMITTALS

A. Safety and Health Plan: The contractor shall, within thirty (30) days after receipt of the award of a contract, submit for approval to the MBTA, a detailed operational Safety and Health Plan.

B. Safety Supervisor: The Contractor shall within thirty (30) days after receipt of the award of a contract submit the resume of the qualifications and work experience of the designated Safety Supervisor proposed for assignment to the Project. No construction work shall begin until the project Safety Supervisor has been approved by the MBTA. The Safety Supervisor shall have a minimum of 5 years of experience in construction safety or a related field.

C. Monthly Accident Experience Summary: The Contractor shall submit an Accident Experience Report monthly during the course of construction to the MBTA.

D. Industrial Industry Records: Prior to start of work, the Contractor shall submit their Injury/Illness Record**s** for the previous 3 years. In addition, the Contractor shall submit annually to the MBTA all subsequent Illness/Injury Reports for the duration of the project.

## PART 2 - PRODUCTS

**None**

## PART 3 - EXECUTION

### 3.1 SAFETY AND HEALTH PLAN

A. The Contractor shall submit a project Safety and Health Plan. At a minimum, the plan shall include the following sections:

i. Emergency Action Plan
ii. First Aid Facilities
iii. Serious Accidents
iv. Emergency Telephone Numbers
v. Protection of the Public
vi. Site Visits
vii. Substance Abuse/Prevention/Testing

### 3.2 SAFETY SUPERVISOR

A. Complete daily safety inspections of the job site and contiguous public areas, and take any corrective actions to eliminate unsafe conditions.

B. Establish and implement a project safety training program for supervisors and employees as applicable to their job.

C. Attend project safety meetings.

D. Review Foreman accident and investigation reports, and initiate corrective action to prevent reoccurrence.

E. Maintain copies of all Contractor Safety Reports.

F. Assist Foremen in accident investigations.

G. Encourage establishment of incentive programs designed to recognize individual employee safety efforts and contributions towards improved safety.

H. Prepare a Safety Audit Checklist and complete the checklist each week during the course of construction. The completed Audit Checklists shall be submitted to the Authority weekly.

I. The Safety Supervisor needs to be on the project site when major work tasks are being performed. During work periods when the Contractor is not performing contract work, the Safety Supervisor can be absent from the project site with permission from the Authority.

## 3.3 ACCIDENT INVESTIGATION

A. Serious accidents shall be reported immediately to the MBTA Resident Engineer. Contractors shall issue standing orders to all supervisors directly in charge of operations that the scene of the accident shall not be disturbed, except for rescue or other emergency measures, until otherwise directed. Contractor's forces either witnessing or party to the accident shall be detained at the site to provide detailed accounting of facts.

B. All reports shall be submitted to the MBTA. The accident investigation shall generate appropriate recommendations for corrective actions to prevent similar recurrence of similar accidents.

C. The requirements of MBTA Safety Procedure 7.3 Contractor Safety Violation Program shall be followed by the Contractor when completing an accident report.

## 3.4 FIRST AID FACILITIES

A. In formulating the Health and Safety Plan, the Contractor shall provide for the establishment and staffing of appropriate first aid facilities for the treatment of on the job injuries.

B. Off-site medical treatment of employee injuries shall be performed at medical facilities named in the Contractor's Safety Submittal.

## 3.5 EMERGENCY TELEPHONE NUMBERS

To ensure that emergency actions are promptly taken, Contractors shall post emergency telephone numbers in conspicuous places.

## 3.6 ORIENTATION PROGRAM

A. The Contractor shall establish and maintain an orientation program for new employees which shall include:

i. For each individual the hazards present in their work assignment and in the general area in which he will be working.
ii. Personal protective equipment required.
iii. Instruction in the proper procedure for reporting unsafe job conditions which he/she may encounter.

## 3.7 RIGHT OF WAY SAFETY AWARENESS

A. All Contractor and sub-contractor personnel shall complete either the MBTA Rapid Transit right-of-way safety training or the MBCR Commuter Rail right-of-way safety training prior to entering the project site. ROW safety training will be required on all MBTA property including the RR track, stations, parking garages and maintenance car houses. Personnel will not be allowed on the job site unless they have attended a Right-of-Way Safety Awareness training session. Workers are required to carry their certification card while on site.

## 3.8 OSHA

A. The Contractor shall comply with the OSHA 1926 Construction Safety Standards that apply to the project work. The Contractor shall meet the reporting requirements, and employers with eleven (11) or more employees must meet recordkeeping requirements.

B. All Contractor and Sub-Contractor personnel shall possess an OSHA 10 Hour Certification card when working on the project site.

C. All fatality cases and/or serious accidents and illness shall be reported to OSHA immediately by phone to an Occupational Safety and Health Area Office. Employers must report immediately all blasting accidents.

D. Part of the OSHA requirements is that each employer must post in a prominent location the "Safety and Health Protection on the Job" poster. The poster briefly states the intent and coverage of the Act. Failure to post this document is a citable offense under the Act.

## 3.9 PROSECUTION OF THE WORK

A. The Contractor shall take all reasonable precautions in the performance of the work to protect the safety and health of its employees and members of the public and shall comply with all applicable MBTA, Local, State and Federal safety and health regulations and associated reporting requirements.

B. The Contractor Safety Supervisor is charged with sole responsibility of on-site safety management under the direction of the Contractor Project Superintendent. All potential safety hazards identified shall be promptly corrected. The Safety Supervisor shall complete daily reviews of the project site and document then results on the inspection.

C. The MBTA shall notify the Contractor of any non-compliance and of the corrective action required. This notice, when delivered the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the non-compliance and corrective action required after receiving the notice, the contractor shall immediately take corrective action. If the contractor fails or refuses to take corrective action promptly, the MBTA may, without prejudice to other legal or contractual rights, issue an order stopping all or part of the work; and may subject contractor to safety violation assessments as deemed appropriate by the MBTA. Resumption **of work** may be issued by the MBTA Safety Department.

D. The Contractor shall maintain an accurate record of exposure data on all accidents and incidents occurring under this contract and report this data in a manner prescribed by the MBTA.

E. The Contractor shall be responsible for all its lower-tier sub-contractor's and vendor's compliance.

F. Contractor management shall make a commitment for accident prevention and fire prevention. Safety shall take precedence over schedule and production. Enforcement action is mandatory.

## 3.10 WORK AUTHORIZATIONS

A. The following work authorizations will be issued by the MBTA:

i. Excavation

ii. Hot Work

iii. Confined Space Entry

iv. Cranes and Suspended Platforms

## 3.11 WORKING NEAR THE THIRD RAIL

A. When working on or near the third rail, when the power is off, the contractor must have a third rail high-voltage warning device on the job site approved by the MBTA Power Department. This device will warn work crews if the third rail becomes energized at any time during work activity involving the right-of-way.

## 3.12 HAZARDOUS SUBSTANCES

A. Any Contractor who uses substances on the hazardous substances list to which workers might be exposed under either normal work conditions or reasonable foreseeable emergency conditions resulting from work place operations must provide those workers with the required hazardous substance information.

## 3.13 PERSONAL PROTECTIVE EQUIPMENT

A. All Contractor personnel must wear the required personal protective equipment when on the job site. Personal protective equipment includes hard hats, safety vest, safety glasses and proper footwear.

## 3.14 PROTECTION OF THE PUBLIC

A. All necessary precautions to prevent injury to the public or damage to property of others shall be taken. The public is defined as all persons not employed by or under contract or subcontract to the MBTA. Installation of temporary barriers and/or fencing designated to protect the public shall be reviewed and approved by the MBTA. Precautions shall include but not be limited to the following:

B. Work shall not be performed in any area occupied by the public unless specifically permitted by the contract or in writing by the MBTA.

## 3.15 SUBSTANCE ABUSE/PREVENTION/TESTING PROGRAM

A. The Contractor shall establish a substance abuse policy and testing program that includes the following elements:

☐ Deterrence

☐ Treatment and Rehabilitation
☐ Detection
☐ Enforcement

The MBTA reserves the right to approve the proposed substance abuse program prior to commencing the contract.

## 3.16 CONDUCT OF TOURS

A. Group tours must be cleared through the MBTA, allowing maximum advance notice and in compliance with MBTA Policy and Procedures.

B. MBTA will coordinate the tour arrangements and ensure notification to the Contractors Project Manager.

## 3.17 HOUSEKEEPING

A. A basic concept in any effective accident prevention program is "good housekeeping." No one item has a great impact on the overall success of a safety program for a construction project. The importance of good housekeeping is such that it must be planned from the beginning of the job and carefully supervised through the final cleanup.

B. During the course of construction, work areas, passageways and stairs, in an around buildings and structures, shall be kept clear of debris. Construction materials shall be stored in an orderly manner. Storage areas and walkways on the site shall be maintained free of depressions, obstructions and debris.

# PART 4 - MEASUREMENT AND PAYMENT

A. No separate measurement or payment will be made for work required under this Section.

UNITED STATES DEPARTMENT OF LABOR

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- **Part Number:** 1926
- **Part Title:** Safety and Health Regulations for Construction
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- **Title:** Table of Contents

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APPENDIX A TO PART 1926 -- DESIGNATIONS FOR GENERAL INDUSTRY STANDARDS INCORPORATED INTO BODY OF CONSTRUCTION STANDARDS.

**SOURCE:** 44 FR 8577, Feb. 9, 1979; 44 FR 20940, Apr. 6, 1979, unless otherwise noted.

**EDITORIAL NOTE:** At 44 FR 8577, Feb. 9, 1979, and corrected at 44 FR 20940, Apr. 6, 1979, OSHA reprinted without change the entire text of 29 CFR Part 1926 together with certain General Industry Occupational Safety and Health Standards contained in 29 CFR Part 1910, which have been identified as also applicable to construction work. This republication developed a single set of OSHA regulations for both labor and management forces within the construction industry.

**Editorial Note:** The Federal Register of August 2, 1995, page 39254 issued a Final Rule; correcting amendment. OSHA will maintain the existing fall protection requirements for steel erection activities pending rulemaking that addresses the steel erection industry. This affected 1926.104, 1926.105, 1926.107, 1926.500, and 1926.753.

[55 FR 42328, Oct. 18, 1990; 55 FR 47687, Nov. 14, 1990; 58 FR 26627, May 4, 1993; 58 FR 35077, June 30, 1993; 59 FR 215, Jan. 3, 1994; 59 FR 36695, July 19, 1994; 59 FR 40729, Aug. 9, 1994; 59 FR 40964, Aug. 10, 1994; 60 FR 5131, Jan. 26, 1995; 60 FR 39254, Aug. 2, 1995; 61 FR 5507; Feb. 13, 1996; 61 FR 9227, March 7, 1996; 61 FR 31427, June 20, 1996; 61 FR 46025, Aug. 30, 1996; 62 FR 1493, Jan. 10, 1997; 63 FR 1152, Jan. 8, 1998; 63 FR 1919, Jan. 13, 1998; 63 FR 3813, Jan. 27, 1998; 63 FR 13338, March 19, 1998; 63 FR 17093, April 8, 1998; 63 FR 20098, April 23, 1998; 63 FR 33450, June 18, 1998; 63 FR 35137, June 29, 1998; 64 FR 18810, April 16, 1999; 66 FR 5265, Jan. 18, 2001; 70 FR 76985, Dec. 29, 2005; 71 FR 2885, Jan. 18, 2006; 71 FR 16675, April 3, 2006; 75 48130, Aug. 9, 2010]

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MBTA SPECIAL INSTRUCTIONS

APRIL 2003

LETTER OF TRANSMITTAL REGARDING SPECIAL INSTRUCTIONS

The Subway Operations, Bus Operations, Safety, Systemwide Maintenance & Improvements, Operations Support, and the Design and Construction Departments of the MBTA have determined that certain limitations regarding Contractor's activities are required while working on a construction project.

These Supplementary Conditions are included herein to augment the MBTA Standard Specifications, Division I - General Requirements, Section 00700 - General Conditions, Article 6 - Prosecution and Progress, Paragraph 6.04 - Limitations of Operations with additional information, which is applicable to construction projects.

However, for non-MBTA construction projects where Division I does not apply, such as in the case of rights to construct on MBTA property granted under a lease or license agreement, the enclosed Special Instructions are still applicable unless otherwise directed.

Contract drawings and specifications for non-MBTA construction projects, relative to all work that will be performed within or directly adjacent to MBTA property, must be submitted to the Authority's Chief Engineer of Design and Construction, Director of Subway Operations, Director of Bus Operations, Director, of Systemwide Maintenance & Improvements, Director of Operations Support, Director of Safety, and the Director of Real Estate. The addresses and phone numbers are listed on. the next page. The, special instructions contain information to be complied with by the owner, contractors, and others associated with the project.

Applicable provisions of the special instructions plus additional requirements from other MBTA departments must be included in the contract specifications as instructions to the contractor when performing work on or adjacent to MBTA property. Permission to perform work on MBTA property will be granted by the Director of Real Estate only when contract plans and specifications are approved by the MBTA.

The enforcement of any of the following conditions shall not be construed as waiving any of the rights of the Authority in any of the other conditions of an MBTA contract.

A meeting to further discuss MBTA requirements may be arranged by contacting the offices of those listed in Article l.a. and/or b. herein.

1. ACCESS TO AUTHORITY PROPERTY

A. For MBTA Contractors Only: An owner or Contractor who wishes permission to enter upon or perform work over, on, under or adjacent to Authority property shall submit to the offices of the Authority's Chief Engineer of Design and Construction, the Director of Bus Operations, the Director of Subway Operations, Director of Systemwide

Maintenance & Improvements, and the Director of Operations Support, a request in writing, a minimum of forty-two (42) days prior to the owner or the Contractor's planned commencement of any of the above stated activities. Addresses of the above are as follows:

MBTA' s Chief Engineer of Design and Construction
6th Floor
10 Park Plaza
Boston, MA 02116
617 222-3116

Director of Systemwide Maintenance & Improvements
500 Arborway
Jamaica Plain, MA 02130
617 222-5454

Director of Subway Operations
10th Floor
45 High Street
Boston, MA 02110
617 222-4554

Director of Bus Operations
10th Floor
45 High Street
Boston, MA 02110
617 222-3368

Director of Operations Support
10th Floor
45 High Street
Boston, MA Q2110
617 222-5460

Director of Safety
2nd Floor
21 Arlington Avenue
Charlestown, MA 02129
617 222-4244

B. Non-MBTA Construction Contractors For Lessees or Licenses of the MBTA Only: An owner or Contractor who wishes permission to enter upon or perform work over, on, under or adjacent to Authority property shall submit to the offices of the MBTA's designated representative for real estate listed below, a request in writing, a minimum of forty-two (42) days prior to the owner or the Contractor's planned commencement of any of the above stated activities. The designated representative will distribute plan sets to the above MBTA departments and will coordinate departmental approvals. Application forms and instructions for obtaining access to MBTA property

can be obtained by visiting the designated representative's website listed below and selecting "MBTA" and "Licensing."

License Administrator
Massachusetts Realty Group
20 Park Plaza, Suite 1120
Boston, MA 02116
617-316-1654
www.mbtarealty.com

The designated representative reports directly to:

MBTA Director of Real Estate
5th Floor
10 Park Plaza
Boston, MA 02116
617 222-3255

C. Requests shall specify the name of the owner or the contractor, the reasons for entering the property, where the property will be entered, each individual location where work of a different nature is to be performed, the nature of such work, and the number of days, including time schedule, the owner or the contractor intends to remain on the property at each location. The Authority will process such requests and meet with the owner or contractor to work out a schedule and phasing .for the work plus other arrangements including financial. The Authority shall request a list of the names of each individual who will enter upon or perform work on Authority property.

D. The owner or contractor shall. notify the representative of the Design and Construction Department and the appropriate Operations Director at least seventy-two (72) hours prior to entering the property as agreed upon earlier with the Authority. The owner or contractor shall notify the Design and Construction, and Operations Departments immediately if the job is to be closed down unexpectedly and shall again notify the Authority as specified above when work will commence.

E. The owner or contractor shall make all necessary arrangements with the Authority before entering upon the property and perform the work in accordance with an MBTA approved work schedule. The owner or contractor shall not enter MBTA property or perform any work on Authority property without the presence of an assigned MBTA representative from the Design and Construction Department or the Operations Department who is responsible for monitoring the work of that owner or contractor for the Authority. Working on Authority property without an assigned MBTA representative present shall be cause for immediate eviction from the property.

F. The owner or contractor must have in place a method of payment for all Authority support services such as flagging, work trains, power shut offs, etc., prior to commencement of any work. This will be processed through a written force account agreement between the Authority and the owner or contractor prior to commencement of work. Direct billing to contractors for Authority support services requires the contractor's authorized representative to agree in writing that the company will reimburse the Authority for those support services, including overhead and fringe benefits. Once the Authority receives the signed statement from the contractor, the General Accounting

Office will open a reimbursable account for specific Authority department(s) to charge costs, and the contractor will be billed directly.

G. The work associated with this project, except as hereinafter expressly provided, will be done without interruption of or change in the regular work or operation of vehicles of the Authority. No work shall be done affecting the operations of vehicles or operations of stations until the contractor has submitted details of his procedures to the Design and Construction and the applicable Operations representatives thirty (30) working days prior to start of work and has secured written permission to proceed.

H. The Authority reserves the right to require work affecting the safety of the operations to be performed at prescheduled non-operating periods from approximately 1:30 a.m. to 5:00 a.m. daily (1:30 a.m. - 4:30 a.m. effective); 1:30 a.m. to 6:00 a.m. Sunday (1:30 a.m.-5:30 a.m. effective). The contractor will not be permitted to remain within the track right-of-way after 5:00 am. (6:00 a.m. Sunday). The Authority may, during emergencies or at times when the Authority work forces are required to work in the area of the contractors work, order the contractor to cease work and remove his work forces and equipment from the property leaving the right-of-way in a safe operating condition. The Authority also reserves the right to stop or postpone any contractor's previously approved work if, in the Authority's opinion, such work is being performed in a manner that will endanger and/or delay the Authority's regular work or operations.

I. The owner or contractor shall make their own provisions for electric power, compressed air, water, ventilation, and disposal of seepage water. No use of existing MBTA utilities will be permitted unless approved in advance by the Authority.

J. The owner or the contractor's attention is directed to other projects that will be ongoing simultaneously in the work area. The Authority will determine priorities for site access between this project and others.

K. The Authority reserves the right to deny the contractor access to the right of way because of operational requirements, adverse weather conditions or emergency track, signal, and power repairs. The contractor shall reasonably expect to be denied access to the site a total of 10 (ten) days per calendar year, this does not include the following holidays; New Year's Day, President's Day, Patriot's Day, Memorial Day, Bunker Hill Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, and Christmas Day. In addition, right of way access may be denied on days when various Special Events impact service as well as during Red Sox home games on the Green Line.

Furthermore, the contractor shall also expect to have his access to the site delayed a total of 4 (four) times per month. Each delay shall be 60 (sixty) minutes or less. The contractor shall make allowances for these possible events in their bid. Due to increased stopping distances associated with slippery rail conditions, non-emergency access will not be allowed within ten (10) feet of the centerline of the track under adverse weather conditions.

L. The contractor shall perform his work at all times so as to cause no interruption of service during operating hours and shall at all times after performing work during either operating hours or non-operating hours leave the Authority's property in a clean and safe operating condition.

M. On occasion, the Authority will operate work cars, test trains, security trains, and/or hirait Vehicles in, the area of the work. At no time during these occurrences will the contractor be allowed to work on the right-of-way, except with the approval of the Authority or the Authority personnel providing protection services as defined in Protection Services.

2. INSURANCE REOUIREMENTS

A. The owner or Contractor's for MBTA Construction Contracts insurance requirements shall conform to the latest version of MBTA Standard Specifications, Division 1 - General Requirements, Section 00700 . General Conditions, Article *5* . Legal Relations and Responsibility to the Public, Paragraph *5.04* . Insurance Requirements. Owners or Contractors under a lease or license agreement with the MBTA shall provide insurance in accordance with the requirements of said agreement.

3. SUBMITTAL OF SPECIFICATIONS DRAWINGS. DESIGN AND METHODS OF CONSTRUCTION

(Applies to non-MBTA Construction Contracts. MBTA Construction Contracts are covered under Division I)

A. An owner or contractor or others performing a non-MBTA construction contract that requires performing construction over, on, under or adjacent to the Authority's property shall submit to both the Design and Construction Department and to the appropriate Operations Department two (2) sets each of contract drawings and specifications at the 30%, 60%, 90% and 100% phases of design of the project. 100% drawings and specifications must be submitted forty-two (42) days prior to the planned commencement of any work.

B. The contractor's drawings and specifications shall define the work in detail and a Professional Engineer registered in the Commonwealth of Massachusetts shall stamp the final drawings. The contractor or owner shall also submit a crane or heavy equipment location, if used, with dimensions to the face of abutments and structures and calculations of crane equipment loading on Authority structures showing no adverse effect on any structures. All calculations shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts. The drawings must include any excavation support systems, shoring, underpinning, protective shielding, or any work required for the protection of MBTA property.

C. Unless otherwise agreed to in advance, the owner or contractor's structures shall not attach to, be placed against, pass through, or impose any loads upon any structures or facilities owned by the MBTA.

D. All construction work shall be performed in strict conformity with final plans and specifications that have been reviewed and approved by the MBTA. Any changes requested by the owner or contractor which affect MBTA property or operations must be submitted to the MBTA for review and approval at least 30 days prior to the planned commencement of the work. Approvals or rejections shall be submitted by the MBTA within thirty (30) days following submission to the MBTA for review.

E. The owner or the contractor performing construction work over, on, under, or adjacent to Authority property shall submit to the Director of Design four (4) sets each of the design, drawings and specifications of any earth support system, shoring, underpinning, protective shielding, or any work required for the protection of the Authority's facilities and property, a minimum of forty-two (42) working days prior to the planned commencement of any of the above work. The design, drawings and specifications shall define in detail the methods of construction and materials to be used. The design and drawings shall be stamped and signed by a Professional Engineer registered in the Commonwealth of Massachusetts.

F. Unless otherwise agreed to in advance, earth support structures or shoring systems shall not be attached to any structure owned by the MBTA, nor shall MBTA structures be use to support loadings or be used for excavation support.

G. Engineering drawings of MBTA structures are available for reference or duplication at the MBTA Plan Room, 500 Arborway, Jamaica Plain, MA 02130. For information call the Technical Librarian at 617-222-5285.

## 4. OPERATIONAL RESTRICTIONS

A. The owner or contractor is made aware that the work will be performed adjacent to or over operating tracks, signal lines, communication lines, power lines, cables and other facilities belonging to the Authority. The owner or contractor is to take all due precautions to protect the Authority's facilities, utilities, and operations during the course of his work. When in the opinion of the Authority's Chief Engineer of Design and Construction, Director of Subway Operations, Director of Systemwide Maintenance & Improvements, Director of Operations Support, or their representatives, the contractor's work would cause hazard to the Authority's facilities, infrastructure, or to the safe operation of the transit system, the Authority will assign qualified personnel deemed necessary to protect the property, facilities and operations, all at the expense of the contractor.

B. The contractor is specifically prohibited from conducting any operations next to or over the right-of-way that have the potential to adversely impact the operations of Authority revenue service during normal operating hours (approximately 5:00 a.m. to 1:30 a.m.). Certain work adjacent to the right-of-way, described below as hazardous work, may take place during restricted revenue hours at the discretion of the Chief of Orange, Red, Green, or Blue Line Operations as applicable and require flagmen present.

C. Access to the MBTA right-of-way, which encompasses all MBTA property (fence to fence, wall to wall, and property line to property line over which Authority vehicles operate, including sidings and yards), is. contingent upon Owner or Contractor compliance with the "MBTA Right-of-Way Safety Rulebook" that outlines Right-of-Way Safe Practices for Access on or Near the Right-Of-Way.

As specified in the Right of Way Safety Rulebook, all persons who access the MBTA right of way must attend a one-day, eight-hour training class conducted by Subway Operations Training and the Safety Department Attendees must successfully complete the Right of Way Safety Training in order to

receive a Right of Way license. The license is valid for a two-year period after which the person must attend the Authority's Right of Way re-certification class. To register for the "Right of Way Safety" class, contact:

Supervisor and Chief Rules Examiner of Training
Cabot RTL Training
275 Dorchester Avenue, 2nd floor
South Boston, MA 02127
Telephone: (617) 222-5377

D. The Authority will consider the property; facilities and operations fouled or subject to hazard when the following occurs:

1. When any object or operation is or can be brought nearer than ten (10) feet to the centerline of operating track.
2. When an object or excavation is brought nearer than four (4) feet to a signal or communication line.
3. When an object or excavation is brought nearer than ten (10) feet to a power line or cable.
4. When explosives are used in the vicinity of the premises. Explosives shall not be used on or adjacent to the Authority's property or facilities without written consent of the Authority's Chief Engineer of Design and Construction and then shall be used only by a licensed blaster, licensed in the Commonwealth of Massachusetts, at times and under conditions acceptable to the Authority.
5. When cranes, trucks, power shovels, pile driver or any other equipment are working in positions that failure with or without load could occur nearer than 10 feet to the centerline of an operating track.

It shall be the responsibility of the contractor to inform the Chief of Orange, Red, Green, or Blue Line Operations as applicable in writing thirty (30) working days prior to all times when they intend to perform hazardous work as described above. Submittal must include a site plan, the reasons for entering the property, where the property will be entered, each individual location where work of a different nature is to be performed, the nature of such work, and number of days, including time schedule, the contractor intends to remain on the property at each location. Failure of the contractor to provide the appropriate Line Chief with the specified advanced notice of hazardous work will result in the stoppage of work by the Authority.

D. The Contractor will be allowed on the right-of-way only after normal revenue service (approximately 1:30 a.m. to 5:00 a.m.). On occasion, the Authority will operate work cars in the area of the project work during non-revenue hours. At no time during these occurrences will the contractor be allowed to work on the right-of-way except with the approval of the Authority. The contractor shall coordinate their schedule at least twenty-four (24) hours in advance with the Authority.

E. No weekday/weekend transit service interruptions will be allowed on this project. The contractor must schedule all work requiring a shutdown of revenue service and/or station and/or platform operations during non-revenue hours.

F. Prior to the contractor leaving any work site, at the completion of each workday, the contractor shall ensure that the site is in proper condition to permit normal transit operations to resume. If, in the opinion of the Authority, the site is not suitable for normal transit operations due to conditions caused by the contractor, the Authority will allocate a suitable number of personnel to rectify the site. The owner or his contractor shall be charged full costs of such personnel and necessary equipment, including the full cost of replacement services during the cleanup period.

G. In the event that the contractor does not adhere to the work period limitations of the special conditions and causes delay in returning the right-of-way to revenue service at the end of any work period, the owner or his contractor shall pay the Authority for substitute bus service a sum not to exceed $120.00 per hour per bus for the entire duration of the delay and including mobilization and demobilization of the bus service. The minimum charge shall be (3) hours per bus per delay... The owner or the 'contractor will reimburse the Authority for the hourly costs of personnel used during such delays (egg., supervisors, officials, gatepersons, flagpersons, and automotive). The required number of buses to adequately accommodate all Authority customers who are inconvenienced by the delay shall be at the sole discretion of the Authority's Bus Operations Department. Whatever sum of money may become due and payable to the Authority by the owner or his contractor under this article may be retained out of money belonging to the contractor in the hand and possession of the Authority. This article shall be construed and treated by the parties to the contract not as imposing a penalty upon the contractor for failing fully to complete the work within the periods as specified herein, but as liquidation damages to compensate the Authority for additional costs incurred by the Authority because of the failure of the contractor to fully complete said work within the work periods specified.

H. The contractor shall assume full responsibility for the safety of all their work. They shall perform the work in a manner that will ensure the safety of both personnel and property. The contractor shall prevent against safety hazards, and the exposure of persons and equipment to hazardous and/or potentially hazardous conditions. All, work in the construction of the project shall comply with the requirements of the Authority, Department of Labor, Occupational Safety and Health Administration (OSHA) provisions, as well as those of state and local regulations. Safe breathing levels must conform to the Massachusetts Department of Environmental Protection (DEP) standards. In the case of conflict of regulations, the most stringent will apply. If the standards are not met, the Authority has the right to stop the work until such time as the contractor is in compliance with standards.

## 5. PROTECTION SERVICES

A. When the contractor is performing work in the vicinity of Authority rights-of-way or public areas, the Authority will require the contractor to have at the site such authorized and qualified personnel as may be required to adequately protect the Authority's customers, employees, property, facilities and operations from hazardous conditions.

B. The need for protection services is outlined and described in the Authority's Right-of-Way Safety Rulebook. The appropriate Line Chief, or their representative, shall determine what protection services are required and assign flagging personnel, officials, supervisors, coordinators or any other such personnel as may be required to ensure the safety of the Authority's operations. Personnel shall be provided from the Authority's workforce in such numbers as the Line Chief determines.

Costs for all protection services and supplies shall be the responsibility of the owner or contractor. No work will be allowed if flagmen are required, but not on duty.

C. When it is determined that protection services are required, the contractor must notify the Authority twenty-four (24) hours in advance and before 10.00 a.m. on the workday preceding the day that protection services will be required. Requests for protection services for weekends and/or holidays, must be made on the preceding Friday before 10.00 a.m., or before 10.00 a.m. on the workday preceding the holiday.

Requests for protection services for Non-Operating hours 1.30 *a.m.—5.00* a.m. and in order for the work to be included on the Night Orders you must contact the:
Planning and Scheduling Coordinator
Maintenance of Way
617-222-5419.

Requests for protection services for Operating hours 5.00 a.m.-l.30 a.m. and in order for the work to be included on the Day Orders, you must contact:
Orange, Red, Green, or Blue Line Superintendent as applicable.
617-222-5844 (Orange); 617-222-5099(Red);
617-222-5982 (Green); 617-222-5532 (Blue).

It will be at the sole discretion of the Authority whether the contractor will be allowed to perform work on any particular day or night.

D. The contractor will be required to provide each flagperson on duty with properly functioning safety equipment as approved by the Authority's Safety Department. This equipment includes but is not limited to: orange safety cones, red, yellow, and green flags, airhoms, hardhats, safety goggles, and hearing protection. The contractor will not be allowed on or adjacent to the right-of-way if flagging personnel are not equipped with required safety personal protective equipment.

E. The contractor will supply properly functioning Authority-frequency portable radios to each flagperson on duty on a daily basis.. The contractor will be responsible for storing and maintaining radios throughout the life of the contract.

F. All workers employed by the contractor who are to work within the Authority's stations, track area, right-of-way or adjacent to the traction power system or any high voltage electrical cables, shall be required to attend a safety awareness course at the Authority's Subway Operations Training School. The course is to make the contractor's personnel aware of the particular hazards related to the Authority's operations.

G. All personnel working on the project site in the immediate vicinity of, or within the right-of-way, are required to wear orange reflective safety vests, similar to standard Authority equipment as specified in the Right-of-Way safety Rulebook.

H. Work activities necessitating the traction power system (third rail and catenary) deenergization will require the services of an Authority power lineperson on site at all times and the contractor is responsible for any. costs incurred by the Authority as. a result of this action.

I. Prior to the implementation of the contracted work, and throughout the life of the contract, the contractor will be required to supply professionally rendered signs, as directed by the Authority's Marketing Department. These signs will include, but are not limited to, the following:

1. Informational signs for revenue service diversion.
2. Station directional and stairway, platform, exit closing signs.
3. General project informational signs for Authority customers.

J. Upon the direction of the Authority's Chief Engineer of Design and Construction, Director of Safety, and or Director of Subway Operations or their representatives, the contractor will be required to supply and install partitions and wooden barricades to cordon off the work site; such partitions and barricades shall be maintained and remain graffiti free by the contractor for the duration of the project.

K. Upon direction from the Authority's Chief Engineer of Design and Construction and / or Director of Subway Operations or their representatives, the contractor will supply the following when site conditions warrant:

1. Emergency and temporary lighting.
2. Exhaust fans of sufficient size and numbers to adequately ventilate the work site, tunnel and or adjacent stations.
3. Fire and / or garden hose for the purpose of dust control.

L. It shall be the responsibility of the contractor to keep the Authority informed prior to all times when they intend to perform hazardous work. Failure of the contractor to provide the Authority with suitable advance notice of hazardous work will result in the stoppage of the work by the Authority until such time as sufficient numbers of protection personnel are on duty at the site.

## 6. ANNUAL CERTIFICATION OF HI-RAIL EQUIPMENT

A. All equipment used by the contractor on Authority property shall be inspected by the Maintenance of Way engineer and/or the MBTA Safety Department for clearance and safety standards, and shall not be used if considered unsafe. All contractor/ subcontractor equipment (including hi-rail) operators must be trained, certified, and properly licensed. Documentation of same must be readily available and provided to the Authority upon request. If the contractor equipment is involved in a derailment or near miss incident or an accident, which caused injury or exposed personnel to injury and or caused damage to Authority property, that equipment will be subject to the Impound Policy Procedure.

B. Contractor equipment to be .used on or in the vicinity of the track shall be in first class condition, so as to positively prevent any failure that would cause delay in Authority operations or damage to its property or compromise the health and safety of personnel working on the project. Equipment shall not be placed or operated within the fouling distance of track without first obtaining the permission of the Authority.

C. The contractor shall not, at any time, operate equipment or machinery over Authority's right-of-

way without the use of hi-rail gear. All equipment that the contractor proposes to operate shall 'be modified to operate over the Authority's track and special work (e.g., switches, crossover frogs third rail, and restraining rail). Qualified Authority personnel shall control the movement of all hi-rail equipment at all times while operating on the Authority right-of-way. The contractor shall supply a portable radio for each hi-rail vehicle entering the Authority's right-of-way. No hi-rail equipment will be allowed on Authority's property without a functioning portable radio tuned to an Authority frequency.

D. The contractor shall furnish hi-rail equipment capable of operating within the strict confines of the right-of-way. No Authority owned equipment is available for the contractor's use. In addition to equipment necessary to complete the work on a regular basis, the contractor shall be required to have on site sufficient standby equipment capable of: a) removing disabled equipment from the right-of way, and b) replacing disabled equipment in order to return the right-of-way to normal operating status by the end of the designated work period. As part of the pre-qualification statement, the contractor shall furnish an itemized list of all equipment to be used on the project, including:

1. Type of equipment (e.g., pickup, flatbed or dump trucks, excavator, cranes, etc.).
2. Make, model and date of manufacture.
3. Ownership.
4. Present use and date of availability.
5. Location where equipment may be inspected by Authority personnel during the prequalification period.

E. The contractor shall have proof of competency for hi-rail operators (e.g., documentation, that the operator of hi-rail equipment is certified to operate that specific piece of equipment). The Authority reserves the right to review the lesson plan and audit the training class. The hi-rail operator will be responsible for ensuring and documenting that the vehicle is safe for operation and that all required equipment is present and properly secured. This must be done on a daily basis prior to operating the equipment.

F. The contractor is required to have an Annual Certification of hi-rail equipment (separate form the Registry Inspection) signed by a competent person (e.g. Manufacturer's representative) asserting to the fact that the equipment is Original Equipment Manufacturer (OEM), that it conforms to the latest standards, was installed per the manufacturer's specification, and is functioning properly.

G. The contractor must keep a copy of the Manufacturer's Operating Manual or instructions onboard the hi-rail equipment at all times.

H. The operator shall operate the hi-rail equipment at a reasonable speed for the existing conditions, being alert for another vehicle (or any other obstruction along the right of way).
In addition, said operator must maintain a safe spacing of traveling equipment.

I. The contractor's hi-rail vehicles must be equipped with a horn (warning device), and an exhaust gas purifier.

J. All equipment when used in tunnels and or darkness must conform to the Authority's standards for

headlights and marker lights. In addition, when vehicles are operating in tandem such as rail carts; flat cars, etc., such vehicles must be equipped with a flashing/strobe light when the lead vehicle is other than the operating vehicle. Diesel powered equipment only will be allowed in the tunnel and shall be removed from the tunnel each night unless otherwise permitted by the Director of Subway Operations.

K. Contractors must comply with the Authority's Propane Gas policy.

L. Contractor's doing "hot work" must have appropriate permits and follow all applicable rules and procedures for same.

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# PROJECT UTILITY COORDINATION FORM

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# Project Utilities Coordination (PUC) Form

CONTACTS AND GENERAL UTILITY INFORMATION

10/28/2025

Revision Date:

| City/Town: | Project File #: | PUC Completed by: | Utility Pole Set: | |
|---|---|---|---|---|
| Wilmington | 608051 | Ghita.A.Ridadarajat@ | Verizon Pole Set/Reading | |
| **Route/Street:** | **Asst. Dist Const /Dist Utility Reimb. Eng** | **Mass DOT PM:** | **Scheduled Ad Date:** | **Total Poles Relocated:** |
| Rt. 38 (Main Street)(Rt. 62 to Woburn T.L.) | Brian Noel<br>Mark.Fedele@dot.state.ma.us<br>Brian.Polley@dot.state.ma.us | Eamon Kernan | 9/13/2025 | 65 |
| | Amanda.Klemm@dot.state.ma.us/781-570-1154 | (857) 368-9435 | | |

10/28/2025
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| Consultant: | Contact: | Office # | Cell # | Email |
|---|---|---|---|---|
| Municipality Consultant - Green International Affiliates, Inc. | Dennis Vertiyev<br>Cankang Wu | (978) 843-5221<br>(978) 843-5209 | | dvertiyev@greenintl.com<br>cwu@greenintl.com |

| Utility Company | Contact | Office # | Cell # | Email | Scope, Budget, Duration Submitted | | Reimbursement | | | Potential for District Initiated Early Relocation * | | Utilities On Bridge/Structure | | Utilities Underground (UG) /Aerial (OH) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Yes | No | Agreement | Non-Reimb'le | Notes | YES | NO | YES | NO | UG | OH |
| Reading Mun Light | Peter Price<br>Johnny Duong | (781) 942-6429<br>(781) 942-6427 | *<br>(781) 315-3580 | pprice@rmld.com<br>jduong@rmld.com | x | | x | | RMLD to transfer existing primary cables, secondary cables, services, guys, transformers, streetlights, and flood lights to new poles. | | x | | x | | x |
| Street Lights | Peter Price | (781) 942-6429 | | pprice@rmld.com | x | | x | | RMLD to R&R street light and flood lights on force account | | x | | x | | x |
| Street Lights Woburn | Jay Duran | (781) 897-5980 | | jduran@cityofwoburn.com | | | | x | Town cobra head R&R - Contract item or Town of Woburn. | | x | | x | | x |
| Eversource | Ned Sadowski<br>Ray Melvin | | (413) 537-6594<br>* | ned.sadowski@eversource.com<br>raymond.melvin@eversource.com | | x | | x | One Eversource Pole 38-95 is in Woburn. Eversource has pole set<br>No Force Account | x | | | x | | x |
| Wilmington Fire Alarm | John Brown<br>William Cavanaugh | *<br>(978) 658-3346 | | Wcavanaugh@wilmingtonma.gov | | | | Contract Item | Contractor to remove inactive OHW and Splice Boxes before First Light | x | | | x | | x |
| Wilmington ITS Comm Wires | John O'Neil (IT Director)<br>Mike Masotta<br>Paul Alunni (Town Eng)<br>Bryan Hopkins | (781) 932-4583<br>(781) 932-4583<br>(978) 658-4499<br>(781) 890-5070 x6952 | (617) 686-6111 | joneil@wilmingtonma.gov<br>ffmike972457@gmail.com<br>palunni@wilmingtonma.gov<br>bhopkins@comm-tract.com | x | | x | | Contractor to make a transfers from Church St to Butters Row | | x | | x | | x |
| First Light | Heather Araujo<br>Donny Pelletier | (207) 432-2045<br>x | (978) 302-9334<br>x | Firstlight_MA@firstlight.net<br>haraujo@firstlight.net<br>dpelletier@firstlight.net | x | | x | | Firstlight to transfer wire from Butters Row to the limit of the work | | x | | x | | x |
| MCI - VzBs<br>FKA Raytheon | Stephen Parretti<br>Douglas Flynn<br>Kevin Michaud<br>Jesse Duane | (508) 248-1305<br>(978) 436-8554<br>(617) 828-6585<br>* | (508) 892-3381<br>(781) 603-5812<br>*<br>* | stephen.parretti@verizon.com<br>flynn@rtx.com<br>KMichaud@MassElec.com<br>jduane@masselec.com | x | | x | | MCI Vz - Create Splice on Pole near Church St and Rte 38 Overlash a 288F on Rte 38 to UP near Breed Ave | | x | | x | | x |
| AT&T | Erica Hudson<br>James Araujo | (781) 221-8400 x7041<br>(781) 221-8400 x7042 | *<br>(781) 460-1236 | erica.hudson@sienaengineeringgroup.com<br>James.Araujo@sienaengineeringgroup.com | | | | x | On RR ROW possible impact - AT&T has leased fiber in Aerial Cable owned maintained by Comcast - transfers will be made by Comcast | | x | | x | x | x |
| Comcast | Wendy Brown<br>Gregory Joseph<br>James Fitzpatrick<br>Helena Busa | (978) 848-5163<br>(617) 981-0391<br>x<br>(978) 848-5116 | (978) 399-5871<br>*<br>*<br>* | Wendy_Brown@comcast.com<br>Gregory_Joseph@comcast.com<br>James_Fitzpatrick@comcast.com<br>helena_busa@comcast.com | x | | x | | Comcast will transfer their wire along the project | | x | | x | | x |
| Verizon | Paul Diamantopoulos<br>Stacey Manseau | (978) 382-2855<br>(978) 339-5812 | (508) 245-5522<br>(978) 501-3967 | Paul.E.Diamantopoulos@verizon.com<br>smanseau@pike.com | x | | x | | Vz will set the Pole and UG services and they will set Cable into MBTA bungalow. | | x | x | | x | x |
| NGrid Gas | Melissa Owens<br>Deepa Gangadhar | (781) 907-2845<br>* | (617) 592-7850<br>(781) 249-4505 | melissa.owens@nationalgrid.com<br>Deepa.Gangadhar@nationalgrid.com | x | | x | | Gas relocation is needed at different station. 6 WO# | | x | x | | x | |
| Tennessee Gas | David Wood | (860) 763-6005 | (413) 530-7117 | KMEncroachmentsNorth@kindermorgan.com | | | | x | HP gas crossing STA. xxxx Need test pits due to draiage and full depth. See extra notes | | x | | x | x | |
| ***MBTA/Keolis/CSX*** | | | | | | | | | | | | | | | |
| MBTA<br>D&C | Christine Bresnahan<br>Terrence McCarthy | (617) 222-3361<br>(617) 222-4166 | (617) 455-7087<br>(617) 913-9638 | cbresnahan@mbta.com<br>tpmccarthy@mbta.com | | | | | Facilities affected Contract Allowance accont, Flagging and fouling track req for roadway widening and OHW relocations. | | | | | | |

A00808 - 3

Proposal No. 608051 - 132406

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MBTA Bus Stop and Shelter | Michael Seegers<br>Nicholas Tomkavage | | | MSeegers@MBTA.com<br>ntomkavage@MBTA.com | | | | | | | | | | | | | |
| MBTA - RR Ops | Brian E. Mellen<br>Robert Proulx | (617) 620-9693<br>(617) 593-1851 | | bmellen@MBTA.com<br>rproulx@mbta.com | | | | | MBTA Bus stop and the end of the job. | | | | | | | | |
| Keolis Track & Wires | Chris Bruno<br>Bill Wallace<br>Steve Merrill<br>Mario Pinto | (617) 222-8445 | (617) 293-9360 | christopher.bruno@keoliscs.com<br>william.wallace@keoliscs.com<br>steve.merrill@keoliscs.com<br>mario.pinto@keoliscs.com | | | | | Coordiante for Powere outage, Gas meter, and Lightin at Platform | | | | | | | | |
| PTC Cable | Lee Remi<br>Jaime Garmendia | (617) 519-9122 | | lremi@mbta.com<br>jgarmendia@mbta.com | | | | | PTC cable offthe Rail on the East side | | | | | | | | |
| Keolis Flagmen | James Welch | (617) 222-8428 | (617) 438-2899 | james.welch@keoliscs.com | | | | | Flag Men | | | | | | | | |
| MBTA RR OPS | Rich Arnold | (617) 222-3635 | (617) 594-0120 | rarnold@mbta.com | | | | | To schedule outae | | | | | | | | |
| MBTA RR OPS | Cory Lynch | (617) 222-1776 | (617) 388-4338 | cnlynch@mbta.com | | | | | To schedule outae | | | | | | | | |
| Keolis Estimator | Swarna Arza | | | Swarna.Arza@keoliscs.com | | | | | | | | | | | | | |
| MBTA Realty | Liam Breen | | | liam.breen@greyco.com | | | | | | | | | | | | | |
| CSX | Mike Sliper | | (518) 767-6081 | michael_sliper@csx.com | | | | | | | | | | | | | |
| ***For Information Only*** | | | | | | | | | | | | | | | | | |
| Woburn Fire Alarm | Andrew Simmons | (781) 897-1380 | | Asimonds@woburnfd.com | | | | | | | | | | | | | |
| Wilmington Water | Jamie Magaldi | (978) 658-4481 | | jmagaldi@wilmingtonma.gov | | | | | Prop 12" DI Water Main to Eames St (& over the Prop. Rte 38 Bridge) | | | | | | | | |
| Wilmington Town Engineer | Paul Alunni | (978) 658-4499 | | Palunni@wilmingtonma.gov | | | | | Lead for all Wilmington isues | | | | | | | | |
| DPW Director | Jamie Magaldi | (978) 658-4481 | | jmagaldi@wilmingtonma.gov | | | | | | | | | | | | | |
| Woburn City Engineer | Jay Corey | (781) 897-5882 | | jcorey@cityofwoburn.com | | | | | | | | | | | | | |
| Woburn DPW (Sewer & Water) | Jay Duran | (781) 897-5980 | | jduran@cityofwoburn.com | | | | | | | | | | | | | |
| TranSystems | Brian J. Gargan | (857) 453-5516 | | bjgargan@transystems.com | | | | | Lead DE for Rte 38 over MBTA | | | | | | | | |
| Boston Edison/NG Transmission lines | Casey Silva<br>Steven Towle | | (617) 429-7797 | Casey.Silva@nationalgrid.com<br>steven.towle@nationalgrid.com | | | | x | OHW - No Conflict. Review Blasting<br>2024 5 16 review station 308+50 | | | | | | | | |
| ***No Facilities*** | | | | | | | | | | | | | | | | | |
| Woburn Fire Alarm | Andrew Simmons | (781) 897-1380 | | Asimonds@woburnfd.com | | | | | 2024/7/9 NO FIRE ALARM on pole 138-95. | | | | | | | | |
| Crown Castle/ Lightower | Mark Bonanno<br>Mark Vegnani | (508) 616-7818<br>(508) 208-9117 | (617) 828-1415<br>x | mark.bonanno@crowncastle.com<br>Mark.Vegnani@crowncastle.com | | | | | 2018 09 06 No facilities | | | | | | | | |
| MWRA Wastewater | Kevin McKenna | (617) 305-5956 | | kevin.mckenna@mwra.com | | | | | 2017 12 27 No facilities | | | | | | | | |

**Utility Relocation Notes for MassDOT Contractor**

Unless otherwise noted by Contract, the MassDOT Contractor is to provide the District Construction Office with 7 Calendar Days advance notification in order to validate the current progress and provide the required 30 Days advance notice-to-proceed for the first Utility - and each subsequent Utility. These advance notifications are to be identified in the Contractor's Schedules (Pre-Con preparation, Baseline, Subnets, and Updated/Monthly Schedules) as specified in Subsection 8.02 (for DBB Contracts) and/or Section 9 (of DB Contracts). Note: The durations included below do not include these lead-times. See Additional 'Important Basis notes for Contractor' - on last PUC Form page.

Additional notes:

Wilmington Detectable Warning Panel Std Color is Yellow
KCI SUE, MBTA access permit #17342
Invite Tennessee Gas Pipleline David Wood to the Precon. Provide a Curb Cut and Driveway Entrance to the Tenn Gas Property Request Gratis Inspeciting for work at HP Gas Main Crossin
Confirm with NGrid Gas winter shut down requirments - NOTE Some work next to critical gas main not allowed during winter months.
Contractor has to call in for a service connection to relocate for private propoerties in order to not delay overheard utilities to transfer

**Suggested Sequence of Relocation (Based on Consultant proposed construction staging)**

*The sequence as detailed on the following pages is based on the consultants proposed staging plan. This information was compiled through meetings that included all of the utilities listed below along with the designer and the **Wilmington & Woburn** . The information provided is the best available information prior to project advertisement.*

| Is 'enabling' (prep) work, by the Contractor, necessary prior to the start of the first series of utility relocations: | Yes | No |
|---|---|---|
| | x | |

608051 Wilmington: Rt. 38 (Main Street)(Rt. 62 to Woburn T.L.)

| Has any of the Utility work been identified to work concurrently | Yes | No |
|---|---|---|
| | x | |

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massDOT Massachusetts Department of Transportation Highway Division

| | RESPONSIBLE PARTY | | DESCRIPTION - Utility Relocation Phases, Tasks and Activities | Estimated Duration (Work Days) by Utilities (Lead time not included) | Concurrent / Exclusive Utility Work | | | | Access Restraint & Limitations of Operations Notes | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Contractor note: In planning and executing the work, the Access Restraints listed in the Special Provisions, takes precedence over the checklist in these 4 columns. | | | | Should an AR be considered for the Contractor ? | |
| | C = Contrac | U = Utility | | | Exclusive Utility on site: Utility working with no other Utilities in | Concurrent Utilities: Utility working with other Utilities on site | Contractor Off-Site: No Contractor physical construction operations on site (while Utility is working) | Contractor Concurrent: Contractor and Utility are working on-site - but NOT in the same vicinity | Potential Access Restraint (Yes/No) | Reason/Note (optional) |
| Stage 1 Pre Phase A | | | Enabling' work by the Contractor generally the contactor will want to go first with water and drainage, but utilities (gas and tel, etc.) may be in conflict with proposed work and Contractor must schedule those utilities in sequence. Call in dig safe. Contractor shall perform early test pits to determine invert grades of proposed water, DMH, RCP drainage, headwalls, culverts, bridges, electric services, gas main relays, tel and electric underground work. Contractor will set the schedule and allow utilities into the lane closure to expedite the work. Utility Force Account durations are based full access to site and one mobilization. Provide gas and other utilities a proposed path so that no relays are required. Contractor shall coordinate utility crews into traffic controls and lane closures and coordinate for temp/perm HMA trench work and share police details where possible. | | | | | | | |
| | | | **UTILITY OPERATIONS - Water/Drainage/Signal/Telephone/Gas Relocation** | | | | | | | |
| Task: a1 | | | ***Utility Co. Contractor = Test Pits*** | | | | | | | |
| | | U | Water, Drainage, Electrical Services, Traffic Signal, RRFB | | | x | | x | | |
| | | U | NGrid Gas - As directed | | | x | | x | | |
| | | U | Verizon Tel As Directed | | | x | | x | | |
| | | | **Sub-Total** | 0 | | | | | | |
| Stage: 1 Phase : B | | | Enabling' work by the Contractor - No gas work in winter - Coordinate with MBTA and NGrid Gas for winter shutdown - The contractor shall be responsible for coordinating with NGrid Gas to allow gas company into lane closures and into areas prior to placement of subbase and base courses. Contractor shall perform early test pits to determine invert grades of proposed drainage and other proposed items of work, and direct gas to go in a location under proposed drainage and in other locations such that later proposed work shown on these plans does not encroach (undermine) new NGrid gas lines. Engineer and Contractor shall work together to mark out areas that are temporary patches and permanent patches. | | | | | | | |
| | | | **UTILITY OPERATIONS - Gas Main Conflicts** | | | | | | | |
| Task: 1 | | | ***Utility Co. NGrid Gas Service Meter R&R NG WO# 1628742 @ MBTA (Contract Item 998.104 Specialty Service#4) Sta 212+10 Rt.*** | | | | | | | |
| | C | U | Submits an application for MBTA Access License - Consider this process may take well over 120 work day (6-9 months) | | | x | | x | | DUCE EST |
| | C | | Installs concrete pad and bollards | | | x | | x | | |
| | C | | Lay out prop. finish grade stakes for prop gas service. Min. 3' min cover. | | | x | | x | | |
| | | U | Excavate and shore, cut in new tee and install line and new meter, temp patch in roadway 487 Main Street. | 4 | | x | | x | | |
| | C | | Excavates trench, install bedding, pipe, 4 service gates, fittings/manifold, couplings, pressure tests, sand backfill, ballast surface treatment on RR side of meter | 4 | | x | x | | | |
| | | K | ***Keolis*** Inspects and/or preforms all splices. | | | x | | x | | |
| | | U | Cut, plug, purge old service tee | 1 | | x | x | | | DUCE Est |
| | C | | Pays all Keolis's bills through 3rd party agreement, reimbursed through Contract Allowance Item 999.860 | | | x | | x | | |
| | C | | Pays all Keolis flagmen bills through 3rd party agreement, reimbursed through Contract Allowance Item 999.200 | | | x | | x | | |
| | C | | Full depth roadway repairs to gas trench - Contract Items | | | x | x | | | |
| | | | **Sub-Total** | 9 | | | | | | |
| Task: 2&3 | | | ***Utility Co. NGrid Gas - Sta 217+50 - Culvert Dublin Ave- NGrid (task#2, and #3) WO#1628682/WO#1629680*** | | | | | | | |
| | | | Three stages - in dry months Sept. | | | x | x | | | |
| | | U | National Grid to provide 40ft - 16" Casing pipe w/two elbows for the contractor to install | 1 | | | | x | | DUCE ESTIMATE* |
| | | U | Stage 1 - Cut and cap 40' of 12" 60psig in advance of culvert work WO#1628682 | 5 | | x | x | | | |
| | C | | Contractor demos culvert - Over Excavates Class A - Trench for NG casing pipe, Sand Bedding and Backfill per NGrid Directions | | | x | x | | | |
| | C | U | Contractor installs 16" sleeve for gas main with 12" Inner carrier pipe provided by NGrid - 3' below culvert grade. NGrid inspects and will remob for final stage. | 1 | | x | x | | | DUCE ESTIMATE* |
| | C | | Contractor Installs culvert over NG casing pipe and completes culvert. | | | x | x | | | |
| | | U | NGrid returns and completes reconnection 0f 12" Plastic on each side WO#1629680 | 5 | | x | x | | | |
| | | | **Sub-Total** | 12 | | | | | | |
| Task: 4 | | | ***Utility Co. NGrid Gas - Sta 236 - 239+50 4" Gas - onto Sidewalk WO# 1628759*** | | | | | | | |
| | C | | Coordinate to have utility poles relocated, and removal of drainage structures | | x | | x | | | **DUCE ESTIMATE*** |
| | C | | Move guard rail and 2 UP (BO) | | x | | x | | | **DUCE ESTIMATE*** |
| | C | | Remove all loam and seed and bring prop SW area to subgrade or gravel grade | | x | | | x | | **DUCE ESTIMATE*** |
| | | U | NGrid Gas places 300' - 4" CS 60# - replaces and grades to gravel only. | 20 | x | | x | | | |
| | | | **Sub-Total** | 20 | | | | | | |
| Task: 5 | | | ***Utility Co. NGrid Gas - Sta 253-254 4" Gas - 150 Maple Meadow Brook Bridge & CB WO1628758*** | | | | | | | |
| | C | | Contractor installs temp ped bridge | | | x | | x | | |
| | C | | Perform test pits - SUE QLA | | | x | | x | | |
| | C | | UP moves, Verizon moves UPL 12-64 (6' sidewalk guy) UPL 63 (2-7' Swamp Anchors) | | x | | x | | | |
| | | U | NGrid to cut and cap the 4" at the bridge, and abandons line over the bridge | 1 | x | | x | | | DUCE Estimate |
| | C | | Contractor R&D abandoned gas in his way and may demo east side of bridge. Reconstructs east side of bridge and install bracket for gas main. | | x | | x | | | |
| | C | U | NGrid to provide rollers to contractor, Contractor Mag Drills holes for roller bearings and installs Rollers | 1 | x | | x | | | DUCE Estimate |
| | | U | NGrid Gas installs 50' of 4" 60psig CS gas into brackets plates backfills with sand/gravel only | 8 | x | | x | | | |
| | | | **Sub-Total** | 10 | | | | | | |
| Task: 6 | | | ***Utility Co. NGrid Gas - Sta 291+50 to 293 150' - 4" Gas - 2 CB conflict WO#1629391*** | | | | | | | |
| | C | | Contractor Performs test pits and directs gas to line and grade to be below prop. drainage. | | x | | x | | | |

| | RESPONSIBLE PARTY | | DESCRIPTION - Utility Relocation Phases, Tasks and Activities | Estimated Duration (Work Days) by Utilities (Lead time not included) | Concurrent / Exclusive Utility Work<br>Contractor note: In planning and executing the work, the Access Restraints listed in the Special Provisions, takes precedence over the checklist in these 4 columns. | | | | Access Restraint & Limitations of Operations Notes<br>Should an AR be considered for the Contractor ? | |
|---|---|---|---|---|---|---|---|---|---|---|
| | C = Contrac | U = Utility | | | Exclusive Utility on site<br>Utility working with no other Utilities in | Concurrent Utilities<br>Utility working with other Utilities on site | Contractor Off-Site<br>No Contractor physical construction operations on-site (while Utility is working) | Contractor Concurrent<br>Contractor and Utility are working on-site - but NOT in the same vicinity | Potential Access Restraint (Yes/No) | Reason/Note (optional) |
| | | u | Excavate, shore, cut in new tees and install 150' - 4" CS, 60 psig and new service connection & stop/tap/purge/cut/cap. | 14 | x | | x | | | |
| | c | | Contractor may install prop guardrail at this location | | x | | | x | | |
| | | | **Sub-Total** | **14** | | | | | | |
| | | | **All Gas Work Total** | **65** | | | | | | |
| Stage : 2 Phase : A | | | Enabling' work by the Contractor -contractor is responsible to coordinate with utility companies and set up a work plan. UP may be asked to work out of sequence for the Maple Medow Brook Bridge. Contractor provides utility schedule to massDOT. Contractor is responsible to coordinate tree trimming and a field meeting with DURE to walk all the poles and make sure that poles are staked and Dig safed. There are considerable ug conflicts with Prop. Bridge/Culvert and Drainage. NOTE some drainage may have to be installed in a temporary manner until Verizon and Gas mains are relocated. There are major Copper and Fiberoptic telephone trunklines running the length of the project and setting new Poles and pulling cable and splicing over to new duct is dependent on the Contractor installing conduit, and other Power and Comm Companies working in advance of the Telephone. Contractor to walk job with Verizon and verify who installs the new ug conduit at all Risers, and at all TMHs. | | | | | | | |
| | | | **UTILITY OPERATIONS - OHW and Utility Pole Replacements** | | | | | | | |
| Task: 7 | | | ***Utility Co. Verizon*** | | | | | | | |
| | | **U** | VZ Line to place poles and anchors | 145 | | x | | x | | |
| | **C** | | Install Conduit and New Service connection. | 37 | | | | | | DUCE Est |
| | | | **Sub-Total** | **182** | | | | | | |
| Task: 8 | | | ***Utility Co. RMLD*** | | | | | | | |
| | | u | RMLD will also R&R Flood Lights and Street Lights - | 5 | x | | | | | DUCE ESTIMATE |
| | | | The Contractor is required to get a WO# for all Private Underground Service Relocations for Power Disconnect/Reconnects. Do this 120 Days in advance to reduce risk of delays Also call in the WO# for the New Signals, RRFBs so that work can be done at the same time. | | | x | | | | |
| | | **U** | RMLD to perform engineering load analysis, design and construction drawings for each pole **(15 days not field work in schedule)** | 15 | | x | | x | | |
| | c | | UP 5 Underground Service Connection (Verizon) Requires Contractor to Get a WO# for a Disconnect /Reconnect(120 Days) | | | x | | x | | |
| | | **U** | RMLD to transfer pole 6A/7A/8A/9A/10A Main St | 3 | x | | | x | | |
| | | **U** | RMLD to transfer pole 29/ 30/31/36/38A/43/44 Main St | 8 | x | | | x | | |
| | | **U** | RMLD to install guys at new pole 29S Eames St & 29S Main St | 1 | x | | | x | | |
| | c | | UP 31 Spare UG Service Connection - Extend Conduit to new pole (Consider if this riser was Abandoned) | | | | | | | |
| | c | | UP 12-38A UG Service Conn (RMLD Primary, Comcast, Verizon) Requires Contractor to Get a WO# for a Disconnect /Reconnect | | | x | | | | |
| | c | | UP 43 Underground Service Connection (Fire Alarm) R&D all wire and Riser. | | | x | | x | | |
| | | **U** | RMLD to transfer pole 45 /46/47/48/59/60/61/62Main St | 9 | x | | | x | | |
| | | **U** | UP 46 Underground Service Connection 2 Vz empty (R&R-BO) | | | | | | | |
| | c | | UP 59 Underground Service Connection (RMLD Primary & Verizon) Utilities to do all work. Prop 2-5" Conduit. | | | | | x | | |
| | c | | UP 61 Underground Service Connection (Unknown) Coordinate in advance to abandoned. | | | | | x | | |
| | | **U** | RMLD to transfer pole 63/64/65/66/67/68/69/70 Main St Meadow Bridge | 6 | x | | | | | |
| | | **U** | RMLD to transfer pole 71/72/76/77/78/79/80/85 Main St | 10.5 | x | | | | | |
| | c | | UP 73 Riser R&R BO - Vz | | | x | | | | |
| | c | | UP 84 Verizon Riser BO-Vz - No Contractor Work | | | x | | | | |
| | | **U** | RMLD to transfer pole 86/87/88/89/90-1/93-1/93/ 94-1 Main St | 11.5 | x | | | | | |
| | | **U** | UP 12-90 CUT and Kick Vz may need help from RMLD - Vz does ug | | | x | | | | |
| | c | **U** | UP 12-90-1 CUT and Kick (if UG Service Conn to MBTA is impacted - Contractor must get a WO# also need a MBTA Access license - 6 Months notice) | | | x | | | | |
| | | **U** | RMLD to transfer pole 94/95-1/95/96/97/98-1/98/99 Main St culvert 211+70 -217+80 | 8 | x | | | | | |
| | | **U** | RMLD to transfer pole 94A This Service pole and feeder for power Billboard is in conflict w/Prop Culvert. Coordinate with Billboard Owner for outage during culvert Installation Station 218+00 Rt. Consider temp Relocation of Pole. (This is force account work however extended outage or Temp pole for the purpose of Culvert installation must be coordinated in advance) | | x | | | | | |
| | c | | UP 98X Sta 213+00 Rt UG Service Conn (RMLD) for MBTA. Contractor to Get a WO# also need a MBTA Access license - (120 days) RMLD Install Pole and Contractor Replaces the Electrical Panel, Posts, Conduit, riser and Wire. Any work by Keolis such as splicing, or Generators, charged to contractor by 3rd Party Agreement is to be reimbursed by MassDOT under Contract Item 998.105, or 999.860 Specialty Services, or 999.200 RR Flagmen. | | | x | | | | |
| | c | | UP 99 Sta 211+70 Lt. Call in Underground Service Connection (RMLD Secondary) disconnect /Reconnect (120 Days) for the Smoke shop sign. Contractor install new ug conduit and riser for Sign lights. Cont. Item 998.102. | | x | | | | | |
| | | **U** | RMLD to transfer pole 100/101-1/101/102-1/102/103-1 Main St | 5.5 | x | | | | | |
| | c | **U** | UP 102 UG Service Connection (Comcast, Verizon, and RMLD Secondary) Special Item 998.101 Requires Contractor to Get a WO# for a Disconnect /Reconnect (120 Days) Contractor performs all conduit, riser, and electrical work to the top of the Pole. Contractor also installs conduit and sweeps for Comcast and Verizon. Contract Items Pays for all work, not covered by Force Account | 1 | x | | | *DUCE Estimate | | |
| | c | | R&R Service to Traffic Signal (TYPICAL) | | | x | | | | |
| | c | | R&D all fire alarm except as specified in special provision. | | x | | | | | |
| | | | **Sub-Total** | **83.5** | | | | | | |
| Task: 9 | | | ***Utility Co. Eversource On only one Pole at the Woburn Town Line at Breed Street - Requests no Reimbursement*** | | | | | | | |
| | | u | Set Pole 138-95 and transfers all OHW and secondaries and remove old pole | 5 | x | * | | | | |
| | c | | R&R one Street Light in Woburn on Eversource Pole | 5 | x | | | | | DUCE ESTIMATE |
| | | | **Sub-Total** | **5** | | | | | | This concurrent with RMLP |
| Task: 10 | | | ***Utility Co. Comm-Tract Wilmington ITS Fiber optic*** (Church Street) | | | | | | | |
| | | u | Set new Fiber Optic Cable on Main ST, Cross ST, and Butters Row | 2 | x | | | | | |
| | | u | Transfer existing fiber cable | 2 | x | | | | | |
| | | u | Splicing /Cutover old Fiber cable to the newly Placed Fiber Optic Cables | 1 | x | | | | | |
| | | | **Sub-Total** | **5** | | | | | | |
| Task: 11 | | | ***Utility Co. First Light (Butters Row to Eames Street)*** | | | | | | | |
| | | **U** | Run new strand | 2 | x | | | | | |
| | | **u** | Delash cable and move slack | 2 | x | | | | | |
| | | **u** | Relash cable to new strand | 1 | x | | | | | |
| | | **u** | Remaining transfers and cleanup work | 1 | x | | | | | |

| | RESPONSIBLE PARTY | | DESCRIPTION - Utility Relocation Phases, Tasks and Activities | Estimated Duration (Work Days) by Utilities (Lead time not included) | Concurrent / Exclusive Utility Work<br>Contractor note: In planning and executing the work, the Access Restraints listed in the Special Provisions, takes precedence over the checklist in these 4 columns. | | | | Access Restraint & Limitations of Operations Notes<br>Should an AR be considered for the Contractor ? | |
|---|---|---|---|---|---|---|---|---|---|---|
| | C = Contrac | U = Utility | | | Exclusive Utility on site | Concurrent Utilities | Contractor Off-Site | Contractor Concurrent | | |
| | | | | | Utility working with no other Utilities in | Utility working with other Utilities on site | No Contractor physical construction operations on-site (while Utility is working) | Contractor and Utility are working on-site - but NOT in the same vicinity | Potential Access Restraint (Yes/No) | Reason/Note (optional) |
| | | | **Sub-Total** | **6** | | | | | | |
| Task: 12 | | | ***Utility Co. MCI - Raytheon*** | | | | | | | |
| | | u | Engineering and permitting for RTE 38 | 15 | | x | | | | |
| | | u | Install new 288f cable and slack loops on poles | 13 | x | | | | | |
| | | u | Splice new fiber into existing splice points | 2 | x | | | | | |
| | | u | Remove existing fiber | 10 | x | | | | | |
| | | | **Sub-Total** | **40** | | | | | | |
| Task: 13 | | | ***Utility Co. Comcast*** | | | | | | | |
| | | U | Coax Scope- Once new poles have ben set and others above comcast have moved- relocate/ run new strand / swing fiber as needed due to road reconstruction. Approximately 66 poles being relocated within the limits of project. | 60 | x | | | | | |
| | | U | Fiber Scope: Install new 288F from point to point. Estimate 11,000' of fiber. Overnight cutover. | 60 | x | | | | | |
| | | | **Sub-Total** | **120** | | | | | | |
| Task: 14 | | | ***Utility Co. Verizon*** | | | | | | | |
| | | U | VZ Contractor to coordinate MH tie ins with MDOT Contractor | 35 | | x | | | | |
| | | U | VZ Contractor to relocate conduit risers to new pole locations | 19 | x | | | | | |
| | | U | VZ Line to rod and rope conduits | 40 | x | | | | | |
| | | U | VZ Line to place strand and guying | 20 | x | | | | | |
| | | U | VZ Line to place cables | 106 | x | | | | | |
| | | U | VZ splice to cutover cables and terminals | 201 | x | | | | | |
| | | U | VZ line to transfer cables | 35 | x | | | | | |
| | | U | VZ Line to remove cables | 86 | x | | | | | |
| | | U | VZ Line to remove poles and guying | 88 | x | | | | | |
| | | | **Sub-Total** | **630** | | | | | | |
| Task: 15 | | | ***Utility Co. Eversource On only one Pole at the Woburn Town Line at Breed Street - Requests no Reimbursement*** | | | | | | | |
| | | | Eversource to remove one Pole after the all utilities has transferred | 1 | | | | | | |
| | | | **Sub-Total** | **1** | | | | | | |
| | | | **OH Wire and UP relocations Sub-Total** | **1072.5** | | | | | | |
| Stage 3: Phase A | | | Enabling' work by the Contractor -12" water main and 8" in. Contractor to support gas main at station 205+80 and protect and support hydrant until 8" is active. Ensure town standards are met and shut downs are coordinated with surrounding homes/ businesses. Coordinate with the town to find newly installed water and ensure it is not damaged with proposed construction. | | | | | | | |
| | | | **UTILITY OPERATIONS -** | | | | | | | |
| Task: 16 | | | ***Utility Co. WATER at Main St*** | | | | | | | |
| | C | | Set up bypass or outage | | x | | | | | |
| | C | | Contractor to install thrust block coupling and 12", 10", 6" & 8" gate valves | | x | | | | | |
| | C | | Contractor to install 12" water main and connect to the existing 12" at station 205+50 | | x | | | | | |
| | C | | Place new hydrant and adj water gates as necessary | | | x | | | | |
| | C | | Contractor to cut and plug old water main | | | x | | | | |
| | C | | Install new 8" and connect it to the new 12" water main | | x | | | | | |
| | | | **Sub-Total** | **0** | | | | | | |
| Stage 4: Phase A | | | Enabling' work by the Contractor - Any shutdown work beyond 40 deg F (4/15 – 11/1) would require bypasses if the proposed timelines go beyond the expected Summer 2027 construction window. | | | | | | | |
| | | | **UTILITY OPERATIONS - Utility Work at Maple Medow Brook Bridge** | | | | | | | |
| Task:17 | | | ***Utility Co.*** | | | | | | | |
| | | | Stage 1 Demo East Side | | x | | | | | |
| | c | | Verizon UG - Contract Item to install conduit for Verizon | | x | | | | | |
| | | u | Verizon pulls cables and splices old Copper from 2x2 into 12 Duct bank spares | 120 | x | | | | | *DUCE EST |
| | | u | Utility Vz OHW and 2 Poles - These Poles should be assumed to move when the other poles are moved | | x | | | | | *DUCE EST |
| | | u | Verizon set 2 Poles | 120 | x | | | | | *DUCE EST |
| | | u | RMLD - R&R power lines required for clearance | 5 | x | | | | | *DUCE EST |
| | | u | Wilmington Fiber | 10 | X | | | | | *DUCE EST |
| | | u | First Light | 10 | X | | | | | *DUCE EST |
| | | u | MCI Vz Bs/Raytheon | 10 | X | | | | | *DUCE EST |
| | | u | Comcast/AT&T | 10 | x | | | | | *DUCE EST |
| | | u | Verizon relocates wires, Guys, and Remove old Poles | 10 | x | | | | | *DUCE EST |
| | c | | Contractor install Temp Utility Bridge | | | x | | | | *DUCE EST |
| | | u | NGrid Gas cuts and caps line on old Bridge and abandons old 4" | 5 | x | | | | | *DUCE EST |
| | | u | Contractor R&D abandoned gas and Telephone and Demos Bridge | | x | | | | | |
| | c | | Stage 1 Construction East Side CONTRACT Builds New EAST SIDE | | | | | | | |
| | c | | Contractor Provides Approved Shop Drawing months in advance and install Brackets and holes NG provided roller bearings | 0 | | x | | | | |
| | | u | Cuts over 4" onto New Bridge | 10 | x | | | | | |
| | | | Verizon | | | | | | | |
| | c | | Contractor installs 1x12 - 4" Conduits | | x | | | | | |
| | | u | Verizon Pulls cable and Splices over - Abandons the old 12 duct bank on West side of Bridge | 120 | x | | | | | |
| | c | | Contractor Paves East Bridge and Put traffic on East Side | | x | | | | | |
| | | | Stage 2 Demo West Side | | | | | | | |
| | | | Water | | | | | | | |
| | c | | Contractor Provide a Temp Water Bypass on Temp Bridge w/insulation | | x | | | | | |
| | | | Stage 2 Construction West Side | | | | | | | |
| | c | | Installs Brackets for water main and Cuts over Water to final Location | | x | | | | | |
| | | | **Sub-Total** | **430** | | | | | | |
| | | | **UTILITY OPERATIONS - Utility Work at 3x4 Culvert at Sta 217+80 Dublin Avenue** | | | | | | | |
| Task:18 | | | ***Utility Co.*** | | | | | | | |
| | c | | Stage 1 Construction West Side Contractor Sets up Traffic Signal For two way operation. | | | | | | | |
| | c | | Contractor sets up Signal and Signage and Detours Plans - 4 months | | | x | | | | |
| | c | | Contractor get MBTA Access License - 6 Months | | | x | | | | |

| RESPONSIBLE PARTY | | DESCRIPTION - Utility Relocation Phases, Tasks and Activities | Estimated Duration (Work Days) by Utilities (Lead time not included) | Concurrent / Exclusive Utility Work<br>Contractor note: In planning and executing the work, the Access Restraints listed in the Special Provisions, takes precedence over the checklist in these 4 columns. | | | | Access Restraint & Limitations of Operations Notes<br>Should an AR be considered for the Contractor ? | |
|---|---|---|---|---|---|---|---|---|---|
| C = Contrac | U = Utility | | | Exclusive Utility on site | Concurrent Utilities | Contractor Off-Site | Contractor Concurrent | Potential Access Restraint (Yes/No) | Reason/Note (optional) |
| | | | | Utility working with no other Utilities in | Utility working with other Utilities on site | No Contractor physical construction operations on-site (while Utility is working) | Contractor and Utility are working on-site - but NOT in the same vicinity | | |
| | | Contractor Installs 12-4" Vz Duct Bank(not too deep)- consider Rebar in Duct or Do not encase until after the Culvert is placed | | x | | | | | |
| | u | Utility Vz OHW and 2 Poles 94 & 94A(Review if 94 A is required or if it can not be placed until Later) | | x | | | | | |
| | u | Verizon set 2 Poles | 5 | x | | | | | *DUCE EST |
| | u | RMLD - R&R power lines required for clearance | 5 | x | | | | | *DUCE EST |
| | u | Wilmington Fiber | 10 | x | | | | | *DUCE EST |
| | u | First Light | 10 | x | | | | | *DUCE EST |
| | u | MCI Vz Bs/Raytheon | 10 | x | | | | | *DUCE EST |
| | u | Comcast/AT&T | 10 | x | | | | | *DUCE EST |
| | u | Verizon relocates wires, Guys, and Remove old Poles | 10 | x | | | | | *DUCE EST |
| | u | Verizon pulls cables and splices into 12 Duct bank Spares | 120 | | | | | | *DUCE EST |
| | u | NGrid Gas - Cut and Cap the 12" line 25'+/- Back from Culvert for a Temporary Shutdown - Not in Winter | | | | | | | *DUCE EST |
| c | | Water Main Casing Pipe - | | | | | | | |
| c | | SOE, Remove old CB and Abandoned Vz TMH | | x | | | | | |
| c | | Set up Barrier and Single lane Traffic and Excavate Culvert - Low Flow | | x | | | | | |
| c | | Set up Water Diversion | | x | | | | | |
| c | | Over excavate and Install Casing Pipe for Gas | | x | | | | | |
| c | | Over excavate and Install Casing Pipe for Water | | x | | | | | |
| c | | Stage 2 Construction East Side Contractor Sets up Traffic Signal For two way operation | | | | | | | |
| c | | Flip TTCP | | | x | | | | |
| c | | Verify water is all cut over and gas | | | x | | | | |
| c | | Confirm Prop and Existing Drainage and Verizon Ducts and Old Vz TMH is supported or removed. | | | x | | | | |
| | | **Sub-Total** | **180** | | | | | | |
| Stage 5: Phase A | | Enabling' work by the Contractor - - Coordinate with Utilities to adjust Structures in advance of Full Depth Box Widening and Milling and Paving. Set grades for all structures to be adjusted. | | | | | | | |
| | | **UTILITY OPERATIONS - Adjust Structures for Finish Grade Paving and SW** | | | | | | | |
| Task: 19 | | ***Utility Co. Adjust as Directed - this Est is for one lift*** | | | | | | | |
| | **U** | NGrid Gas - Adjust gates | 20 | | | | | | ** duce Est* |
| | **U** | Verizon - Adjust telephone manhole - Note Test Pit on any structure - Lowering and Plating may not be possible and require Force account changes to accomplish - Not Anticipate and this would be for the Contractor Convenience and paid for by Contractor . | 30 | | | | | | ** duce Est* |
| **C** | | Adjust water gates, Drainage, Sewer, Traffic signal HH | | | | | | | ** duce Est* |
| | **U** | Electric - Adjust MH's | 5 | | | | | | ** duce Est* |
| | | **Sub-Total** | **55** | | | | | | |

**IMPORTANT BASIS NOTES - FOR CONTRACTOR**

| | |
|---|---|
| 1 | Unless otherwise specified in the MassDOT Construction Contract, or unless specifically noted within this PUC Form, these durations (herein) are based upon the Contractor providing *unimpeded access* to the Utility company to perform Utility relocations (see Note 5 - Access). |
| 2 | "Concurrent Utilities" operations noted herein, are to signify those Utility Company operations that can be worked concurrently (e.g. Utility A and Utility B work on-site together) - MassDOT and the Contractor are to prepare NTPs to Utilities accordingly. |
| 3 | "Potential Access Restraints" noted within this PUC Form are for planning purposes. See MassDOT Contract for Contractual Access Restraints (refer to Subsections 8.02, 8.03, and/or 8.06 for Design Bid Build Contracts and Volume II Section 9 for Design Build Contracts). |
| 4 | Utility non-work periods - For planning purposes, the durations above contain some non work days (contingency) for New England conditions (precipitation, high temperatures, low temperatures, snow, ice). Gas line work however, typically has a seasonal restriction and can NOT be installed from 15-November to 15-March. Municipally Owned Electric and Gas Utilities are also restricted from proceeding from 15-November to 15-March. The Contractor shall (and the CTD plan) reflect this calendar restriction within the schedule (unless otherwise note). |
| 5 | Access - Unless otherwise noted in the Contract, and in addition to the 'enabling' notes above, the Contractor must provide safe and unimpeded access (for trucks, lifts, cranes, etc.) to the Utilities, to allow for the proposed relocation(s) - including but not limited to snow removal, clearing and grubbing, guard rail removal, barrier removal, tree removal, and grading. Any costs associated with these tasks are deemed to be incidental to the project. |
| 6 | For all MassDOT construction contracts issued after January 2014, the new Utility Coordination/documentation specification is required. This is Section 8.14 in Design-Bid-Build Contracts (see Design-Build index reference for applicable section #). |
| 7 | Prior to starting any and all enabling work for Utilities, the Contractor is to plan in advance with submittals and approved durations. |
| 8 | * Potential District Initiated Early Utility Relocation - if noted herein, the District reserves the right to initiate early utility relocation in advance of the Contract NTP. In submitting a bid price and in the development/basis of the Baseline Schedule, the Contractor shall not plan the Work with the potential benefit of any form of 'early utility relocation.' As a requirement of the Baseline submission, unless otherwise noted in this Specification, the earliest that the first Utility company is to receive the 30 days advance notification to mobilize to the site, will be 7 calendar days after the pre-construction meeting and never sooner than 7 days after the Contract NTP. |
| 9 | The contractor performing the tree trimming within the electrical space must be Line Clearance Qualified |



Proposal No. 608051 - 132406

**Project Name:** WILMINGTON ROUTE 38 — **Route 38 (Main Street)**

**Project File No.:** ##### — **608051** — **Respon. for Design:** MassDOT

**Prepared By:** GREEN INTERNATIONAL AFFILIATES

**Revision Date:** 6/9/25 — **Design Stage:** Jun-25 — 100% DESIGN

**Legend:** Relocate= 60 | Retain | Remove=2 | Proposed New= 4

**Notes:** 1) Offsets are measured to center of pole unless otherwise noted.

2.) A Design Exception for Horizontal Offset will be required when either the existing or proposed distance from face of curb to face of pole is less than 18".

3) Occupant: P = Power; T = Telephone; C = Cable TV; F = Fire Alarm; J = Joint

4) Locations shall not be changed without approval of MassDOT and/or the Utility Companies

| Existing Pole Information | | | | | | | | | | | | | | | | | | | | Proposed by Designer | | | | | | | | | | | | | | MassDOT / Utility Company Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Line No. | Sheet No. | Pole No. | Streetlight | | Eversource | RMLD | 2nd | Fire | CT ITS | First Light | Rayth eon | CC | VZ | Guy wires | Xformer | Risers | Station | Offset | | Cut | Fill | Retain/ Relocate | Reason | Station | Offset | | GPS Coordinates (MA State Plane NAD 83) | | Height | Min. Offset (ft) Face of Curb to face of Pole (Existing or Proposed) | Design Exception Req. (Horizontal Offset) | Designer Comments | |
| | | | ("X" if Yes) | No. | | | | | | | | | | Number | Number | ("X" if Yes) | | | | 6 Inch + Changes ONLY | | | | | | | Northing | Easting | | | | | |
| **MAIN STREET (ROUTE 38)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 1 | 105 | X | 1 | | 1 | 1 | | | | | 1 | 1 | | 1 | | 204+21.75' | 30.55 | LT | | | Retain | | | | | | | | 1.0 | YES | Would have ADA non-compliance if moved to proper offset | |
| 2 | 1 | | X | 1 | | 1 | 1 | | | | | 1 | 1 | | 1 | | 205+24.46' | 33.38 | LT | | | Retain | | | | | | | | 2.0 | NO | | |
| 3 | 1 | N/A | | | | 1 | 1 | | | | | | | | | X | 205+43.08' | 31.82 | RT | | | Retain | | | | | | | | | | | |
| 4 | 1 | 7-1 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 205+88.95' | 68.88 | LT | | | Retain | | | | | | | | 0.5 | YES | Would have ADA non-compliance if moved to proper offset | |
| 5 | 1 | 1-1 | | | | 1 | 1 | 1 | 1 | | | | | | | X | 206+19.54' | 49.58 | LT | | | Retain | | | | | | | | 12.5 | NO | | |
| 6 | 1 | 104 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | | X | 206+54.58' | 27.51 | LT | | | Retain | | | | | | | | 0.5 | YES | Would have ADA non-compliance if moved to proper offset | |
| 7 | 1 | N/A | X | 1 | | | | | | | | | | 1 | | X | 206+86.51' | 40.00 | RT | | | Retain | | | | | | | | 7.0 | NO | | |
| 8 | 1 | 103 A | | | | 1 | 1 | | | | | | 1 | 2 | | | 207+51.65' | 26.84 | RT | | | Relocate | ADA | 207+51.32' | 37.454' | RT | 3024175.394 | 744153.020 | | 12.7 | NO | | |
| 9 | 1 | 103 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | X | 207+52.77' | 26.71 | LT | | | Retain | | | | | | | | 0.5 | YES | OHW would be too close to building if moved to proper offset | |
| 10 | 2 | 102A | | | | 1 | 1 | | | | | | | 1 | | | 208+62.91' | 24.71 | RT | | | Relocate | ADA | 208+75.93 | 36.454' | RT | 3024064.551 | 744223.501 | | 11.7 | NO | | |
| 11 | 2 | 102 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | RMLD 2nd,VZ, Comcast | 208+70.83' | 24.6 | LT | | | Relocate | IN ROAD | 208+73.74' | 28.252' | LT | 3024104.991 | 744274.060 | | 1.5 | NO | replace private underground service to building, need contract item | 998.101 |
| 12 | 2 | 101A | | | | | | | | | | 1 | 1 | 1 | | | 209+25.28' | 22.57 | RT | | | Remove | IN ROAD | | | | | | | | | | |
| 13 | 2 | 101 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 209+30.96' | 20.66 | LT | | | Relocate | IN ROAD | 209+39.03' | 35.25' | LT | 3024060.65 | 744318.92 | | 1.6 | NO | Proposed push pole | |
| 14 | 2 | 52A | X | 1 | | | 1 | | | | | 1 | 1 | | | | 209+46.31' | 86.21 | LT | | | Retain | | | | | | | | 6.7 | NO | floodlight on pole | |
| 15 | 2 | 12-100 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 210+31.96' | 17.31 | LT | | | Relocate | IN ROAD | 210+33.67' | 29.224' | LT | 3023987.67 | 744378.01 | | 5.7 | NO | | |
| 16 | 2 | 99 | X | 2 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | Elect 2nd | 211+55.52' | 17.3 | LT | | | Relocate | OFFSET | 211+55.73' | 24.193' | LT | 3023894.76 | 744457.33 | | 7.4 | NO | replace private underground service to sign | |
| 17 | 2 | 99-1 | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | 3 | 98 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 212+99.96' | 16.94 | LT | | | Relocate | OFFSET | 212+99.97' | 18.248' | LT | 3023784.965 | 744551.06 | | 1.5 | NO | | |
| 19 | 3 | 98X | X | 1 | | 1 | 1 | 1 | 1 | | | | | | | Elect Keolis | 213+00.42' | 25.99 | RT | | | Relocate | IN ROAD | 212+97.12' | 33.000' | RT | 3023752.21 | 744511.54 | | 8.3 | NO | replace private underground service to switch box (BO) | |
| 20 | 3 | 97 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 214+45.69' | 17.70 | LT | | | Relocate | OFFSET | 214+45.71' | 18.248' | LT | 3023678.11 | 744650.17 | | 1.5 | NO | | |
| 21 | 3 | 96 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | | 215+69.91' | 17.50 | LT | | | Relocate | OFFSET | 215+69.93 | 18.25' | LT | 3023587.04 | 744734.64 | | 1.5 | NO | | |
| 22 | 3 | 2-95 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 217+11.58' | 18.09 | LT | | | Relocate | IN ROAD | 217+11.94' | 25.47' | LT | 3023488.28 | 744836.30 | | 1.5 | NO | Proposed push pole | |
| 23 | 3 | 260-1 | X | 1 | | | 1 | | | | | | | 1 | | | 216+91.59' | 116.09 | LT | | | Retain | | | | | | | | 0.2 | NO | Not in project limits | |
| 24 | 3 | 94A | | | | | | | | | | | | 2 | | | 217+84.99' | 18.07 | RT | | | Relocate | IN ROAD | 217+99.16' | 28.462' | RT | 3023389.18 | 744862.88 | | 10.8 | NO | Remove guy anchor | Temp Pole or short outage required for Culvert - Review SOE for Pole during Culvert Headwall |
| 25 | 3 | 94 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 217+99.68' | 18.26 | LT | | | Relocate | ADA | 218+04.53' | 26.33' | LT | 3023427.43 | 744902.46 | | 9.3 | NO | | |
| 26 | 3 | 93-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | 4 | 93 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | | 218+85.14' | 46.35 | RT | | | Relocate | GUY SUPPORT | 218+85.27' | 38.353' | RT | 3023326.653 | 744927.37 | | 21.6 | NO | | |
| 28 | 4 | 93 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | | 218+86.15' | 16.93 | LT | | | Relocate | OFFSET | 218+86.23' | 18.255' | LT | 3023372.45 | 744960.65 | | 1.5 | NO | | |
| 29 | 4 | 92 | X | 2 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | | 220+18.50' | 18.29 | LT | | | Retain | | | | | | | | 1.5 | NO | | |
| 30 | 4 | 91 | X | 2 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | X | 221+46.63' | 18.25 | LT | | | Retain | | | | | | | | 1.5 | NO | | |
| 30 | 4 | 12-90-1 | X | 1 | | | | | | | | | | | | X (3) | | | | | | REPLACE | | | | | | | | | | | |
| 31 | 4 | 12-90 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 1 | 1 | X | 222+61.06' | 19.1 | LT | | | Replace | | | | | | | | 2.0 | NO | | |
| 32 | | | | | | | | | | | | | | | | | | | | | | Prop. | | 222+63.17' | 29.400' | RT | 3023133.95 | 745255.22 | | 12.5 | NO | | |
| 33 | 4 | 89 | X | 2 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 223+88.90' | 19.35 | LT | | | Relocate | IN ROAD | 223+88.26' | 25.091' | LT | 3023114.99 | 745390.34 | | 3.8 | NO | | Pole has primary switch |
| 34 | 5 | 88-1 | X | 2 | | | | | | | | 1 | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | |
| 35 | 5 | 88 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 224+63.53' | 19.67 | LT | | | Relocate | IN ROAD | 224+63.48' | 26.509' | LT | 3023076.48 | 745455.52 | | 3.8 | NO | | |
| 36 | 5 | 87-1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 37 | 5 | 12-87 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 225+40.66' | 24.5 | LT | | | Relocate | ADA | 225+40.56' | 30.874' | LT | 3023034.87 | 745523.13 | | 8.1 | NO | Fire alarm on the pole | |
| 38 | 5 | N/A | X | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 | 1 | | X | 226+83.02' | 55.62 | LT | | | Retain | | | | | | | | 6.0 | NO | | |
| 39 | 5 | 12-86 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 2 | | | 227+28.66' | 19.96 | RT | | | Retain | | | | | | | | 0.1 | YES | Retaining sidewalk | |
| 40 | 5 | 86-1 | | | | | | | | | | | | | | | | | | | | Retain | | | | | | | | | | | | |
| 41 | 5 | 86 | X | 1 | | 1 | 1 | | | | | 1 | 1 | | | | 228+28.48' | 109.23 | LT | | | Retain | | | | | | | | 0.5 | YES | Not in project limits | Pole located off Lowell St |
| 42 | 5 | 12-85 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 2 | | | 228+43.69' | 23.40 | RT | | | Retain | | | | | | | | 3.0 | NO | | |
| 43 | 5 | 22-85 | X | 1 | | 1 | 1 | | | | 1 | 1 | 1 | | | | 229+05.82' | 140.31 | LT | | | Retain | | | | | | | | 0.5 | YES | Not in project limits | |
| 44 | 5 | 12-85-1 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | 2 | | | 229+46.02 | 18.53 | LT | | | Relocate | IN ROAD | 229+51.13' | 20.93' | LT | 3022741.43 | 745815.85 | | 1.5 | NO | | |
| 45 | 6 | 84 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | Vz | 230+08.30' | 17.81 | LT | | | Relocate | OFFSET | 230+08.24' | 19.16' | LT | 3022699.7 | 745854.88 | | 1.5 | NO | | Verizon does work to R&R Riser |
| 46 | 6 | 12-83 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 231+13.85' | 18.68 | LT | | | Retain | | | | | | | | 1.6 | NO | | |
| 47 | 6 | 12-82 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 232+37.52' | 18.17 | LT | | | Retain | | | | | | | | 1.5 | NO | | |
| 48 | 6 | 82-1 | | | | 1 | 1 | | | | | | | | 1 | | | | | | | Retain | | | | | | | | | | | |
| 49 | 6 | 12-82X | | | | 1 | 1 | | | | | | | | 1 | | 232+95.39' | 30.30 | RT | | | Retain | | | | | | | | 13.3 | NO | | |
| 50 | 6 | 81 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 233+64.63' | 18.28 | LT | | | Retain | | | | | | | | 2.0 | NO | | |
| 51 | 6 | 12-80 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 234+85.38' | 19.81 | LT | | | Relocate | ADA | 23483.83' | 18.25' | LT | 3022361.92 | 746189.68 | | 1.5 | NO | | |
| 52 | 7 | 79 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | 1 | | 236+36.08' | 20.17 | LT | | | Relocate | ADA | 236+36.57' | 23.75' | LT | 3022257.53 | 746301.31 | | 7.0 | NO | | |
| 53 | 7 | 78 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 237+35.44' | 19.92 | LT | | | Relocate | ADA | 237+35.71' | 23.748' | LT | 3022187.25 | 746371.23 | | 7.0 | NO | | |
| 54 | 7 | 12-78-1 | | | | 1 | 1 | | | | 1 | 1 | 1 | 2 | | X (RMLD Bypass) | | | | | | Retain | | | | | | | | | | | | |
| 55 | 7 | 77 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 238+66.46' | 20.10 | LT | | | Relocate | ADA | 238+66.82' | 24.13' | LT | 3022094.58 | 746463.98 | | 7.0 | NO | | |
| 56 | 7 | 76 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 239+84.12' | 19.19 | LT | | | Relocate | IN ROAD | 239+84.27' | 26.739' | LT | 3022013.16 | 746548.67 | | 7.0 | NO | | |
| 57 | 7 | 12-75 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 240+77.89' | 123.53' | LT | | | Retain | | | | | | | | 1.5 | NO | Relocated under Project 608929 | |
| 58 | 7 | 12-75-1 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 240+87.75' | 19.49 | LT | | | Relocate | IN ROAD | 240+75.17' | 28.81' | LT | 3021950.19 | 746614.25 | | 7.0 | NO | | |
| 59 | 7 | 19-1 | | | | 1 | 1 | 1 | 1 | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 60 | 7 | N/A | X | 1 | | 1 | 1 | 1 | 1 | | | | | | | | 240+29.83' | 211.22 | LT | | | Retain | | | | | | | | 1.5 | NO | | |
| 61 | 8 | 12-74 | X | 1 | | 1 | 1 | 1 | 1 | | 1 | 1 | 1 | | | | 241+78.33' | 21.36 | LT | | | Relocate | IN ROAD | 242+20.68' | 29.879' | LT | 3021847.90 | 746717.58 | | 7.2 | NO | Relocated under Project 608929 | |
| 62 | 8 | 28 | | | | 1 | 1 | 1 | 1 | | | 1 | 1 | | | | 242+46.11' | 174.14 | RT | | | Retain | IN ROAD | 242+11.82' | 180.348' | RT | 3021705.59 | 746562.58 | | 10.3 | NO | Relocated under Project 608929 | |
| 63 | 8 | 15-29 | X | 1 | | 1 | 1 | 1 | 1 | | | 1 | 1 | | | X | 242+35.94' | 45.02 | RT | | | Retain | IN BMP | 241+41.03' | 66.117' | RT | 3021836.54 | 746593.42 | | 10.0 | NO | Relocated under Project 608929 | |
| 64 | 8 | 73 | X | 2 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | X (Comcast) | 242+84.33' | 18.34 | LT | | | Relocate | IN ROAD | 242+84.48' | 28.4'2 | LT | 3021802.62 | 746761.79 | | 6.7 | NO | | |
| 65 | 8 | 73A | | | | | 1 | | | | 1 | 1 | | | | | 243+41.04' | 22.12 | RT | | | Relocate | OFFSET | 243+41.44' | 26.9'2 | RT | 3021723.30 | 746765.21 | | 5.5 | NO | | |
| 66 | 8 | 72 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 244+15.07' | 14.59 | LT | | | Relocate | IN ROAD | 244+08.26' | 27.71' | LT | 3021718.73 | 746851.38 | | 7.2 | NO | | |
| 67 | 8 | 71 | X | 2 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | 245+21.11' | 16.00 | LT | | | Relocate | IN ROAD | 245+21.24' | 23.14' | LT | 3021642.03 | 746933.30 | | 6.4 | NO | | |
| 68 | 9 | 12-70 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 246+49.68' | 13.03 | LT | | | Relocate | IN ROAD | 246+49.51' | 23.4' | LT | 3021562.49 | 747032.80 | | 6.6 | NO | | |
| 69 | 9 | 12-69 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 247+70.53' | 15.14 | LT | | | Relocate | IN ROAD | 247+70.42' | 23.2'2 | LT | 3021490.66 | 747129.03 | | 6.5 | NO | | |
| 70 | 9 | 68 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 2 | | 248+95.67' | 16.89 | LT | | | Relocate | GUARDRAIL | 248+95.49' | 21.25' | LT | 3021418.52 | 747230.20 | | NA | NA | No curb line | |
| 71 | 9 | 68-1 | X | 1 | | | 1 | | | | | | | | | | 249+45.97' | 35.60 | RT | | | Retain | | | | | | | | 18.4 | NA | No curb line | |
| 72 | 9 | 12-67 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 250+28.04' | 18.68 | LT | | | Relocate | GUARDRAIL | 250+28.19' | 21.28' | LT | 3021347.11 | 747341.55 | | NA | NA | No curb line | |
| 73 | 9 | 66 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | 251+46.77' | 16.45 | LT | | | Relocate | IN ROAD | 251+58.29' | 21.3'2 | LT | 3021277.01 | 747451.67 | | NA | NA | No curb line | |
| 74 | 9 | 66-1 | | | | | 1 | | | | | 1 | | | | | 251+47.55' | 66.01 | RT | | | Retain | | | | | | | | 48.1 | NA | No curb line | |
| 75 | 10 | N/A | X | 2 | | | 1 | | | | | | | | | | 252+45.38' | 31.65 | RT | | | Retain | | | | | | | | 14.4 | NA | No curb line | |
| 76 | 10 | 12-65 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 252+55.58' | 14.42 | LT | | | Relocate | IN ROAD | 252+55.66' | 21.25' | LT | 3021217.71 | 747531.59 | | NA | NA | No curb line | |
| 77 | 10 | 12-64 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 253+57.89' | 14.50 | LT | | | Relocate | IN ROAD | 253+58.18' | 28.331' | LT | 3021151.81 | 747613.82 | | NA | NA | No curb line | |
| 78 | 10 | 63 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 254+58.00' | 11.80 | LT | | | Relocate | IN ROAD | 254+58.97' | 21.353' | LT | 3021069.56 | 747676.82 | | NA | NA | No curb line | |

A00808 - 9

Proposal No. 608051 - 132406

**Project Name:** WILMINGTON ROUTE 38 — **Route 38 (Main Street)**

**Project File No.:** #### — **608051** — **Respon. for Design:** MassDOT

**Prepared By:** GREEN INTERNATIONAL AFFILIATES

**Revision Date:** 6/9/25 — **Jun-25** — **Design Stage:** 100% DESIGN

**Legend:** Relocate= 60 | Retain | Remove=2 | Proposed New= 4

**Notes:** 1) Offsets are measured to center of pole unless otherwise noted.

2.) A Design Exception for Horizontal Offset will be required when either the existing or proposed distance from face of curb to face of pole is less than 18".

3) Occupant: P = Power; T = Telephone; C = Cable TV; F = Fire Alarm; J = Joint

4) Locations shall not be changed without approval of MassDOT and/or the Utility Companies

| Existing Pole Information | | | | | | | | | | | | | | | | | | | | Proposed by Designer | | | | | | | | | | | | MassDOT / Utility Company Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Line No. | Sheet No. | Pole No. | Streetlight | | Eversource | RMLD | 2nd | Fire | CT ITS | First Light | Raytheon | CC | VZ | Guy wires | Xformer | Risers | Station | Offset | | Cut | Fill | Retain/ Relocate | Reason | Station | Offset | | GPS Coordinates (MA State Plane NAD 83) | | Height | Min. Offset (ft) Face of Curb to face of Pole (Existing or Proposed) | Design Exception Req. (Horizontal Offset) | Designer Comments | |
| | | | ("X" if Yes) | No. | | | | | | | | | | Number | Number | ("X" if Yes) | | | | 6 Inch + Changes ONLY | | | | | | | Northing | Easting | | | | | |
| 79 | 10 | 62 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 255+56.95' | 13.91 | LT | | | Relocate | IN ROAD | 255+56.83' | 21.33' | LT | 3020987.94 | 747734.63 | | NA | NA | No curb line | |
| 80 | 10 | 61 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | | x | 256+66.94' | 14.42 | LT | | | Relocate | IN ROAD | 256+66.79' | 22.78' | LT | 3020890.34 | 747790.49 | | NA | NA | No curb line | Review Owner of riser |
| 81 | 11 | 12-60 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 257+84.77' | 16.44 | LT | | | Relocate | IN ROAD | 257+85.08' | 23.62' | LT | 3020779.05 | 747837.14 | | NA | NA | No curb line | |
| 82 | 11 | 59 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | Vz & RMLD Primary | 258+68.73' | 13.13 | LT | | | Relocate | IN ROAD | 258+68.49' | 21.5' | LT | 3020699.36 | 747863.74 | | NA | NA | RMLP Reset riser and Vz to TMH riser R&R | |
| 83 | 11 | 58 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 260+67.01' | 14.14 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 84 | 11 | 56 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 262+15.01' | 11.62 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 85 | 12 | 12-55 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | 263+41.7' | 13.69 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 86 | 12 | 54 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 264+56.15 | 16.27 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 87 | 12 | 53 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 265+80.28 | 17.5 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 88 | 12 | RR | | | | | | | | | | | | | | | 266+87.97' | 21.02 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 89 | 12 | 52 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 266+97.95 | 15.99 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 90 | 12 | 51 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 268+03.87 | 12.11 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 91 | 12 | 12-50 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | X | 269+08.22' | 11.48 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 92 | 13 | 49 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | X Vz | 270+26.76 | 14.14 | LT | | | Retain | | | | | | | | | | | Relocated under Project 607327 |
| 93 | 13 | 48-1 | X | 1 | | | 1 | | | | | | | | | | 270+87.19 | 37.06 | RT | | | Retain | | | | | | | | 17.2 | NO | | |
| 94 | 13 | 48 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 271+49.56 | 16.82 | LT | | | Relocate | IN ROAD | 271+49.48' | 21.19' | LT | 3019431.58 | 748064.79 | | 4.4 | NO | | |
| 95 | 13 | 47 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 272+66.11 | 18.53 | LT | | | Relocate | IN ROAD | 272+66.08' | 22.734' | LT | 3019316.43 | 748080.58 | | 5.8 | NO | | |
| 96 | 13 | 47F | | | | | | | | | | | | 1 | | | 272+85.54 | 22.86 | RT | | | Retain | | | | | | | | 5.9 | NO | | |
| 97 | 13 | 46 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 2 Vz, empty | 273+83.23' | 18.06 | LT | | | Relocate | OFFSET | 273+84.13' | 22.747' | LT | 3019199.48 | 748096.61 | | 6.0 | NO | Review with Vz replacement of old conduit BY Others Vz | |
| 98 | 14 | 45 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 275+01.48 | 18.18 | LT | | | Relocate | OFFSET | 275+00.62' | 22.76' | LT | 3019083.31 | 748112.54 | | 6.0 | NO | | |
| 99 | 14 | 44 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 276+27.34 | 18.01 | LT | | | Relocate | OFFSET | 276+27.70 | 22.78' | LT | 3018958.17 | 748129.70 | | 6.0 | NO | | |
| 100 | 14 | 43 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | Fire | 277+41.10' | 18.20 | LT | | | Relocate | OFFSET | 277+41.01' | 22.8' | LT | 3018844.31 | 748144.70 | | 6.0 | NO | Contract Item to rem Fire alarm Wire, Box, riser | |
| 101 | 14 | 43-1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 102 | 14 | 42 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 278+68.02 | 20.74 | LT | | | Retain | | | | | | | | 4.0 | NO | | |
| 103 | 14 | 41 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | 279+59.28 | 19.48 | LT | 3.19" | | Retain | | | | | | | | NA | NA | No curb line | |
| 104 | 15 | 40 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 280+56.01 | 18.14 | LT | 2.89" | | Retain | | | | | | | | NA | NA | No curb line | |
| 105 | 15 | 39 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 281+79.53 | 18.47 | LT | | | Retain | | | | | | | | NA | NA | No curb line | |
| 106 | 15 | 12-38A | | | | 1 | 1 | | | | | 1 | 1 | | | CC Vz, RMLD | 282+92.67 | 18.9 | RT | | 7.956" | Relocate | ADA | 282+90.85' | 23.65' | RT | 3018300.05 | 748048.24 | | 6.9 | NO | | 2 Private Service Risers; Single Phase UG Service, CC and Vz share conduit (Vz will check if active)- Contract item |
| 107 | 15 | 12-38 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 282+98.23 | 17.97 | LT | 1.48" | | Retain | | | | | | | | NA | NA | No curb line | |
| 108 | 15 | 38-1 | | | | | 1 | | | | | | | | | | 283+57.63 | 35.59 | RT | | | Retain | | | | | | | | 18.6 | NO | | |
| 109 | 15 | 37 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | X Vz | 284+25.48 | 18.87 | LT | .603" | | Retain | | | | | | | | NA | NA | No curb line | |
| 110 | 15 | 36A | | | | | 1 | | | | | 1 | 1 | | | | 285+18.55 | 22.74 | RT | | 6.43" | Retain | | | | | | | | 5.75 | NO | | |
| 111 | 15 | 36 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 285+50.09 | 18.58 | LT | 10.56" | | Replace | Cut undermines | | | | | | | NA | NA | No curb line | |
| 112 | 16 | 12-35 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 286+56.08 | 19.58 | LT | | | Retain | | | | | | | | NA | NA | No curb line | |
| 113 | 16 | 34 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | 287+79.01 | 19.49 | LT | 3.91" | | Retain | | | | | | | | NA | NA | No curb line | |
| 114 | 16 | 33 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 289+02.27 | 18.30 | LT | 3.05" | | Retain | | | | | | | | NA | NA | No curb line | |
| 115 | 16 | 32 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 290+21.84' | 19.73 | LT | 1.68" | | Retain | | | | | | | | NA | NA | Remove Old Utility Pole | |
| 116 | | N/A | | | | | 1 | | | | | 1 | | | | | | | | | | Prop. | | 291026.86 | 22.55 | RT | 3017570.7 | 747940.62 | | 5.7 | NO | | |
| 117 | 16 | 31 | X | 2 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | X Abandoned | 291+30.23' | 15.40 | LT | | | Relocate | IN ROAD | 291+30.04' | 19.04' | LT | 3017464.39 | 747973.55 | | 2.3 | NO | | |
| 118 | 17 | 12-30 | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | 1 | | 292+59.11 | 14.89 | LT | | | Relocate | IN ROAD | 292+57.30' | 19.67' | LT | 3017337.97 | 747967.94 | | 2.9 | NO | | |
| 119 | 17 | 29A | | | | 1 | 1 | | | | | 1 | 1 | 1 | | | 293+28.57 | 22.56 | RT | | | Retain | | | | | | | | NA | NA | No curb line | |
| 120 | 17 | 12-29 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | 293+63.17 | 21.77 | LT | | | Relocate | IN ROAD | 293+54.16' | 21.97' | LT | 3017241.63 | 747968.61 | | 2.4 | NO | | |
| 121 | 17 | 29 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | X, 2 VZ | 293+25.43 | 102.81 | LT | | | Retain | | | | | | | | NA | NA | | |
| 122 | 17 | 28 | X | 1 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | X | 293+29.12 | 102.52 | LT | | | Retain | | | | | | | | NA | NA | | |
| 123 | 17 | | | | | | | | | | | | | | | | | | | | | Prop. | | 293+60.92' | 116.99' | LT | 3017234.83 | 748063.59 | | 3.1 | NO | | |
| 124 | 17 | | | | | | | | | | | | | | | | | | | | | Prop. | | 293+75.20' | 22.25' | RT | 3017221.41 | 747924.36 | | 5.5 | NO | | |
| 125 | 17 | 28 | X | 2 | | 1 | 1 | 1 | | | 1 | 1 | 1 | | | X VZ | 294+67.55' | 20.15 | LT | | | Retain | | | | | | | | 3 | NO | | |
| 126 | 17 | 12-27-1 | | | | | 1 | | | | 1 | 1 | 1 | | | | 295+21.22' | 30.52 | RT | | | Retain | | | | | | | | 13.5 | NO | | |
| 127 | 17 | 27 | X | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | | 1 | | 295+86.51' | 23.35 | LT | | | Retain | | | | | | | | 6.1 | NO | | |
| 128 | 17 | 26S | | | | 1 | | | | | | 1 | 1 | | | | 297+21.96' | 20.19 | RT | | | Retain | | | | | | | | NA | NA | | |
| 129 | 17 | 26 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | | | | 297+08.54' | 21.30 | LT | | | Retain | | | | | | | | 4.3 | NO | | |
| 130 | 18 | 25 | X | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | | 1 | | 298+31.55' | 22.45 | LT | | | Retain | | | | | | | | 5.3 | NO | | |
| 131 | 18 | 24 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | | | | 299+54.04 | 22.89 | LT | | | Retain | | | | | | | | 5.9 | NO | | |
| 132 | 18 | 23 | X | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | | 1 | | 300+86.35' | 35.67 | LT | | | Retain | | | | | | | | 18.6 | NO | | |
| 133 | 18 | 22 | X | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | | | | 301+80.18' | 36.76 | LT | | | Retain | | | | | | | | 19.5 | NO | | |
| 134 | 18 | 21 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | | | 302+77.85' | 36.04 | LT | | | Retain | | | | | | | | 19.0 | NO | | |
| 135 | 19 | 12-20 | | | | 1 | 1 | 1 | | | 1 | 1 | 1 | | 1 | | 303+76.72' | 29.01 | LT | | | Retain | | | | | | | | 12 | NO | | |
| 136 | 19 | 12-19 | X | 1 | | 1 | 1 | 1 | | | 1 | 1 | 1 | | | X Vz | 304+80.69' | 18.23 | LT | | | Retain | | | | | | | | 2 | NO | | |
| 137 | 19 | 12-18 | X | 2 | | 1 | 1 | 1 | | | | 1 | 1 | | | | 305+85.07' | 29.28 | RT | | | Retain | | | | | | | | 12.0 | NO | | |
| 138 | 19 | 17 | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | | | 306+71.44' | 82.65 | RT | | | Retain | | | | | | | | 5.5 | NO | | |
| 139 | 19 | GPL | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | | | 306+82.65' | 75.14 | RT | | | Retain | | | | | | | | 13.9 | NO | | |
| 140 | 19 | 17A | | | | 1 | 1 | 1 | | | | 1 | 1 | | | | 306+80.34' | 24.31 | RT | | | Retain | | | | | | | | 7.0 | NO | | |
| 141 | 19 | 16A | | | | 1 | 1 | 1 | | | | 1 | 1 | | | | 307+76.12' | 25.87 | RT | | | Retain | | | | | | | | 8.9 | NO | | |
| 142 | 19 | NA | | | | 1 | 1 | | | | | 1 | 1 | | | | 307+63.23' | 126.83 | RT | | | Retain | | | | | | | | NA | NA | | |
| 143 | 19 | 15A | X | 1 | | 1 | 1 | 1 | | | | 1 | 1 | | | | 308+79.13' | 27.94 | RT | | | Retain | | | | | | | | 10.7 | NO | | |
| 144 | 20 | 14A | | | | 1 | 1 | 1 | | | | 1 | 1 | | 1 | | 309+67.42' | 28.68 | RT | | | Retain | | | | | | | | 11.7 | NO | | |
| 145 | 20 | 13A | X | 1 | | 1 | 1 | 1 | | | | 1 | 1 | | | | 310+69.72' | 25.57 | RT | | | Retain | | | | | | | | 8.3 | NO | | |
| 146 | 20 | 12A | | | | 1 | 1 | 1 | | | | 1 | 1 | | | | 311+64.04' | 25.64 | RT | | | Retain | | | | | | | | 8.7 | NO | | |
| 147 | 20 | 2-11 | | | | | 1 | | | | | | | | | | | | | | | Retain | | | | | | | | | | | Pole located on Old Main St |
| 148 | 20 | 11A | X | 1 | | 1 | 1 | 1 | | | | 1 | 1 | | 1 | | 312+63.7' | 20.99 | RT | | | Retain | | | | | | | | 5 | NO | | |
| 149 | 20 | 10-A | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | | | 313+65.17' | 22.26 | RT | | | Relocate | IN ROAD | 313+26.03 | 22.75' | RT | 3015344.91 | 748061.72 | | 7.4 | NO | Remove guy anchor | |
| 150 | 20 | 6A | | | | 1 | 1 | 1 | | | | | | 1 | | | 314+27.86' | 38.34 | RT | | | Relocate | ELIMINATE GUY | 314+09.32 | 46.53' | RT | 3015269.08 | 748132.47 | | 21.3 | NO | | |
| 151 | 21 | 8 | X | 1 | | 1 | 1 | 1 | | | | 1 | 1 | 2 | | | 315+29.20 | 14.78 | LT | | | Relocate | IN ROAD | 315+28.81' | 23.15' | LT | 3015232.76 | 748237.98 | | 6.2 | NO | | |
| 152 | 21 | 7 | | | | 1 | 1 | 1 | | | | 1 | 1 | 1 | 1 | | 316+39.52' | 22.9 | LT | | | Relocate | GUARDRAIL | 316+24.14' | 24.78' | LT | 3015154.29 | 748300.79 | | 1.5 | NO | | |
| 153 | 21 | 138 | X | 1 | | 1 | 1 | | | | | 1 | 1 | 2 | | | | | | | | | | | | | | | | | | | Pole Located on Border Ave |
| 154 | 21 | 6 | X | 1 | | 1 | 1 | | | | | 1 | 1 | | | | 317+41.5' | 24.33 | LT | | | Relocate | GUARDRAIL | 317+71.78' | 25.00' | LT | 3015009.56 | 748357.66 | | 8.1 | NO | | |
| 155 | 21 | 5 | | | | 1 | 1 | | | | | 1 | 1 | 2 | | X VZ | 318+38.09' | 24.07 | LT | | | Remove | | | | | | | | | 7.1 | NO | | |
| 156 | 21 | 138-95 | X | 1 | 1 | | 1 | | | | | 1 | 1 | | | | 319+08.54' | 18.99 | LT | | | Relocate | ADA | 319+14.35' | 19.28' | LT | 3014960.82 | 748357.09 | | 1.5 | NO | | |
| 155 | 21 | 8/9 | | | 1 | | 1 | | | | | 1 | 1 | | | | 319+61.67 | 18.00 | LT | | | Retain | | | | | | | | | | | |
| 156 | 21 | 193 | X | 1 | 1 | | 1 | | | | | 1 | 1 | | | | | | | | | Retain | | | | | | | | | | | |
| 157 | 21 | 137-1 | X | 1 | 1 | | 1 | | | | | 1 | 1 | | 1 | | | | | | | Retain | | | | | | | | | | | Pole located on Bread Avenue |

A00808 - 10

Proposal No. 608051 - 132406

**Project Name:** WILMINGTON ROUTE 38 **Route 38 (Main Street)**

**Project File No.:** #### **608051** **Respon. for Design:** **MassDOT**

**Prepared By:** **GREEN INTERNATIONAL AFFILIATES**

**Revision Date:** 6/9/25 **Jun-25** **Design Stage:** **100% DESIGN**

**Legend:**

- Relocate= 60
- Retain
- Remove=2
- Proposed New= 4

**Notes:** **1) Offsets are measured to center of pole unless otherwise noted.**

**2.) A Design Exception for Horizontal Offset will be required when either the existing or proposed distance from face of curb to face of pole is less than 18".**

3) Occupant: P = Power; T = Telephone; C = Cable TV; F = Fire Alarm; J = Joint

4) Locations shall not be changed without approval of MassDOT and/or the Utility Companies

| Existing Pole Information | | | | | | | | | | | | | | | | | | | Proposed by Designer | | | | | | | | | | | | MassDOT / Utility Company Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Line No. | Sheet No. | Pole No. | Streetlight | | Eversource | RMLD | 2nd | Fire | CT ITS | First Light | Raytheon | CC | VZ | Guy wires | Xformer | Risers | Station | Offset | Cut | Fill | Retain/ Relocate | Reason | Station | Offset | GPS Coordinates (MA State Plane NAD 83) | | Height | Min. Offset (ft) Face of Curb to face of Pole (Existing or Proposed) | Design Exception Req. (Horizontal Offset) | Designer Comments | |
| | | | ("X" if Yes) | No. | | | | | | | | | | Number | Number | ("X" if Yes) | | | 6 Inch + Changes ONLY | | | | | | | Northing | Easting | | | | | |
| **Totals** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 34 | 40 | 1 | 60 | 62 | 54 | 50 | 25 | 51 | 59 | 59 | 29 | 12 | 13 | | | | | 65 | | | | | | | | | | | |

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Proposal No. 608051 - 132406

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DOCUMENT A00809

# PLANT MAINTENANCE AGREEMENT LETTER

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July 24, 2025

Paul Stedman
District Highway Director
MassDOT Highway Division
District 4
519 Appleton Street
Arlington, MA 02476

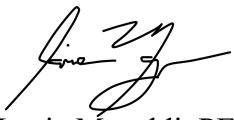
Re: Project File No.: 608051
Route 38 (Main Street Improvements)
Wilmington, Massachusetts

Dear Paul Stedman:

This letter acknowledges the general expectation for plant care for planting and seeding following the one-year MassDOT contract plant warranty for the Route 38 (Main Street) improvements project. The Town of Wilmington has reviewed MassDOT's Basic Plant Care for Healthy Establishment and agrees to perform maintenance as required and as shown on the associated Maintenance Plans.

Please feel free to call me at (978) 658-4481 with any questions or comments.

Sincerely,



Jamie Magaldi, PE, MCA
Director of Public Works

Cc: Carrie Lavallee, P.E., Chief Engineer
Michael O'Dowd, P.E., Director of Major Projects
Eamon Kernan, P.E., MassDOT Project Manager
Tara Mitchell, MassDOT Landscape Section
Dennis Vertiyev, P.E., Design Consultant

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DOCUMENT A00810

# MassDOT Herbicide Use Report

Proposal No. 608051-132406

# MassDOT Herbicide Use Report

**Date Submitted:**

*Use multiple sheets for multiple application techniques or sites as needed.*

**Contractor Performing Work:**

**Project or Contract No:**

**Town/s:**

**Associated Route:**

**Project Description:**

**MDAR ALERT*:**

**Treatment Description:**

**Area Treated (as applicable)**

**Acres:** **Sq Yds:** **Miles:**

**Weeds Targeted:**

**Gallons Formula Used:**

**Application Method:**

**Date/Time Began:**

**Date/Time End:**

**Product Used:**

| | | |
|---|---|---|
| Name: _____ | Name: _____ | Name: _____ |
| EPA Reg. No: _____ | EPA Reg. No: _____ | EPA Reg. No: _____ |
| % Active Ingredient | % Active Ingredient | % Active Ingredient |
| Dry: _____ | Dry: _____ | Dry: _____ |
| Liquid: _____ | Liquid: _____ | Liquid: _____ |
| Formulation (dilution rate): _____ | Formulation (dilution rate): _____ | Formulation (dilution rate): _____ |

**Additional products used (surfactants, etc.) or other information:**

**Applicators:** **License Numbers:**

* Please note:
EDRR Species (MAM, Hogweed, Pepperweed, Kudzu, etc.)
Tree of Heaven 1) stands of >20 trees; 2) >5 trees near nursery, landscape company, or highway rest area where trucks stop

*Upon completion, please submit form to MassDOT District Engineer and Landscape Design Section in Boston office.*

07/18/2018

DOCUMENT A00811

# WATERING LOG
# for
# MassDOT Plantings

# Watering Log for MassDOT Plantings

**Project Description:**

**Contract No:**

**Project No:**

**Plant Locations/s: (Attach planting plan/s as necessary)**

**Notes:**

| | **Separate logs shall be kept to track areas or plants with different watering schedules. Trees shall receive a minimum of 10 gallons with each watering and shrubs a minimum of 5 gallons. Provide note that if watering is not performed as scheduled due to rain. Record date of rainfall and amount.** | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Date Watered | | | | | | | | | | | | | |
| Landscape Contractor Initial | | | | | | | | | | | | | |
| Prime Contractor Initial | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Date Watered | | | | | | | | | | | | | |
| Landscape Contractor Initial | | | | | | | | | | | | | |
| Prime Contractor Initial | | | | | | | | | | | | | |

Each week, following watering, Log shall be submitted to the MassDOT Engineer.
6/15/2018

# MBTA FLAGGING REQUEST FORM

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Massachusetts Bay Transportation Authority

massDOT Massachusetts Department of Transportation Rail & Transit Division

# Flagging Request

Date: _____

Company/Agency: _____

Project Name: _____

Project Location: _____

Point of Contact: _____

Email: _____ Phone: _____

Project Number: _____ Funding Source: _____

RAILROAD OPERATIONS TRACKING NUMBER _____

Date Needed: _____

Start/Finish: _____

Flaggers Required: _____

Scope of Work:

(Attach additional SOW, if necessary.)

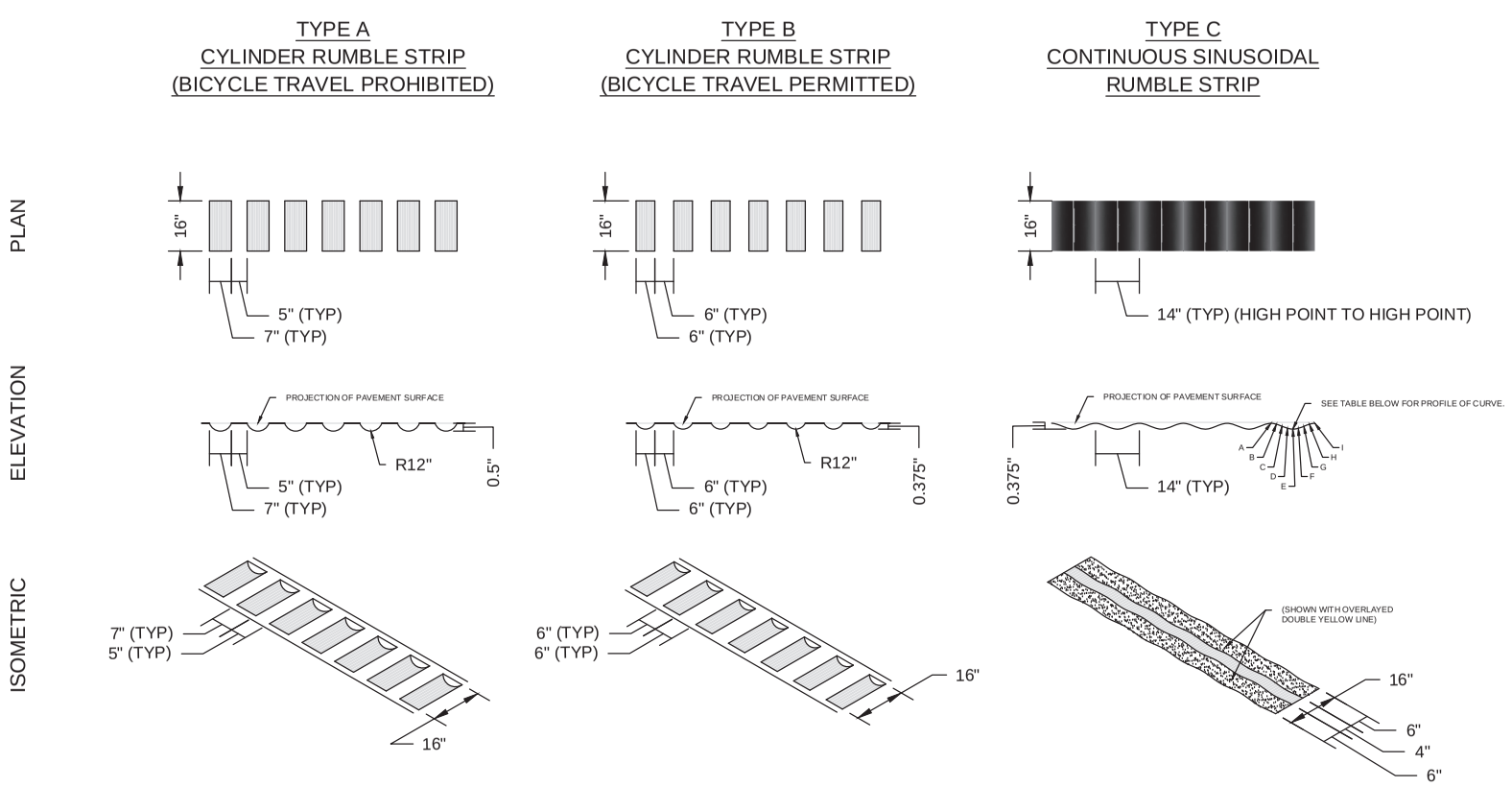
Schedule:

(Attach additional info, if necessary.)

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DOCUMENT A00816

# RUMBLE STRIP DETAILS




NOTES:

1. NOT TO SCALE. SOME LINE WORK EXAGGERATED FOR CLARITY.
2. SEE PLANS FOR LOCATION(S) AND START AND END STATIONS FOR ALL RUMBLE STRIP INSTALLATIONS.
3. HIGH POINT OF SINUSOIDAL RUMBLE STRIP LOCATED $\frac{1}{16}$" BELOW PAVEMENT SURFACE.

| DESIGN OF CURVE PROFILE FOR SINUSOIDAL RUMBLE STRIP | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| POINT | A | B | C | D | E | F | G | H | I |
| DEPTH FROM PAVEMENT SURFACE (IN.) | $\frac{1}{16}$ | $\frac{1}{8}$ | $\frac{7}{32}$ | $\frac{11}{32}$ | $\frac{3}{8}$ | $\frac{11}{32}$ | $\frac{7}{32}$ | $\frac{1}{8}$ | $\frac{1}{16}$ |
| DISTANCE FROM HIGH POINT "A" (IN.) | 0 | 1.75 | 3.5 | 5.25 | 7 | 8.75 | 10.5 | 12.25 | 14 |

massDOT Massachusetts Department of Transportation Highway Division

TRAFFIC & SAFETY STANDARDS
SECTION 860

# RUMBLE STRIP DETAILS

DATE OF ISSUE: 2020

DRAWING NUMBER: XXX.X.X

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: WILMINGTON Project File Number: 608051

Contract Number: 132406

Project Description: Reconstruction on Route 38 (Main Street), from Route 62 to the Woburn C.L.

All AutoCAD files are provided solely as a courtesy to facilitate public access to information. MassDOT attempts to provide current and accurate information but cannot guarantee so. MassDOT provides such documents, files or other data "as is" without any warranty of any kind, either expressed or implied, including but not limited to, accuracy, reliability, omissions, completeness and currentness. The Commonwealth of Massachusetts and its Consultants shall not be liable for any claim for damages, including lost profits or other consequential, exemplary, incidental, indirect or special damages, relating in any way to the documents, files or other data accessible from this file, including, but not limited to, claims arising out of or related to electronic access or transmission of data or viruses. Because data stored on electronic media can deteriorate undetected or be modified without our knowledge, MassDOT cannot be held liable for its completeness or correctness. MassDOT makes no representation as to the compatibility of these files beyond the version of the stated CAD software.

By signing this form, I agree that it shall be my responsibility to reconcile this electronic data with the conformed contract documents, and that only the conformed contract documents shall be regarded as legal documents for this Project. I understand that this authorization does not give me the right to distribute the files. I agree to the terms above and wish to receive the AutoCAD files.

This signed form shall be emailed to the Highway Design Engineer at the MassDOT -Highway Division at the following email address:

DOTHighwayDesign@dot.state.ma.us
Attn: AutoCAD Files

Name of person requesting AutoCAD files: _____

Affiliation/Company: _____

Address: _____

_____

Telephone number: _____

Email address: _____

Signature/Date: _____

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DOCUMENT A00825

# CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS ON THE EXPANDED ENVIRONMENTAL NOTIFICATION FORM AND PROPOSED ENVIRONMENTAL IMPACT REPORT

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*The Commonwealth of Massachusetts*
*Executive Office of Energy and Environmental Affairs*
*100 Cambridge Street, Suite 900*
*Boston, MA 02114*

Maura T. Healey
GOVERNOR

Kimberley Driscoll
LIEUTENANT GOVERNOR

Rebecca L. Tepper
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1081
http://www.mass.gov/eea

May 30, 2025

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
EXPANDED ENVIRONMENTAL NOTIFICATION FORM AND
PROPOSED ENVIRONMENTAL IMPACT REPORT

| | |
|---|---|
| PROJECT NAME | : Reconstruction of Route 38 |
| PROJECT MUNICIPALITY | : Wilmington |
| PROJECT WATERSHED | : Ipswich |
| EEA NUMBER | : 16942 |
| PROJECT PROPONENT | : Massachusetts Department of Transportation (MassDOT) |
| DATE NOTICED IN MONITOR | : April 23, 2025 |

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61- 62L) and Section 11.06 of the MEPA Regulations (301 CMR 11.00), I have reviewed the Expanded Environmental Notification Form (EENF), and hereby determine that this project **requires** the submission of an Environmental Impact Report (EIR). In accordance with 301 CMR 11.06(13), the Proponent has submitted a Proposed EIR with a request that I allow a Rollover EIR in lieu of the usual two-stage Draft and Final EIR process. I hereby grant the request; however, the Proponent is directed to file a response to comments received on the EENF and Proposed EIR and Proposed Section 61 Findings pursuant to 301 CMR 11.06(14)(b). As noted below, the Response to Comment should also attach a copy of MassDOT's Water Quality Certification (WQC) application which describes the proposed bridge replacement activity. The response to comments and Proposed Section 61 Findings shall be published in a subsequent Environmental Monitor, and shall be reviewed as a Final EIR subject to a 30-day public comment period.

Project Description

As described in the EENF and Proposed EIR (the "EENF/Proposed EIR"), the Town of Wilmington (the "Town") in conjunction with the Massachusetts Department of Transportation (MassDOT) is proposing to reconstruct the Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line in the Town of Wilmington, MA. The project will reconstruct the existing two-lane two-way road to achieve generally two 11-foot (ft) lanes and two 5-ft bike lanes along the project corridor. A 5-6 ft sidewalk will be added on one or both sides of the roadway depending on location. South of the Route 62 and Route 38 intersection, there will be a northbound travel lane and two 11-ft southbound travel lanes and a 2-ft shoulder for 900 ft of the project corridor. The project will also incorporate improvements to the existing closed drainage system, including headwall and culvert replacement, and a new water system along Route 38 from Route 62 to Eames Street. The project also proposes to add bicycle accommodations and improved pedestrian accommodations, and to install traffic signal improvements along the Route 38 corridor. The project is also proposing drainage improvements which include the installation of new deep sump catch basins with hoods, new drain manholes, replacement of existing drainage outfalls, as well as three proposed infiltration Stormwater Control Measures (SCMs) to mitigate the increase in peak rates of runoff from new impervious area.

The project will also include the replacement of an existing bridge carrying Route 38 over Maple Meadow Brook. The EENF/Proposed EIR indicates that this portion of the project is subject to a statutory exemption from M.G.L. c. 91 and Wetlands Protection Act (M.G.L. c. 131, § 40) permitting under a provision of the 2014 Transportation Bond Bill (St. 2014, c. 79, § 24). That provision states that these permits (and MEPA review) "shall not apply to bridge projects of the Massachusetts Department of Transportation and the Massachusetts Bay Transportation Authority for the repair, reconstruction, replacement or demolition of existing state highway, authority and municipally-owned bridges, including the immediate approaches necessary to connect the bridges to the existing adjacent highway and rail system, in which the design is substantially the functional equivalent of, and in similar alignment to, the structure to be reconstructed or replaced . . . ." The exemption for MEPA review does not apply if a project requires a "mandatory environmental impact report under 301 CMR 11.00." It is unclear whether this phrase refers to the mandatory EIR thresholds under 301 CMR 11.03 (which do not apply to this project), or to any requirement to file an EIR under MEPA regulations. In addition, the bridge replacement cannot be segmented form other components in order to evade MEPA review under anti-segmentation provisions in 301 CMR 11.01(2)(c). Nevertheless, MassDOT indicates that a 401 WQC application and 404 Pre-Construction Notification application (to U.S. Army Corp of Engineers) were already filed for the linear and bridge components in early April 2025, and that adequate mitigation has been provided under these regulations such that additional review under MEPA would not yield different outcomes. The WQC application, which includes a description of the bridge replacement work, was provided to the MEPA Office in response to inquiries from Agencies and the public during the MEPA review period. To avoid potential segmentation issues, the Proponent is directed to attach a copy of WQC application to its Response to Comment filing so as to provide complete disclosures of all project components.

Project Site

The proposed project is located along Route 38 (Main Street) in Wilmington, MA. Route 38 is an Urban Principal Arterial, located west of Interstate 93 and east of Route 3A, generally providing northwest and southeast movement between the towns of Tewksbury, Wilmington, Woburn, Winchester and Medford. The Route 38 project segment to be reconstructed and improved runs from Route 62 (Burlington Avenue/Church Street) in Wilmington to the Woburn city line for an approximate project length of 2.1 miles.

The project site does not contain Priority Habitat of Rare Species/Estimated Habitat of Rare Wildlife, Areas of Critical Environmental Concern (ACEC), or Outstanding Resource Waters (ORW). According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Panel No. 25017C0291E, effective June 14, 2010), a portion of the project site along Maple Meadow Brook is located within the 100-year floodplain on the current effective FIRM in a Zone AE with a Base Flood Elevation (BFE) of 82.9 ft NAVD88 upstream and 81.5 ft NAVD88 downstream. A portion of the site (where the bridge replacement will occur) is also located within regulatory floodway. The project site is located within one mile of five Environmental Justice ("EJ") populations characterized by Minority and Income. As described below, the EENF/Proposed EIR identified the "Designated Geographic Area" (DGA) for the project as one mile around EJ populations, included a review of potential impacts and benefits to the EJ populations within this DGA, and described public involvement efforts undertaken to date.

Environmental Impacts and Mitigation

Potential environmental impacts associated with the project (not including bridge replacement activities) include approximately 79 linear feet (lf) of impacts to Bank (65 lf permanent/ 15 lf temporary), 4,829 square feet (sf) of impacts to Bordering Vegetated Wetlands (BVW) (2,625 sf permanent/ 2,204 sf temporary), 461 sf and 65 cy of impacts to Land Under Waterbodies and Waterways (LUWW) (400 sf permanent/ 61 sf temporary), 6,815 sf of permanent impacts to Bordering Land Subject to Flooding (BLSF), and 71,960 sf of permanent impacts to Riverfront Area (RA). [1]

Measures to avoid, minimize, and mitigate project impacts include construction of stormwater management Best Management Practices (BMPs); construction of a 3,510 sf BVW replication area to mitigate permanent impacts BVW; creation of 4,161 cubic feet (cf) of compensatory flood storage capacity[2]; restoration of impacted areas of LUW and Riverfront Area, including replanting of native vegetation; and implementation of mitigation measures during construction to minimize noise, air, water, and traffic impacts.

Jurisdiction and Permitting

This project is subject to MEPA review because it requires Agency Action and meets/exceeds the MEPA review threshold at 301 CMR 11.03(3)(b)(1)(f) alteration of ½ or more acres of any other

[1] In coordination with MassDEP, the Proponent submitted revised impacts for BVW and LUWW during MEPA review.
[2] The lost flood storage volume of 2,155 cf will be compensated by the creation of 4,161 cf of storage.

wetlands.[3] The project is required to prepare an EIR pursuant to 301 CMR 11.06(7)(b) because it is located within a DGA of one or more EJ populations. The project will also require a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) from the United States Environmental Protection Agency (EPA), a 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP), and a Massachusetts Wetlands Protection Act (WPA) Order of Conditions from the Wilmington Conservation Commission.

Because the project is receiving partial Financial Assistance from an Agency (MassDOT), MEPA jurisdiction is broad in scope and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment as defined in MEPA regulations.

Request for Rollover EIR or Single EIR

The EENF/Proposed EIR included a request that I allow a Rollover EIR in accordance with 301 CMR 11.06(13) or alternatively, a Single EIR in accordance with 301 CMR 11.06(8). The MEPA regulations provide that for projects required to submit an EIR under 301 CMR 11.06(7)(b), the Proponent may submit an EENF with a request that I allow a Rollover EIR in accordance with 301 CMR 11.06(13). To support this request, the EENF must be accompanied by a Proposed EIR, which, if the request for Rollover EIR is granted, would be published as a Final EIR in a subsequent Environmental Monitor in lieu of the typical two-stage Draft and Final EIR process.

In order to allow a Rollover EIR, I must find that the dual EENF and Proposed EIR:

a. presents a complete and definitive description and analysis of the project and its alternatives, and an assessment of its potential environmental and public health impacts and mitigation measures sufficient to allow a Participating Agency to fulfill its obligations in accordance with M.G.L. c. 30, §§ 61 and 62K and 301 CMR 11.12(5)
b. demonstrates that the project will not materially exacerbate any existing unfair or inequitable Environmental Burden and related public health consequences impacting an EJ population, and will not result in a disproportionate adverse effect or increased climate change effects on an EJ population
c. describes measures taken to provide meaningful opportunities for public involvement by EJ populations prior to filing the dual ENF and Proposed EIR, including any changes made to the project to address concerns raised by or on behalf of EJ populations
d. shows that comments received on the dual ENF and Proposed EIR do not raise substantial issues not previously considered by the Proponent
e. shows that no substantive issues remain to be resolved

The MEPA regulations at 301 CMR 11.06(8) indicate that a Single EIR may be allowed provided I find that the EENF:

[3] The original submission of the EENF/Proposed EIR reported that the project would impact 5,135 sf of BVW, thus triggering the following MEPA threshold: 301 CMR 11.03(3)(b)(1)(d) alteration of 5,000 or more sf of bordering or isolated vegetated wetlands. However, as noted above, the Proponent submitted revised impacts during MEPA review which included 4,829 sf of impacts to BVW. Therefore, this MEPA threshold is no longer applicable.

a. describes and analyzes all aspects of the project and all feasible alternatives, regardless of any jurisdictional or other limitation that may apply to the Scope;
b. provides a detailed baseline in relation to which potential environmental impacts and mitigation measures can be assessed; and,
c. demonstrates that the planning and design of the project use all feasible means to avoid potential environmental impacts.

To support a request for Single EIR for any Project for which an EIR is required in accordance with 301 CMR 11.06(7)(b), I must also find that the EENF:

d. describes and analyzes all aspects of the Project that may affect Environmental Justice populations located in whole or in part within the Designated Geographic Area around the Project; describes measures taken to provide meaningful opportunities for public involvement by Environmental Justice populations prior to filing the expanded ENF, including any changes made to the Project to address concerns raised by or on behalf of Environmental Justice populations; and provides a detailed baseline in relation to any existing unfair or inequitable Environmental Burden and related public health consequences impacting Environmental Justice populations in accordance with 301 CMR 11.07(6)(n)1.

Consistent with these requests, the EENF/Proposed EIR was subject to an extended comment period under 301 CMR 11.05(9).

Review of the EENF

The EENF/Proposed EIR included a project description, alternatives analysis, existing and proposed conditions plans, estimates of project-related impacts, a Hydrologic and Hydraulic Analysis (H&H Analysis), and an identification of measures to avoid, minimize and mitigate environmental impacts. It included a description of measures taken to enhance public involvement by EJ populations and a baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ populations. Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the EENF/Proposed EIR contained an output report from the Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action Team (the "MA Resilience Design Tool"),[4] together with information on climate resilience strategies to be undertaken by the project.

The Proponent submitted supplemental information on May 19, 2025 and May 23, 2025 in order to address comments provided at the MEPA remote consultation session including an expanded discussion on the proposed alternatives, and updated wetland resource impacts. For purposes of clarity, all supplemental materials are included in references to the "EENF/Proposed EIR" unless otherwise referenced.

[4] Available at: https://resilientma.mass.gov/rmat_home/designstandards/

*Alternatives Analysis*

As noted above, the project corridor currently does not provide sufficient bicycle and pedestrian facilities. Pedestrian accommodations are limited to specific areas, and existing sidewalks are substandard, often failing to meet ADA/AAB requirements. Cyclists must either share vehicle lanes or use sidewalks, creating safety concerns. According to the EENF/Proposed EIR, in order to comply with MassDOT's Healthy Transportation Policy, the project must include compliant sidewalks and bicycle facilities. The EENF/Proposed EIR analyzed several design alternatives to meet MassDOT policy requirements.

A project-wide No-Build Alternative was analyzed, which proposes maintaining the existing roadway configuration. According to the EENF/Proposed EIR, this alternative would not meet the project goals for improving roadway conditions and improving bicycle and pedestrian safety. For these reasons, this alternative was dismissed.

The Pedestrian Accommodation Alternative proposes installing 5-ft-wide sidewalks on both sides of the roadway. According to the EENF/Proposed EIR, the MassDOT Healthy Transportation Policy requires 5-ft-wide sidewalks on both sides of the roadway in urbanized areas. The EENF/Proposed EIR notes while this alternative would meet the design requirements, it would also trigger over 4,000 sf of right-of-way (ROW) impacts, an additional 500 sf of wetland resource impacts, and the relocation of 20 utility poles. This alternative would also result in additional impacts to adjacent property owners. The Preferred Alternative will include sidewalks placed only on the west side of the roadway, serving residential areas and public parks, minimizing impacts on wetlands and utility infrastructure. The east side, which is primarily wooded and industrial areas, will not include sidewalks. The EENF/Proposed EIR notes that a design exception was requested and approved by MassDOT for this modification. Due to the increased impacts to wetlands and utility infrastructure, this alternative was dismissed.

The Bicycle Accommodation Alternative would involve the installation of 5-ft shoulders to accommodate bike lanes on both sides of the project corridor. According to the EENF/Proposed EIR, the MassDOT Design Guide requires bicycle accommodation using a minimum 5-ft shoulder for projects in urbanized areas. The EENF/Proposed EIR notes space constraints as a limitation. Expanding the shoulder to 5 ft would require reconstructing a retaining wall and impacting adjacent properties and businesses. The Preferred Alternative utilizes a 2-ft shoulder width in constrained areas while maintaining a 5-ft shoulder width elsewhere within the project limits to serve as a bicycle lane. The EENF/Proposed EIR notes that a design exception was requested and approved by MassDOT for this modification. Due to space constraints, this alternative was dismissed.

The Roadway Lane Configuration Alternative would include the construction of 12-ft travel lanes and 8-ft shoulders, where possible, to meet the MassDOT standard for NHS Non-Freeway roadways. According to the EENF/Proposed EIR, in order to accommodate this standard, the project would require an additional 8 ft of roadway widening, 3,565 sf of permanent wetland resource impacts, 16 trees removed, and impacts on MBTA platform retaining walls, utility pole location and electrical towers. The Preferred Alternative utilizes an 11-ft travel lane and 5-ft shoulder approach with additional reductions in shoulder width in constrained areas. The EENF/Proposed EIR notes that a design

exception was requested and approved by MassDOT for this modification. Due to the potential impacts listed above, this alternative was dismissed.

The Horizontal/Vertical Alignment Alternative would include meeting the minimum length of 15 times the design speed for horizontal curves and specific K values for vertical alignments as outlined by MassDOT. According to the EENF/Proposed EIR, meeting the horizontal curve standards would result in land being taken from 11 properties, a 1,300 sf increase in wetland resource impacts, and bridge/retaining wall reconstructions. Additionally, some of the challenges presented from meeting the vertical alignment requirements include:

- Lowering or raising the roadway significantly
- Rebuilding retaining walls
- Hydraulic opening of existing culverts and headwalls
- Introduces new high/low points that may require new retaining walls
- Driveways would be steeper than the existing grade if the profile is raised
- Minimum cover for underground utilities
- Extending the limit of grading.

The EENF/Proposed EIR notes that the Preferred Alternative has optimized safety for these two design components without fully meeting the design standard, and that a design exception was requested and approved by MassDOT for this modification. Due to the impacts listed above, this alternative was dismissed.

The Preferred Alternative, as described herein, includes the construction of two 11-ft travel lanes and two 5-ft bike lanes along the project corridor, as well as a 5-6 ft sidewalk on the west side of the roadway. This Alternative was selected as it minimizes impacts to environmental resource areas while providing an adequate level of pedestrian and bicycle accommodations throughout the urbanized section of the corridor. It also requires the least amount of utility relocations to support these facilities, thereby limiting wetland impacts.

As discussed above, the project also includes bridge replacement work, which the Proponent has indicated is exempt from permitting under M.G.L. c. 91 and the Wetlands Protection Act. During the review period, the Proponent provided a copy of WQC application, which includes a description of the proposed work. The WQC application notes that the replacement of the existing bridge, which carries Route 38 over Maple Meadow Brook, is needed due to its structural deficiency, age and due to scour making it difficult to locate the bridge abutments. The application notes that the bridge replacement is the functional equivalent and in similar alignment to the existing bridge.

*Environmental Justice (EJ) / Public Health*

As noted above, the project is located within one mile of five EJ populations characterized by Minority criteria. The EENF/Proposed EIR identified the DGA for the project as one mile. Within one mile of the project site, Portuguese and Portuguese Creole were identified as spoken by 5% or more of residents who also identify as not speaking English very well (Limited English Proficiency (LEP)

individuals). According to the EENF/Proposed EIR, EJ neighborhoods are located within the adjacent Towns of Burlington and Woburn.

Effective January 1, 2022, all new projects in "Designated Geographic Areas" ("DGA," as defined in 301 CMR 11.02, as amended) around EJ populations are subject to new requirements imposed by the Chapter 8 of the Acts of 2021: An Act Creating a Next-Generation Roadmap for Massachusetts Climate Policy (the "Climate Roadmap Map") and amended MEPA regulations at 301 CMR 11.00. Two related MEPA protocols—the MEPA Public Involvement Protocol for Environmental Justice populations (the "MEPA EJ Public Involvement Protocol") and MEPA Interim Protocol for Analysis of project Impacts on Environmental Justice populations (the "MEPA Interim Protocol for Analysis of EJ Impacts")—are also in effect for new projects filed on or after January 1, 2022. Under the new regulations and protocols, all projects located in a DGA around one or more EJ populations must take steps to enhance public involvement opportunities for EJ populations and must submit analysis of impacts to such EJ populations in the form of an EIR.

*Community Engagement*

The Proponent prepared an EJ Screening Form, which was translated into the languages identified above, and distributed to a list of community-based organizations (CBOs) and tribes/indigenous organizations (the "EJ Reference List") developed by the Proponent from a list provided by the MEPA Office. The EJ Screening Form included contact information to request information about the project and/or translation services. Notice of the MEPA remote consultation session was also distributed to the EJ Reference List, and the meeting was held during the evening to accommodate residents who may be unable to attend meetings during working hours. The notice of the MEPA remote consultation session was translated into Portuguese. Interpretation services in Portuguese were offered upon request (no requests were received). According to the EENF/Proposed EIR, several public meetings and outreach efforts have been held throughout the design phase for the project, as listed in the table below:

*Table 2.2: Public Outreach and Coordination Meetings*

| Outreach Type | Date |
|---|---|
| Board of Selectmen Meeting | July 12, 2017 |
| Abutters Meeting | January 9, 2017 |
| 25% Design Public Hearing | June 12, 2020 |
| Translated EJ Screening Form to EJ Reference List/CBOS | January 23, 2025 |
| Distributed EENF and EIR to EJ Reference List/CBOS | October 6, 2025 |
| Environmental Justice Strategy meeting with project team | January 3, 2025 |
| Pre-Filing 401/404 Application site walk with MassDEP and ACOE | January 10, 2025 |
| Public Notice for EENF Filing | The week of April 21, 2025 |
| Distribution of Project Fact Sheet with the communities (Wilmington, Woburn and Burlington) | April 3, 2025 and April 14, 2025 |

The EENF/Proposed EIR confirms that project coordination with the public will continue with information made available on the MassDOT website.[5] In addition, the project team has developed a project fact sheet with project details, which will be posted on the municipal websites (Wilmington, Woburn and Burlington). A hard copy of the EENF/Proposed EIR will be available for review in the Town of Wilmington Public Library. The Proponent has committed to continuing to inform the public about the project and its status during the review of the EENF/Proposed EIR and after the review is completed. The Proponent confirms that the project will continue to provide any necessary translation services.

*Baseline Assessment and Project Impacts*

The EENF/Proposed EIR contained a baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ populations in accordance with 301 CMR 11.07(6)(n)1. and the MEPA Interim Protocol for Analysis of EJ Impacts. As noted above, there are no EJ neighborhoods located within the Town of Wilmington. According to the EENF/Proposed EIR, the data surveyed showed some indication an existing "unfair or inequitable" burden impacting the identified EJ populations. Specifically, the filing notes that the DPH EJ Tool identifies the Town of Burlington in which the EJ populations are located as exhibiting "vulnerable health EJ criteria"; this term is defined in the DPH EJ Tool to include any one of four environmentally related health indicators that are measured to be 110% above statewide rates based on a five-year rolling average. The DPH EJ Tool identifies one census tract (2230) in Burlington that meets the vulnerable health EJ criteria for Low Birth Weight.

In addition, the EENF/Proposed EIR indicates that the following sources of potential pollution exist within the DGA based on the mapping layers available in the DPH EJ Tool:

- MassDEP Major Air and Waste Facilities: 21
- M.G.L. c. 21E Sites: 4
- Massachusetts (Tier II) Toxics Use Reporting Facilities: 26
- MassDEP sites with AULs: 11
- MassDEP groundwater discharge permits: 1
- MassDEP public water suppliers: 1
- Wastewater treatment plants: 2
- Underground storage tanks: 15
- EPA facilities: 34
- Road infrastructure: 3 State Routes (Route 129, Route 38 and Route 62), Interstate, 0 US Highway
- MBTA bus and rapid transit: 42
- Other transportation infrastructure: 14
- Regional transit agencies: 2 - Lowell Regional Transit Authority (LRTA) & Massport
- Energy generation and supply: 2

[5] See: https://www.mass.gov/wilmington-reconstruction-of-route-38-main-street-from-route-62-intersection-to-woburn-city-line

The EENF/Proposed EIR states that while the EJ Populations within the DGA may exhibit some existing unfair or inequitable environmental burden, the project is not expected to materially exacerbate such existing conditions. The EENF/Proposed EIR asserted that the project will implement measures that will minimize construction period impacts and mitigate impacts to wetlands and flood storage. According to the EENF/Proposed EIR, the project will promote healthy modes of transportation. The project will provide safe crossings of Route 38, which currently serve as barriers to cyclists and pedestrians. The project is expected to have a number of benefits to the EJ populations in the area, as it will promote economic development, reduce traffic congestion in the surrounding area, and improve the existing drainage system.

According to the output report from the MA Resilience Design Tool included in the EENF/Proposed EIR, the project site has a high exposure to urban and riverine flooding due to extreme precipitation and extreme heat. EJ Populations in close proximity to the site, including in areas adjacent to Proctor Brook, are likely also exposed to these climate risks. According to the EENF/Proposed EIR, the project includes measures to minimize potential off-site flooding, including construction of a new stormwater management system and provision of compensatory flood storage volume to mitigate impacts to the floodplain.

*Stormwater*

According to the EENF/Proposed EIR, the project will result in an increase of 1.4 acres of impervious area due to roadway widening. The width of the disturbance will include slope grading along the shoulders of the roadway. Currently, a majority of the existing stormwater management along the project corridor is classified as "country drainage." The project is proposing the installation of new deep sump catch basins with hoods, new drain manholes, replacement of existing drainage outfalls, as well as three proposed infiltration Stormwater Control Measures (SCMs) to mitigate the increase in peak rates of runoff. The proposed outfalls are located at or near existing outfalls where there is an existing point source discharge. The EENF/Proposed EIR notes that these improvements are necessary to mitigate for the construction of additional impervious areas and to provide stormwater management where none presently exists. The deep sump catch basins will capture sediment within and provide up to a 25% total suspended solids (TSS) removal. The project utilized NOAA Atlas 14 Precipitation Data to model current precipitation intensities. The EENF/Proposed EIR indicates that the project will fully meet Stormwater Management Standard (SMS) 1, which includes no new untreated discharges. All new outfalls are designed with flared end sections and rip rap protection to prevent erosion to the existing wetland systems. There are no new untreated point source discharges created as a result of this project. The project intends to comply with standards 2, 3, 4 and 6 to the maximum extent practicable. The peak flow rates were calculated for the 2-, 10-, and 100-year storm events under proposed conditions and compared to the existing peak flow rates. Peak volumes for the 100-year storm showed negligible increases at different design points, with all peak flow rates indicating an increase of less than 1-inch or 1 cubic feet per second (cfs).

Comments from MassDEP state that installing an SCM within the proposed compensatory flood storage area to better meet the SMS to the maximum extent practicable should be further evaluated. Comments also note that it appears that Stormwater Management Standard 3 has been met using a "macro" approach, rather than to the maximum extent practicable. In response to comments from MassDEP, the Proponent cites that the goal of the proposed design for the Compensatory Flood Storage

Area is to protect/retain the existing mature trees in this area as much as feasible, which is why the limit of work is irregular. This floodplain mitigation measure is located within a 0-100-ft segment of the vegetated RA. The mature vegetation within RA is known to provide a natural buffer for stormwater discharging into this area to go through prior to reaching the surface water. The Proponent goes on to state that groundwater is typically high in such areas due to close proximity to Wetland "G", therefore surface SCM is likely not feasible. Subsurface SCM would likely require removal of trees. The compensatory flood storage area was designed to provide compensation on a foot-by-foot basis as well as to minimize impacts adjacent to wetland. Therefore, SCM is not deemed feasible. I note that these responses were provided directly to MassDEP during the review period and not incorporated into the MEPA filing. They should be attached to the formal Response to Comment filing required herein.

Comments from the Massachusetts MWRA state that the discharge of groundwater or stormwater to the MWRA sewer system from construction dewatering or draining activities is prohibited in the project area, pursuant to 360 C.M.R. 10.023(1), except in a combined area when permitted by the Authority and the Municipality. The project site will have access to a storm drain and is not located in a combined sewer area; therefore, the discharge of groundwater to the sanitary sewer system associated with the project is prohibited.

*Wetlands and Water Quality*

As noted above, the project will result in temporary and permanent impacts to approximately 79 lf of Bank, 4,829 sf of BVW, 461 sf and 65 cy of LUWW, 6,815 sf of BLSF, and 71,960 sf of RA. Impacts to Bank, BVW, LUWW, and RA will result from roadway widening, installation of erosion and sedimentation controls, culvert replacement, and the installation of stormwater infrastructure. To compensate for impacts to BVW, the project will include a 1:1 wetland replication area totaling approximately 3,510 sf. Replication measures have been designed and sited to replace the lost functions and values of the impacted wetland. Tree and shrub plantings are included as appropriate at wetland replication area locations including a total of 24 deciduous trees. In addition, the mitigation plan includes invasive species control measures to reduce the spread of the invasive species existing at the site. Construction specifications have been prepared for invasive species control to protect and minimize impacts to resource areas during construction. According to the EENF/Proposed EIR, the project encompasses the reconstruction of roads and structures owned by state highway agencies prior to August 7, 1996, meaning activities to maintain these facilities are exempt from requirements of the Massachusetts Rivers Protection Act.[6] Comments from MassDEP note that it does not appear that all work within the RA is grandfathered or exempted per 10.58(6)(a) as portions will occur within other wetland resource areas (BLSF) and the 100-foot Buffer Zone. Similarly, the minor activity exemption at 310 CMR 10.02(2)(b)2.p. does not apply to portions of the project where the roadway will be slightly widened in the RFA and a new drainage system will be installed, as the exemption is only applicable to adjustments and/or repairs to respective structures within the roadway. In response to comments from MassDEP, the Proponent confirms that they agree that the proposed work is not exempt from requirements for the RA under provision of 310 CMR 10.58(6) due to the RA overlapping with other protected wetland resource areas - BLSF and BVW. The Proponent also confirms that due to BLSF and BVW impacts within the RA where work is proposed, they cannot exempt any minor activities per 310

[6] See here: https://www.mass.gov/guides/rivers-protection-act-questions-answers.

CMR 10.02(2)(b)2. The Proponent has provided updated compliance with Performance Standards for the RA, as set forth in 310 CMR 10.58(4) as follows:

- RA associated with Maple Meadow Brook extends over 86,013 sf of the project area on Route 38. However, the work within WPA jurisdiction will occur within approximately 68,532 sf of RA.
- The RA within the project area consists of existing paved roadway and adjacent shoulders. Majority of the proposed work within this area is located within the limits of existing pavement, which is considered to be "degraded" RA, therefore, the majority of the proposed work is considered Redevelopment.
- Minor portion of the proposed box widening to accommodate roadway improvements required to provide safety accommodations for all roadway users as well as the drainage improvements (proposed outfall on the east side of Route 38 north of the bridge are located within the non-degraded RA and, therefore, is not considered Redevelopment, therefore alternatives were evaluated for this work per 310 CMR 10.58(4).

The EENF/Proposed EIR notes that tree restoration/replanting is proposed within the 200-ft RA of Maple Meadow Brook. All proposed trees and plantings will be within the public ROW. There is a total of 36 Deciduous trees being planted in Upland Areas, and 24 Deciduous trees being planted inside the Wetland Replication Area. The areas of proposed restoration within RA on site exceed the amount of impacted undeveloped RA at a ratio greater than 1:1.

As noted above, the project is proposing 6,815 sf and 18 cy of impacts to BLSF associated with the proposed full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and new drainage outfalls in select locations, which will be mitigated through construction of compensatory flood storage area. The compensatory flood storage area will provide 4,161 cubic feet (cf) of flood storage. The project is able to compensate the entire project's flood storage loss between elevations 80-92.9 ft. The constructed compensatory storage area will be restored with an application of loam and a native seed mix.

According to the EENF/Proposed EIR, an existing box culvert conveys an unnamed Intermittent Stream under Route 38. The culvert is proposed to be replaced with a 3'x 3' precast concrete box culvert in order to help prevent future obstructions. Comments from MassDEP note that the culvert at the unnamed Intermittent Stream is 3.5 feet wide and the proposed culvert is 3.0 feet wide. MassDEP requests that the measured bankfull width and evaluation of how the proposed 3-ft-wide culvert meets the Massachusetts Stream Crossing Standards (SCS) to the Maximum Extent Practicable should be provided. An evaluation of whether the culvert may be further widened to better meet SCS 3 should also be provided. In response to DEP comments, the Proponent reevaluated the opportunities to improve the proposed culvert to meet the SCS. The project is now proposing a 4'x3' precast concrete box culvert, which slightly exceeds the 1.2x bankfull width measurement required by the Massachusetts SCS.

As noted, the EENF/Proposed EIR did not provide disclosures related to the Route 38 bridge replacement, including whether the bridge under current or proposed conditions will meet SCS. During the MEPA review period, the Proponent provided a copy of the WQC application, dated April 10, 2025, in response to an inquiry from the Ipswich Watershed Association. The WQC application notes that the

replacement of the existing bridge, which carries Route 38 over Maple Meadow Brook, is needed due to its structural deficiency, age and due to scour making it difficult to locate the bridge abutments. The application notes that the bridge replacement is the functional equivalent and in similar alignment to the existing bridge. The bridge replacement will have permanent and temporary impacts to LUWW (2,118 sf permanent/ 546 sf temporary) as well as 650 cy of dredge and fill volume. The proposed replacement will achieve partial compliance with the Massachusetts Stream Crossing Standard by conforming with Standards 1, 4 and 5. Full compliance with Standard 6, including Standard 3 requiring a minimum opening of 1.2 times bankfull width, is deemed infeasible, and Standard 2 does not apply. Comments from the Massachusetts Water Resources Authority (WRC) state that Wilmington's Flood Plain District prohibits any encroachment in the regulatory floodway that would result in any increase in flood levels during the occurrence of the base flood discharge. Comments from the WRC note that as described in the supplemental WQC application, it appears this requirement has been met.

*Climate Change*

*Adaptation and Resiliency*

Effective October 1, 2021, all MEPA projects are required to submit an output report from the MA Resilience Design Tool to assess the climate risks of the project. Based on the revised output report submitted as supplemental information, the project has a "High" exposure rating based on the project's location for the following climate parameters: extreme precipitation (urban flooding), extreme precipitation (riverine flooding) and extreme heat. Based on the 75-year useful life and the self-assessed criticality of the project, the MA Resilience Design Tool recommends a planning horizon of 2070 and a return period associated with a 50-year (2% chance) storm event for the roadway reconstruction, and a planning horizon of 2070 with a return period associated with a 25-year (4%) chance storm event for the culvert replacement. The Tool recommends planning for the 50th percentile with respect to extreme heat (which indicates an increase in extremely hot days as compared to a historical baseline).

The MA Resilience Design Tool output indicates that the site has a maximum annual daily rainfall exceeding 10 inches within the overall project's useful life. This factor is indicated in the Tool as contributing to the "High" exposure for the extreme precipitation (urban flooding) parameter. According to the MA Resilience Design Tool output, the projected 24-hour precipitation depth associated with a 2070 50-year storm event is 8.9 inches. Based on the NOAA Atlas 14 Data that was used for the project design, it appears that the stormwater system, which is designed to convey and provide recharge for the current 100-year storm (8.11 inches) would be resilient to the future (2070) 50-year storm event as recommended by the Tool (8.9 inches). The EENF/Proposed EIR notes that while the project will result in an increase in impervious area, the project plans include significant improvement to the existing stormwater management infrastructure, including new deep-sump catch basins with hoods, stormwater swales and SCMs. The Proponent has committed to complying with MassDEP's SMS to the maximum extent practicable, and the system upgrades will be an improvement over existing conditions.

The Tool also indicates a "High" exposure for the extreme precipitation (riverine flooding) parameter. According to available MassGIS data, Maple Meadow Brook is within a mapped 100-year floodplain on the current effective FIRM in a Zone AE with a BFE of 82.9 ft upstream and 81.5 ft downstream. As discussed above, the project proposes to construct a compensatory flood storage area. The compensatory flood storage area will provide 4,161 cf of flood storage. The compensatory flood

storage has been designed to exceed the project's net fill in order to provide a net cut of approximately 2,007 cf across the project which will aid in the project's ability to mitigate flood waters. Compensatory flood storage was designed to meet the Performance Standards at 310 CMR 10.57(4)(a) as required by MassDEP. The constructed compensatory storage area will be planted with native species commonly found within the adjacent floodplain. The impacts to BLSF will not change floodwater flow paths or velocities, or the function of the floodplain, as the compensatory storage area has been designed in close proximity to the fill area and will receive any floodwaters displaced by the project. According to the EENF/Proposed EIR, the compensatory flood storage has been designed to exceed the 1:1 cut to fill requirement and will therefore provide additional storage in the event of a flood event. As noted above, in response to MassDEP comments, the design of the box culvert was modified to slightly exceed SCS requirement for bankfull width measurement.

The MA Resilience Design Tool output indicates that the project site is anticipated to have a 30+ day increase in days over 90 degrees Fahrenheit within project's useful life and the project is removing trees. In addition, the existing impervious area of the site is greater than 50%. These series of factors, respectively, are indicated in the Tool as contributing to the "High" exposures for the extreme heat climate parameter. While the project is increasing impervious area within the project site, which can increase local temperatures, the project will be proposing a wetland replication area, wetland restoration and creation of additional flood storage area across the project site, which will aid in reducing the heat island effect through processes such as evapotranspiration, shading, and heat absorption and storage. The EENF/Proposed EIR also states that a total of 60 deciduous trees will be planted across the upland and wetland portions of the project area, many of which will be planted along the proposed sidewalks, providing pedestrians with refuge from the sun.

*Greenhouse Gas Emissions (GHG)*

This project is subject to review under the May 2010 MEPA GHG Policy and Protocol (GHG Policy) because it exceeds thresholds for a mandatory EIR. The GHG Policy includes a de minimis exemption for projects that are expected to produce minimal GHG emissions. GHG emissions associated with this project will be limited to the construction period and are de minimis. Therefore, the Proponent was not required to submit a GHG analysis in conjunction with the EENF/Proposed EIR.

*Construction Period*

Construction on the project is expected to commence in Fall of 2026 and be completed in Winter of 2030. All construction and demolition activities should be managed in accordance with applicable MassDEP's regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11. If a piece of equipment is not available in the Tier 4 configuration, then the Proponent should use construction equipment that has been retrofitted with appropriate emissions reduction equipment. Emission reduction equipment includes EPA-verified, CARB-verified, or MassDEP approved diesel oxidation catalysts (DOCs) or Diesel Particulate Filters (DPFs). The Proponent should maintain a list of the engines, their emission tiers, and, if applicable, the best available control technology installed on each piece of equipment on file for

Departmental review. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). Comments go on to state that a spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases. All construction activities should be undertaken in compliance with the conditions of all State and local permits. I encourage the Proponent to reuse or recycle construction and demolition (C&D) debris to the maximum extent.

Mitigation & Section 61 Findings

The EENF/Proposed EIR includes a separate chapter summarizing proposed mitigation measures and includes draft Section 61 Findings. It contains commitments to implement these mitigation measures, identifies the parties responsible for implementation, and includes a schedule for implementation. As described in the EENF/Proposed EIR, the Proponent has committed to implement the following measures to avoid, minimize and mitigate Damage to the Environment:

*Environmental Justice*

- Traffic control measures will be implemented throughout the corridor for construction activity.
- Reduction of congestion along the roadway resulting in enhanced safety and accessibility of roadway for all roadway users including bicyclists, pedestrians, and vehicles.
- Wetland replication and restoration, Riverfront Area restoration, stormwater mitigation, and compensatory flood storage are provided within the scope of this project to minimize environmental impacts to surrounding EJ communities.

*Wetland/Stormwater*

- A 3,150 sf wetland replication area will be implemented to mitigate permanent BVW impacts. Temporarily disturbed wetlands will be restored.
- Compensatory flood storage of 4,161 cf is proposed to mitigate impacts to BLSF. This will provide additional flood storage beneficial for the long-term climate adaptation/future flood mitigation.
- Riprap placed for scour countermeasures and bank stabilization will be vegetated with compost and seed mix to mitigate exposed riprap within resource areas.
- Erosion and sediment control (ESC) measures will be installed during construction to protect adjacent resource areas.
- Stormwater SCMs, infiltration basins, subsurface infiltration systems, deep sump catch basins with hoods, pretreatment with isolator rows in the subsurface systems and a forebay in the infiltration basin, new drain manholes, replacement of existing drainage outfalls proposed to capture and treat runoff and reduce peak rates.
- The proposed drainage systems will maintain the historic drainage patterns, distributing runoff to the existing discharge points.
- The proposed outfalls are located at or near existing outfalls where there is an existing point source discharge.

*Climate Change Adaptation and Resiliency*

- Wetland restoration, wetland replication, and compensatory flood storage to mitigate wetland and flooding impacts. The additional flood storage provided will be advantages for the long-term climate adaptation.
- Riverfront Area restoration and tree planting to improve the surrounding ecosystem.
- Addition of pedestrian and bicycle facilities to reduce traffic and minimize GHG emissions.
- Planting 60 deciduous trees along the ROW.

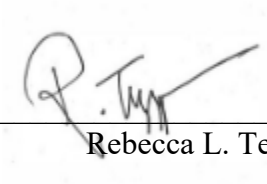
*Construction Period*

- Erosion and sediment controls will be utilized throughout the entire construction period to minimize impacts to the surrounding resource area.
- All areas will be permanently stabilized following the completion of construction work.
- All hazardous waste material will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products.
- A Temporary Traffic Control Plan (TTCP) for this Project has been developed with the goal of preventing unnecessary delays.
- During construction, pedestrian and bicycle accommodations will be maintained at active work zones per Mass General Laws Chapter 90E Section 2A.

Conclusion

Based on a review of the EENF/Proposed EIR and consultation with Agencies, I find that the Proposed EIR meets the standard for a Rollover EIR under 301 CMR 11.06(13)-(14). However, the Proponent is directed to file a response to comments received on the EENF and Proposed EIR and Proposed Section 61 Findings pursuant to 301 CMR 11.06(14)(b). In accordance with 301 CMR 11.16(3), the Proponent should circulate the responses and findings to each Person or Agency who commented on the EENF/Proposed EIR, each Person or Agency who previously commented on the EENF, and each Agency from which the project will seek Permits, Land Transfers or Financial Assistance. Upon filing, I will publish notice in a subsequent Environmental Monitor that the response to comments and Proposed Section 61 Findings shall be reviewed as a Final EIR subject to a 30- day public comment period.

May 30, 2025
Date



Rebecca L. Tepper

Comments received:

5/20/2025 Massachusetts Water Resources Authority (MWRA)

5/23/2025 Massachusetts Department of Environmental Protection (MassDEP)
5/23/2025 Massachusetts Water Resources Commission (WRC)

RLT/AM/am

MASSACHUSETTS WATER RESOURCES AUTHORITY
Deer Island
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Frederick A. Laskey
Executive Director

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May 21, 2025

Rebecca Tepper, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge St, Suite 900
MEPA Office, Amina Miliani
Boston, MA 02114

Subject: EOEEA #16942 – Expanded Environmental Notification Form
Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn City Line, Wilmington, MA

Dear Secretary Tepper,

The Massachusetts Water Resources Authority (MWRA) appreciates the opportunity to comment on the Expanded Environmental Notification Form (EENF) submitted by The Massachusetts Department of Transportation, Highway Division (MassDOT) (the "Proponent") for the Reconstruction of Route 38 (Main Street) Project, from Route 62 to the Woburn City Line in Wilmington, Massachusetts. The Project proposes to reconstruct the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line for a total project length of approximately 2.1 miles. The purpose of the Project is to improve roadway infrastructure, reduce traffic back-ups on entering side streets, improve the existing drainage system, and provide increased safety for roadway users.

MWRA's comments on this EENF relate to Toxic Reduction and Control (TRAC) discharge permitting.

TRAC Discharge Permitting

The discharge of groundwater or stormwater to the MWRA sewer system from construction dewatering or draining activities is prohibited in the Project area, pursuant to 360 C.M.R. 10.023(1), except in a combined area when permitted by the Authority and the Municipality. The Project Site will have access to a storm drain and is not located in a combined sewer area; therefore, the discharge of groundwater to the sanitary sewer system associated with the Project in prohibited.

On behalf of the MWRA, thank you for the opportunity to provide comments on this Project. Please do not hesitate to contact Hillary Monahan of my staff at (857) 324-0554 or Hillary.Monahan@mwra.com with any questions or concerns.

Sincerely,



Colleen Rizzi, P.E.
Director
Environmental and Regulatory Affairs

cc: John Viola, MassDEP

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
Northeast Regional Office • 150 Presidential Way Woburn, MA 01801 • 978-694-3200

Maura T. Healey
Governor

Kimberley Driscoll
Lieutenant Governor

Rebecca L. Tepper
Secretary

Bonnie Heiple
Commissioner

May 23, 2025

Rebecca L. Tepper, Secretary
Executive Office of
Energy & Environmental Affairs
100 Cambridge Street
Boston MA, 02114

RE: Wilmington
Reconstruction of Rte. 38 from Rte. 62 to the Woburn C.L.
EEA # 16942

Attn: MEPA Unit

Dear Secretary Tepper:

The Massachusetts Department of Environmental Protection Northeast Regional Office (MassDEP-NERO) has reviewed the Expanded Environmental Notification Form (EENF) for the proposed Reconstruction of Rte. 38 from Rte. 62 to the Woburn C.L. in Wilmington. MassDEP provides the following comments.

The MassDEP Wetlands Program Highway Unit appreciates the opportunity to provide comments on the above-referenced Expanded Environmental Notification Form (EENF) and Proposed Environmental Impact Report (PEIR), which was published in the Environmental Monitor on April 23, 2025. The Massachusetts Department of Transportation (MassDOT) – Highway Division in conjunction with the Town of Wilmington is proposing corridor improvements along an approximately 2.1-mile portion of Route 38 (Main Street) in Wilmington from the intersection of Routes 38 and 62 to the Woburn city line. The Project consists of roadway reconstruction and widening, two stream culvert replacements (only one of which is subject to MEPA review), Bordering Vegetated Wetland (BVW) replication, and improvements to intersection alignments and geometry, pedestrian and bicyclist facilities, and water and stormwater infrastructure. The purpose of the Project is to improve the roadway infrastructure, reduce traffic backups, improve the existing stormwater infrastructure, and increase safety for all roadway users. The Highway Unit attended the remote meeting on May 8, 2025. The comments herein are provided based on a review of the EENF, PEIR, supplemental information, and our understanding

This information is available in alternate format. Please contact Melixza Esenyie at 617-626-1282.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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of the Project and current level of design based on discussions during that meeting. Deficient or outstanding items identified herein are expected to be addressed through the Water Quality Certification and Wetlands Protection Act permitting processes.

Several wetland resource areas are present along the Project corridor, including Bordering Vegetated Wetlands (BVWs), Bank, Land Under Water (LUW), Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RFA). Maple Meadow Brook, a perennial stream, and one intermittent stream flow under Route 38 within the Project limits. The majority of the Project is within a Zone II Wellhead Protection Area; there are no other Critical Areas within the Project limits. There are no Areas of Critical Environmental Concern, Natural Heritage and Endangered Species Program (NHESP) Certified or Potential Vernal Pools, or NHESP Estimated Habitat of Rare Wildlife or Priority Habitat of Rare Species within the Project limits. The Stormwater Management Report indicates the existing drainage consists of a combination of country drainage and closed drainage systems.

The narrative states there will be two 11-foot-wide southbound travel lanes extending 900 feet south of the intersection of Route 62 and Route 38. Whether the roadway will be widened a lane width or more in this area should be clarified. If so, that portion of the project would not meet the limited project status at 310 CMR 10.53(3)(f), and full compliance with the Stormwater Management Standards is required for that portion of the project. In addition, all plan sheets depicting 100-foot Buffer Zones throughout the project should be provided.

It does not appear that all work within the RFA is grandfathered or exempted per 10.58(6)(a) as portions will occur within other wetland resource areas (BLSF) and 100-foot Buffer Zone. Similarly, the minor activity exemption at 310 CMR 10.02(2)(b)2.p. does not apply to portions of the project where the roadway will be slightly widened in the RFA and a new drainage system will be installed, as the exemption is only applicable to adjustments and/or repairs to respective structures within the roadway.

Project plans indicate the bankfull width of Maple Meadow Brook, used to offset the RFA boundary, is approximately 500 feet wide on the downstream end of the Route 38 crossing. Please note the landward extent of the surface water of Maple Meadow Brook is not necessarily representative of bankfull width. StreamStats indicates a bankfull width of approximately 25 feet, which should be used as a starting point to determine an approximate bankfull width. Representative upstream or downstream reference reaches should also be used, if present, along with field indicators such as changes in vegetational community and depositional features to determine a more accurate bankfull width.

It is not clear why the permanent BVW impacts at the intermittent stream culvert replacement (STA 218+00) could not be temporary and the BVW restored. The proposed final condition of this area should be clarified and if permanent BVW impacts are necessary, justification should be provided.
Installation of a retaining wall along the west side of Route 38 from approximate STA 138+50 to 241+00 should be evaluated to avoid or minimize permanent BVW impacts. If a retaining wall is not practicable, a steeper slope (i.e., 1.5:1 as opposed to 2:1) should also be evaluated.

The culvert at the intermittent stream at STA 218+00 is 3.5 feet wide and the proposed culvert is 3.0 feet wide. The measured bankfull width and evaluation of how the proposed 3-foot-wide culvert meets the Massachusetts Stream Crossing Standards to the Maximum Extent Practicable should be provided. An evaluation of whether the culvert may be further widened to better meet Stream Crossing Standard 3 should also be provided. Note the width of the culvert beneath the railroad tracks upstream of this crossing does not preclude and has no bearing on the potential widening of this structure.

**Stormwater**

Installing a Stormwater Control Measure (SCM) within the proposed compensatory flood storage area to better meet the Stormwater Management Standards to the maximum extent practicable should be evaluated.
It appears Stormwater Management Standard 3 has been met using the macro approach, rather than met to the maximum extent practicable. Standard 3 requires the annual recharge from the post-development site to approximate the annual recharge from pre-development conditions. MassDEP notes that providing the required recharge for the net increase in impervious surface meets Standard 3.

Please note MassDEP has requested a meeting with MassDOT and their consultant to discuss how the Estimated Seasonal High Groundwater (ESHGW) was determined for the infiltration SCMs, as well as to discuss the conclusions regarding ESHGW for SCM-2. Redoximorphic features used to identify ESHGW were not identified in the test pits or boring logs. Additional investigation may be needed to establish ESHGW at the infiltration SCMs.
SCM inspection and maintenance frequencies need to be in accordance with Volume 2, Chapter 2 of the Massachusetts Stormwater Handbook. The Illicit Discharge Compliance Statement at the end of the Stormwater Management Report should be signed and dated.

The MassDEP appreciates the opportunity to comment on this proposed project. Please contact Heidi.Davis@mass.gov at 339-225-2332 for further information on these wetlands issues. If you have any general questions regarding these comments, please contact me at John.D.Viola@mass.gov or at (857) 276-3161.

Sincerely,

This final document copy is being provided to you electronically by the Department of Environmental Protection. A signed copy of this document is on file at the DEP office listed on the letterhead.

John D. Viola
Deputy Regional Director

cc: Brona Simon, Massachusetts Historical Commission,
Eric Worrall, Kristin Divris, Jill Provencal, MassDEP-NERO
Heidi Davis, MassDEP-Boston

THE COMMONWEALTH OF MASSACHUSETTS

WATER RESOURCES COMMISSION

100 CAMBRIDGE STREET, BOSTON MA 02114

May 23, 2025

Secretary Rebecca L. Tepper
Executive Office of Energy and Environmental Affairs
Attn: Amina Miliani, MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: MEPA File No. 16942 - Wilmington

Dear Secretary Tepper:

The Water Resources Commission (WRC) staff has reviewed the Expanded Environmental Notification Form (EENF) for Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn C.L. in the Town of Wilmington.

As proposed, the Project involves activities within a 100-year floodplain as delineated on the current effective Flood Insurance Rate Map (FIRM) for Middlesex County dated June 4, 2010. In its role as the state coordinating agency for the National Flood Insurance Program (NFIP), I submit the following comments on behalf of the WRC.

WRC's Flood Hazard Management Program (FHMP), under agreement with the Federal Emergency Management Agency (FEMA), is the state coordinating agency for the NFIP. As such, the FHMP provides technical assistance to communities that participate in the NFIP related directly to the program and also related to floodplain management in general. Communities that participate in the NFIP are required by FEMA, as a condition of their participation, to regulate development within the 100-year floodplain in a manner that meets or exceeds the minimum standards established by FEMA, located at 44 CFR 60.3. Participating communities such as Wilmington are required to adopt the NFIP requirements through locally enforceable measures. In Massachusetts, many of the requirements contained in 44 CFR 60.3 are enforced through existing state regulations such as the State Building Code (780 CMR) and Wetlands Protection Act regulations (310 CMR 10.00). Communities typically adopt the remainder of the requirements as part of a zoning ordinance or other locally enforceable measure. Wilmington has a Zoning Bylaw which has been accepted by FEMA as meeting their requirements under the NFIP.

In our role as NFIP coordinator, the FHMP offers comments on the proposed Project's relationship to many of the above regulations and requirements. The FHMP does not administer any of these requirements and therefore does not provide official determinations as to compliance with them; rather, our comments are provided as an overview of the requirements and the documentation that the FHMP believes may be necessary to demonstrate compliance with these requirements.

The Project proposes to reconstruct the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line in Wilmington for a total project length of approximately 2.1 miles. Work proposed includes full-depth roadway reconstruction, widening of roadway to provide consistent roadway width, realign portions of roadway to improve substandard geometry, provide bicycle and pedestrian accommodations, intersection improvements, new traffic signals and land configuration, improvement roadway signage and pavement markings, replacement of water system infrastructure, relocation of utility poles, improvement to drainage infrastructure, and replacement of deteriorated culverts and headwalls. Based on information submitted with the EENF, areas within the project site are located within the 100-year floodplain on the current effective FIRM in a Zone AE with a mapped regulatory floodway. Because of its location in the 100-year floodplain, compliance with the requirements of several federal, state and local measures related to floodplain development are required.

In reviewing the EENF filing, it appears the project area includes the Main Street Bridge over Maple Meadow Brook, which is mapped as a regulatory floodway on the FIRM. Wilmington's Flood Plain District includes requirements for encroachments in watercourses that have a regulatory floodway delineated in Section 6.2.7.1, Procedures for Review by the Board of Appeals. This requirement prohibits any encroachment in the regulatory floodway that would result in any increase in flood levels during the occurrence of the base flood discharge. This requirement is also located in minimum NFIP standards found in 44 CFR § 60.3(d), which prohibits any encroachments within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge. As described in the supplemental Water Quality Certification Application dated April 10, 2025 provided by the Proponent, it appears this requirement has been met.

The Proponent should be aware that FEMA has pending FIRMs and Flood Insurance Study (FIS) Report for the project area that will become effective on July 8, 2025. These pending products are available on FEMA's Map Service Center for review and download. The proponent should consider analyzing how this proposal will change flood elevations as determined by the updated FIS.

Additionally, projects within the 100-year floodplain involving any federal action (e.g., permit, funding) must also comply with federal Executive Order 11988, Floodplain Management. Executive Order 11988 requires an eight-step decision-making process which includes analysis of alternatives, avoiding impacts when possible, and minimizing impacts when avoidance is not possible. Because this project is receiving federal funding and requires federal permits from the Federal Highway Administration (FHWA), US Fish and Wildlife Service (USFWS), US Army Corps of Engineers (AOE), and US Environmental Protection Agency (EPA), compliance with the eight-step decision-making process is necessary. While not in effect at this time, compliance with the Federal Flood Risk Management Standard (FFRMS) is encouraged to be considered as a higher resilience standard in the interest of the proponent's risk to flooding hazards

The proponent should be aware that climate change can bring further impacts to the proposed development. Changes to the state's precipitation regime are ongoing with further predicted changes to the amount and timing of rainfall. This may increase the potential for flooding to properties located in the 100-year floodplain.

Thank you for the opportunity to comment on the EENF. If you have any questions regarding these comments, or to request additional information or coordination with the FHMP, please contact Katie Paight at katie.o.paight@mass.gov or 857-283-0583.



Vandana Rao, PhD
Executive Director, MA Water Resources Commission

cc: Katie Paight, Department of Conservation and Recreation
Joy Duperault, Department of Conservation and Recreation
Al Spaulding, Building Inspector and Floodplain Administrator, Town of Wilmington
Valerie Gingrich, Director of Planning & Conservation, Town of Wilmington

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DOCUMENT A00826

# MEPA PROPOSED ENVIRONMENTAL IMPACT REPORT

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MEPA PROPOSED ENVIRONMENTAL IMPACT REPORT

# Reconstruction of Route 38 (Main Street) From Route 62 to the Woburn City Line Wilmington, Massachusetts

Project Proponent: MassDOT
MassDOT Contract No. 608051




Prepared for

Massachusetts Department of Transportation

April 15, 2025

Prepared by
GREEN
A Lochner Company

Building Strong Client Relationships Through Engineering Excellence

April 15, 2025

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

**Subject:** **Reconstruction on Route 38 (Main Street),**
**From Route 62 to the Woburn City Line**
**Wilmington, MA**
**EIR Submittal**

Dear Secretary Tepper:

On behalf of the Massachusetts Department of Transportation, Highway Division (MassDOT), Green International Affiliates is pleased to submit the enclosed Environmental Impact Report (EIR) for the above referenced Reconstruction on Route 38 (Main Street) Project in Wilmington, Massachusetts. The purpose of the project is to improve the roadway infrastructure, reduce traffic back-ups on entering side streets, improve the existing drainage system and provide increased safety for roadway users.

The subject project proposes to reconstruct the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line for a total project length of approximately 2.1 miles (MassDOT Project No. 608051).

This project is subject to MEPA review and preparation of an EIR pursuant to the following regulations because it requires a State Agency Action:

- 301 CMR 11.03(3)(b)1(d): alteration of 5,000 or more sf of bordering or isolated vegetated wetlands
- 301 CMR 11.03(3)(b)1(f): alteration of ½ or more acres of any other wetlands

The project exceeds the above MEPA thresholds and is within 1 mile of EJ populations, thereby requiring enhanced public involvement efforts. Although there are impacts associated with the proposed work, the project will result in a net benefit to public safety and access to the surrounding EJ communities.

Enclosed are the following items included with this electronic submission sent to MEPA@mass.gov:

- PDF of the Environmental Impact Report (EIR)
- PDF of the Plans (full sized)

This EIR is being submitted for publication in the upcoming Environmental Monitor. Public Notices in English and Portuguese will also be published in the Wilmington Town Crier the week of 4/21/2025.

**Secretary Rebecca Tepper**
**April 15, 2025**

Should you have any questions or require any additional information during your review of this EIR, please do not hesitate to contact me at ofartushnaya@greenintl.com or (978) 923-0400.

Sincerely,
***Green International Affiliates, Inc.***

Oxana Fartushnaya
Client Manager II | Water Resources Group[

cc: Eamon Kernan (MassDOT)
Project File: 21058.16XX

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# 1.0 PROJECT DESCRITION AND PERMITTING

The Massachusetts Department of Transportation, Highway Division (MassDOT) in conjunction with the Town of Wilmington propose to reconstruct the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line in the town of Wilmington, Massachusetts for a total project length of approximately 2.1 miles. This Proposed Environmental Impact Report (EIR) has been prepared in accordance with the guidelines provided in Section 11.07 of the Massachusetts Environmental Policy Act (MEPA) regulations. An Expanded Environmental Notification Form (EENF) will be filed, requesting a Rollover EIR (REIR).

The proposed work exceeds the activity thresholds described in 301 CMR 11.03(3)(b)1(d) for alteration of 5,000 or more sf of bordering or isolated vegetated wetlands and 301 CMR 11.03 (3)(b)(1)(f) for alteration of ½ or more acres of any other wetland; consequently, an Environmental Notification Form is being be filed to initiate project review under MEPA by the Executive Office of Energy and Environmental Affairs (EEA). Additionally, in accordance with 301 CMR 11.06(7)(b), an EIR is required for any project that is located within a Designated Geographic Area around an Environmental Justice Population. Therefore, this Proposed Environmental Impact Report (Proposed EIR) has been prepared in accordance with Massachusetts Environmental Policy Act (MEPA) Regulations, 301 Code of Massachusetts Regulations (CMR) 11.00, and describes the Project's purpose and need, proposed improvements, alternatives considered, potentially impacted environmental resources and preliminary mitigation strategies.

This section provides an overview of the project, project site, purpose and need, as well as proposed improvements. The anticipated permits and approvals as well as agency coordination and public outreach are also documented within this section.

The sections of this EIR are named and presented as listed below.

- Section 1: Project Description and Permitting
- Section 2: Environmental Justice and Public Health
- Section 3: Traffic and Transportation
- Section 4: Alternatives Analysis
- Section 5: Environmental Resources
- Section 6: Climate Change
- Section 7: Construction Period Impacts
- Section 8: Proposed Mitigation and Section 61 Findings

## 1.1 PROJECT OVERVIEW

The proposed project is located along Route 38 between Route 62 and the Woburn city line in the Town of Wilmington. Route 38 is an Urban Principal Arterial, located west of Interstate 93 and east of Route 3A, generally providing northwest and southeast movement between the towns of Tewksbury, Wilmington, Woburn, Winchester and Medford. The proposed section of Route 38 to be reconstructed and improved runs from Route 62 (Burlington Avenue/Church Street) in Wilmington, MA to the Woburn city line for an approximate project length of 2.1 miles.

The project will consist of reconstruction of the existing two-lane two-way road to achieve generally two 11-foot lanes and two 5-foot bike lanes along the project corridor. A 5'-6" sidewalk will be added on one, or both sides of the roadway depending on location. There will be two 11-foot southbound travel lanes and a 2-foot shoulder for 900 feet south of the Route 62 and Route 38 intersection. The project will also incorporate improvements to the existing closed drainage system, including headwall and culvert replacement, and a new water system along Route 38 from Route 62 to Eames Street. The project also proposes to add bicycle accommodations, improve pedestrian accommodations, and install traffic signal improvements along the Route 38 corridor. The project will upgrade the signage and pavement markings to improve driver safety along the project corridor. New signage and pavement markings also will be provided to enhance safety for bicyclists on the widened roadway. Bicycle and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility. This roadway upgrade will require full-depth reconstruction of the existing Route 38 pavement from Route 62 to Eames Street. Micromilling and resurfacing will be proposed along Route 38 from Eames Street to the Woburn City Line.

Improvements at the intersection of Route 38 and Route 62 (Burlington Avenue and Church Street) will include re-striping to provide additional turning lanes for the northern, southern, and western legs of the intersection, adding bicycle detection, and reconstructing the traffic signal, as well as a new retaining wall along the MBTA tracks south of this intersection. These improvements will result in less congestion along the corridor, and significantly lower delays and queues at the intersection. The project will only include pavement resurfacing and minor pavement widening and drainage improvements at the intersection of Route 129 (Lowell Street) because this section of Route 38 was reconstructed recently. The project will also include a traffic signal at the intersection of Route 38 with Cross Street and Butters Row. This signalization will provide more orderly traffic control for vehicles, pedestrians, and bicyclists. The side street approaches at this intersection are proposed to be realigned to provide improved sight distances and geometry. The improvements will add a left turn lane from northbound Route 38 to Butters Row. Realignments of Eames Street and Old Main Street are also proposed to improve safety. In all, these improvements will result in enhanced safety for all roadway users including bicyclists, pedestrians, and vehicles.

The project impacts are subject to the Massachusetts Wetlands Protection Act (WPA) and its implementing regulations 310 CMR 10.00 for work within Bordering Vegetated Wetlands (BVWs), Land Under Water (LUW), Inland Bank, Bordering Land Subject to Flooding (BLSF), the 200-foot Riverfront Area, and the 100-foot Buffer Zones. The entire project meets the criteria of the Limited Project provisions of the WPA listed in the 310 CMR 10.53(3)(f): *Maintenance and improvement of existing public roadways, but limited to widening less than a single lane, adding shoulders, correcting substandard intersections, and improving inadequate drainage systems*. An Order of Conditions (OOC) for the project (DEP File No. 344-1566) will be forthcoming by the Wilmington Conservation Commission.

The proposed work within Waters of the United States requires a Clean Water Act Section 401 Water Quality Certification pursuant to 314 CMR 9.04(1) since the project will result in cumulative permanent and temporary impacts to Bordering Vegetated Wetlands (BVW) and Waterways/Land Under Water (LUW) in excess of 5,000 square feet as well as dredging in waterways in excess of 100 cubic yards. Therefore, a Joint Application for 401 Water Quality Certification for Minor Dredging and Major Fill/Excavation (WQC Application No. 25-WW26-0013-APP) and Section 404 Pre-Construction Notification (PCN) was submitted to the Department of Environmental Protection (DEP) and the United States Army Corps of engineers in association with this project on April 10, 2025.

This project consists of maintenance and improvement of an existing roadway (including widening of less than a single lane, improvements to existing drainage systems and repaving). As the proposed project is a roadway project, which is increasing impervious area by less than one lane, it is therefore categorized as a "*Redevelopment Project*" under the Massachusetts Stormwater Management Standards. The project is therefore designed to meet the Standards to the maximum extent practicable. A Stormwater Management Report demonstrating the compliance of the project with the ten state stormwater standards is attached as Attachment D to this ENF.

### *1.1.1 Site Context and Existing Conditions*

Route 38 (Main Street) is an Urban Principal Arterial, located west of Interstate 93 and east of Route 3A, generally providing northwest and southeast movement between the towns of Tewksbury, Wilmington, Woburn, Winchester and Medford. The Route 38 project segment to be reconstructed and improved runs from Route 62 (Burlington Avenue/Church Street) in Wilmington, MA to the Woburn city line for an approximate project length of 2.1 miles. Main Street is located within a public right of way which is generally around 46 feet wide but widens around curves at the intersections. Pavement widths generally vary from approximately 30 to 34 feet. There is a sidewalk present on each corner of the Route 38/Route 62 intersection, along the eastern side of Route 38 between the intersections with Route 62 and Route 129, and on the western side of Route 38 near the Route 129 intersection. The sidewalks at the signalized intersections are approximately 5.5 feet wide, in fair condition, and in some cases do not comply with ADA/AAB requirements. The sidewalks are typically not ADA/AAB-compliant elsewhere, and there are no pedestrian accommodations along the majority of the corridor. The pedestrian signal phase clearance time at the Route 38 and Route 62 intersection is shorter than MUTCD-compliance. The travel lanes are generally 12-14 feet wide with shoulders between 2 and 5 feet. The pavement is in fair condition, and there is moderate pavement cracking throughout the project length. There are no bicycle accommodations on the roadway other than bicycle detection at signalized intersections, and limited pedestrian accommodations. Bicyclists currently must ride within the vehicle lanes or on the sidewalks, resulting in safety concerns. The average daily traffic to the roadway is 12,490 vehicles per day. The closest location to the bridge where a traffic count was performed (in October 2016) was 700 feet south of the Route 38 and Cross Street intersection. There are multiple existing underground and overhead utilities along the existing Route 38 within the project limits. There are several existing underground utilities at the project site, including gas, water, sewer, and drainage. In addition, there are a number of above ground utilities present at the project site which include many overhead wires and utilities poles throughout the project.

There are no Environmental Justice (EJ) populations located within the project area, however, based on the 2020 Environmental Justice Block Group Criteria, minority populations exist within 1 mile of the proposed limit of work. A detailed description of nearby EJ populations is included below.

There are protected wetland resource areas that exist directly adjacent to Route 38 along the project corridor. Most vegetated wetlands and streams on site belong to the Ipswich River headwaters, a subwatershed of the Ipswich River watershed. Approximately 200 feet of the southernmost limit of the project is located within the Aberjona River subwatershed, a subwatershed of the Mystic River watershed.

There is an existing obstructed 3.5'x1.5' box culvert just south of Dublin Avenue, conveying the Unnamed Intermittent Stream under Route 38 (approx. Sta. 218). The stream flows in the southwest to northeast direction and empties into a large wetland system. Additionally, Maple Meadow Brook is a perennial stream crossing the project at the approximate location of Sta. 253+70. There are no other stream crossings along the Route 38 corridor between Route 62 and the Woburn City Line.

Per MassGIS online data mapping, there are no Outstanding Resource Waters (ORW) within or adjacent to the project limits. There are no cold-water fisheries crossing or located adjacent to the project area (See Figure 3). The majority project is located within a Zone II, which is considered a "stormwater critical area" as defined in the Massachusetts Stormwater Handbook.

The existing site can be analyzed as twenty-nine (27) watershed areas that contribute runoff to twenty-one (21) discharge points. The existing drainage system on the roadways within the project limits includes "country drainage" (i.e. no curb), where the runoff sheet flows off the pavement into the pervious shoulder, roadside ditches, or private front yards. There are lengths of bituminous berm gutter, where the road runoff flows as concentrated flow to catch basins, or to a point where the berm discontinues, and the runoff flows onto adjacent wetland or wooded areas as shallow concentrated flow. The protected wetland resource areas within and adjacent to the project corridor are discussed in more detail in Section 5.0 of this report.

### *1.1.2 Purpose and Need*

The purpose of the project is to improve the roadway infrastructure, reduce traffic back-ups on entering side streets, improve the existing drainage system and provide increased safety for roadway users. A new water system is proposed along a portion of the project corridor. The Town of Wilmington will fund water system improvements, while the rest of the project is being funded by MassDOT.

Additionally, this project will provide safety enhancements along the Route 38 corridor in Wilmington for drivers and bicyclists, to promote improved flow of traffic, and to address drainage issues at various locations within a project segment. The corridor currently does not provide sufficient bicycle and pedestrian facilities. Pedestrian accommodations are limited to specific areas, and existing sidewalks are substandard, often failing to meet ADA/AAB requirements. Cyclists must either share vehicle lanes or use sidewalks, creating safety concerns. To comply with MassDOT's Healthy Transportation Policy, the project must include compliant sidewalks and bicycle facilities.

The need for the project is supported by a Road Safety Audit (RSA) conducted on January 26, 2017, which highlighted key safety concerns, including:

- Faded or improper pavement markings.
- Substandard pedestrian and bicycle accommodations.
- Intersection geometry deficiencies.
- Inefficient signage and signal equipment.
- Access management issues.
- Ineffective drainage.

The crash rate along Route 38 exceeds the Massachusetts statewide average. Angle crashes dominate at several intersections, including:

- Route 38 at Butters Row/Cross Street: 69% angle crashes.
- Route 38 at Route 62: 48% angle crashes.
- Route 38 at Route 129: 46% angle crashes.
- Route 38 at Eames Street: 29% angle and 29% rear-end crashes.

The project aims to:

- Enhance roadway infrastructure.
- Reduce traffic congestion on entering side streets.

- Improve drainage systems.
- Increase safety for all roadway users.
- Provide adequate multimodal accommodations along the Route 38 corridor in Wilmington

### *1.1.3 Proposed Conditions*

The project proposes to reconstruct the existing two-lane two-way road to achieve generally two 11-foot lanes and two 5-foot bike lanes along the project corridor. The 5'-6" sidewalk will be added on one, or both sides of the roadway depending on location. There will be two 11-foot southbound travel lanes and a 2-foot shoulder for 900 feet south of the Route 62 and Route 38 intersection. The project will also incorporate improvements to the existing closed drainage system, including headwall and culvert replacement, a new water system along Route 38 from Route 62 to Eames Street. The project also proposes to add bicycle accommodations, improve pedestrian accommodations, and install traffic signal improvements along the Route 38 (Main Street) corridor. The project will upgrade the signage and pavement markings to improve driver safety along the project corridor. New signage and pavement markings also will be provided to enhance safety for bicyclists on the widened roadway. Bicycle access and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility. This roadway upgrade will require full-depth reconstruction of the existing Route 38 pavement from Route 62 to Eames Street. Micromilling and resurfacing will be proposed along Route 38 from Eames Street to the Woburn City Line.

Improvements at the intersection of Route 38 and Route 62 (Burlington Avenue and Church Street) will include re-striping to provide additional turning lanes for the northern, southern, and western legs of the intersection, adding bicycle detection, tree removal and the pruning and trimming of trees and reconstructing the traffic signal, as well as a new retaining wall along the MBTA tracks south of this intersection. These improvements will result in less congestion along the corridor, and significantly lower delays and queues at the intersection. The project will only include pavement resurfacing and minor pavement widening and drainage improvements at the intersection of Route 129 (Lowell Street) because this section of Route 38 was reconstructed recently. The project will also include a traffic signal at the intersection of Route 38 with Cross Street and Butters Row. This signalization will provide more orderly traffic control for vehicles, pedestrians, and bicyclists. The side street approaches at this intersection are proposed to be realigned to provide improved sight distances and geometry. The improvements will add a left turn lane from northbound Route 38 to Butters Row. Realignments of Eames Street and Old Main Street are also proposed to improve safety. In all, these improvements will result in enhanced safety of roadway for all roadway users including bicyclists, pedestrians, and vehicles.

The project will not result in any impacts to the sewer or water utilities present throughout the site; however, the project will include a variety of drainage improvements. In order to install the proposed sidewalk and other ADA compliant pedestrian improvements throughout the project, several utility poles and overhead wires will be relocated.

The existing 3.5'x1.5' box culvert at approximate Sta. 218+00, conveying the Unnamed Intermittent Stream under Route 38, is proposed to be replaced with a 3'x3' precast concrete box culvert in order to help prevent future obstructions and achieve greater compliance with the Stream Crossing General Standards (SCGS). Placing a 6-inch layer of natural streambed material at the bottom of the proposed culvert, at the same elevation as the existing streambed, will ensure that the new culvert complies with

SCGS #4 and #5, unlike the existing culvert. Therefore, the proposed design results in an improvement upon the existing conditions at this stream crossing by replacing the existing box culvert, which increases the width of the crossing at this location. A substantial enlargement of the structure is not feasible due to constructability constraints posed by nearby utilities and the MBTA railroad tracks, as well as the potential for additional impacts to adjacent protected resource areas (VW A-series). The proposed culvert replacement at Sta. 218+00, conveying the Unnamed Intermittent Stream under Route 38, will achieve partial compliance with the Massachusetts River and Stream Crossing Standards (revised March 2011) by conforming with SCGS #4, #5. However, SCGS #2, #3 and #6 cannot be complied with, and #1 does not apply.

The proposed stormwater management analysis can be analyzed as twenty-nine (29) watershed areas contributing runoff to twenty-one (21) discharge points, which are the same under existing conditions. The limits of the overall watershed and discharge points of analysis are the same in proposed and existing conditions. The proposed drainage improvements include installation of new deep sump catch basins with hoods, new drain manholes, replacement of existing drainage outfalls, as well as three proposed infiltration Stormwater Control Measures (SCMs) to mitigate the increase in peak rates of runoff. While curbing will be added in sections of the roadway that used to sheet flow away from the project, the new drainage systems will maintain the historic drainage patterns, distributing runoff to the existing discharge points. The project also provides a modified drainage collection system to address the changes caused by the proposed road improvements as well as protecting the nearby downstream watershed and the environment.

Clearing and grabbing will be required for this project. The overall Route 38 project area of clearing and grubbing is approximately 66,500 SF±. As part of the subject project's tree restoration efforts, several locations within the project limits have been designated for replanting to mitigate the removal of trees affected by construction. All proposed trees and plantings will be within the public right of way. Control of invasive plants is also proposed to begin immediately with the initiation of construction activities and prior to any anticipated clearing or site disturbance. This work will be performed in accordance with MassDOT specifications for Invasive Plants Management.

## 1.2 AGENCY COORDINATION

An interagency coordination meeting with the project team, including MassDOT, MassDEP Wetlands Program, and Army Corps of Engineers occurred on 1/10/2025 as part of the Pre-Filing 401/404 Application site walk. A MassDOT Design Public Hearing (DPH) for the project was held on June 12, 2020 to present the proposed Route 38 Reconstruction project in Wilmington, MA.

As the Project progresses, coordination with the applicable state and local agencies will continue. More information on interagency meetings and coordination with the public can be found in Section 2.2 of this report as well as on the designated project web page on MassDOT Website and on MEPA Website when the project is submitted for MEPA review.

## 1.3 ANTICIPATED PERMITS AND APPROVALS

The table below lists the permits and approvals from federal, state, and local governmental agencies, which are required for the project:

*Table 1.1: Anticipated Permits and Approvals*

| Agency/Department | Permit/Approval | Status |
|---|---|---|
| **Federal** | | |
| Federal Highway Administration (FHWA)/ MassDOT Environmental | National Environmental Policy Act/ Categorical Exclusion | Approved 2/5/2025 |
| MA Historical Commission/ MassDOT CRU | National Historic Preservation Act of 1966/ Chapter 254 Section 106 Review | Completed 10/11/2023 |
| US Fish and Wildlife Service (USFWS)/ MassDOT Wildlife Section | Section 7 Review | Completed 8/9/2024 |
| Federal Highway Administration (FHWA) | National Environmental Policy Act/ De Minimis Determination for Section 4(f) Property | Approved 8/9/2024 |
| U.S. Army Corps of Engineers (ACOE) | Section 404 Clean Water Act ACOE MA General Permit | Filed 4/10/2025 |
| U.S. Environmental Protection Agency (EPA) | The Clean Water Act (CWA) / National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit | Pending |
| **State** | | |
| Executive Office of Energy and Environmental Affairs | Massachusetts Environmental Policy Act EENF/REIR | Filed 4/15/2024 |
| Massachusetts Department of Environmental Protection's (MassDEP) | Section 401 Clean Water Act Minor Dredging and Major Fill/Excavation Water Quality Certification | Filed 4/10/2025 |
| **Town of Wilmington** | | |
| Wilmington Conservation Commission | Massachusetts Wetlands Protection Act Order of Conditions | Filed 3/13/2025 |

### *1.3.1 National Environmental Policy Act (NEPA) Documentation*

The Project is receiving federal funding and therefore is subject to NEPA. A Programmatic Categorical Exclusion was approved for this project on 2/5/2025 for compliance under NEPA.

### *1.3.2 Massachusetts Environmental Policy Act (MEPA) Documentation*

The Project is subject to MEPA as it is receiving state funding and the proposed work exceeds the activity thresholds described in *301 CMR 11.03(3)(b)1(d): alteration of 5,000 or more sf of bordering or isolated vegetated wetlands* and *301 CMR 11.03(3)(b)1(f): 301 CMR 11.03(3)(b)1(f): alteration of ½ or more acres of any other wetlands*.

Additionally, since the project is also located within a one-mile radius of an Environmental Justice (EJ) population (its designated geographic area), the project is subject to MEPA's EJ protocols and amended

regulations. Therefore, the Proponent is jointly filing the Expanded ENF (EENF) and a Proposed Environmental Impact Report (EIR) filing.

### *1.3.3 Massachusetts Wetlands Protection Act Order of Conditions*

The Wetlands Protection Act (Massachusetts General Laws (MGL) Chapter 131, Section 40 protects wetlands and the public interests they serve, including protection of public and private water supply and ground water supply, flood control, prevention of storm damage and pollution, land containing shellfish, fisheries, and wildlife habitat.

The project is subject to the Massachusetts Wetlands Protection Act (WPA) Regulations and its implementing regulations 310 CMR 10.00 for work within Bordering Vegetated Wetlands (BVWs), Land Under Water (LUW), Inland Bank, Bordering Land Subject to Flooding (BLSF), the 200-foot Riverfront Area, and the 100-foot Buffer Zones. A Notice of Intent (NOI) was filed on 3/13/2025 with the Wilmington Conservation Commission seeking an Order of Conditions, approving the proposed improvements within the Protected Wetland Resource Areas. An Order of Conditions (OOC) for the project (DEP File No. 344-1566) will be forthcoming by the Wilmington Conservation Commission.

### *1.3.4 Section 401 of the Clean Water Act Water Quality Certification*

The proposed work within Waters of the United States requires a Section 401 Water Quality Certification for Major Fill and Excavation Projects pursuant to 314 CMR 9.04(1) since the project will result in more than 5,000 square feet cumulatively of temporary and permanent impacts to Bordering Vegetated Wetland and Land Under Water, areas subject to *310 CMR 10.00: Wetlands Protection* which is also subject to *33 U.S.C. §1251 et seq. (1972), The Clean Water Act (CWA)*. The project also involves activities resulting in dredging of over 100 cubic yards within the waterways under 314 CMR 9.04(12), and, therefore, requiring a 401 Water Quality Certification for Minor Dredging Projects.

Therefore, the Joint Application for 401 Water Quality Certification for Minor Dredging and Major Fill/Excavation (WQC Application No. 25-WW26-0013-APP) and 404 Pre-Construction Notification was submitted to the Department of Environmental Protection (DEP) on April 10, 2025 in association with this project.

### *1.3.5 Section 404 of the Clean Water Act (CWA) Massachusetts Regional General Permit*

The proposed work will involve discharge of dredged or fill material below the ordinary high-water line of water of the United States (WOTUS). Since the project will result in cumulative impacts to over 5,000 square feet of both temporary and permanent wetlands and waterways, and dredging in waterways over 100 cubic yards, the proposed project requires filing of a Pre-Construction Notification (PCN) with the New England District of the Army Corps of Engineers (ACOE). A filing of a Pre-Construction Notification (PCN) Form in accordance with Section 404 with the U.S. Army Corps of Engineers under GP 23 was submitted occur concurrently with the Section 401 WQC filing on April 10, 2025.

## 1.4 REQUEST FOR A ROLLOVER EIR

Since the project's Designated Geographic Area (DGA) is within an Environmental Justice area, this Project is required to file an EIR in accordance with 301 CMR 11.06(7)(b). Therefore, in accordance with 301 CMR 11.05(9), a dual EENF and Proposed EIR are being filed to initiate project review under MEPA by the Executive Office of Energy and Environmental Affairs (EEA).

The Proponent respectfully requests that the Secretary allow a Rollover EIR, and that this Proposed EIR is reviewed as a Final EIR (FEIR). If the Secretary finds that this filing does not meet the criteria allowing a Rollover EIR, the Proponent requests that the Secretary allow a Single EIR in accordance with 301 CMR 11.06(8).

# 2.0 ENVIRONMENTAL JUSTICE AND PUBLIC HEALTH

This section provides an assessment of the project's potential impacts on surrounding Environmental Justice (EJ) populations. In accordance with MEPA's EJ guidelines, the mapping tools developed by the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) and the Massachusetts Department of Public Health (DPH) were utilized to identify the EJ populations in proximity to the project site. In addition to discussing the potential impacts of the project on the identified EJ populations, this assessment also considers off-site sources that could result in a cumulative negative environmental impact on the surrounding EJ populations.

The following sections identify the EJ populations within a 1-mile radius of the project, assess the potential existing unfair or inequitable environmental burden imposed on those EJ populations, analyze project impacts to determine whether there are any disproportionate adverse impacts to EJ populations, and provide a description of language access and community outreach performed by the proponent, in order to support to goal of minimizing any potential environmental impacts to the maximum extent practicable.

## 2.1 REGULATORY CONTEXT

This section of the EIR evaluates the project impacts on the Environmental Justice population and summarizes the Proponent's efforts related to the enhanced public involvement requirements in accordance with the *MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations*, effective date of January 1, 2022, and the *MEPA Public Involvement Protocol for Environmental Justice Populations* ("EJ Protocol"), effective date of January 1, 2023.

This section of the EIR indicates whether EJ populations located within 1 mile of the Project site are reasonably likely to be negatively affected by the project and demonstrates the project's compliance with the new public involvement requirements.

## 2.2 COMPLIANCE WITH THE PUBLIC INVOLVEMENT PROTOCOL

In compliance with the above EJ Protocol, this section identifies and assesses the environmental justice populations within the project's DGA as well as the measures taken by the Proponent for public engagement and involvement.

### *2.2.1 Identification of Environmental Justice Populations*

In accordance with the EJ Policy, the EEA Environmental Justice Maps Viewer (the EJ Maps Viewer) was utilized to identify potential EJ populations and languages, as defined under the EJ Policy, that are within a 1- and 5-mile radius of the Project. The EJ Maps Viewer is derived from the 2020 U.S. Census (for EJ block groups) and 2015 American Community Survey 5-Year Estimated (for English isolation criteria).

EJ populations in Massachusetts are defined as neighborhoods (i.e. census block groups) that meet at least one of the following criteria:

- The annual median household income is not more than 65 percent of the statewide annual median household income;

- Minorities (i.e., individuals who identify themselves Latino/Hispanic, Black/African American, Asian, Indigenous people, and people who otherwise identify as non-white) comprise 40 percent or more of the population;
- 25 percent or more of households lack English language proficiency;
- Minorities comprise 25 percent or more of the population and the annual median household income (MHHI) of the municipality in which the neighborhood is located does not exceed 150 percent of the statewide annual median household income; or
- A geographic portion of a neighborhood designated by the Secretary as an environmental justice population in accordance with law.

There are no Environmental Justice (EJ) populations located within the project area, however, based on the 2020 Environmental Justice Block Group Criteria, minority populations exist within 1 mile of the proposed limit of work. A detailed description of nearby EJ populations is included below.

Figure 6 in Appendix B identifies EJ populations within a 1- and 5-mile radius of the Project Site. As the Project does not exceed thresholds related to air quality, the "Designated Geographic Area" (DGA) includes a 1-mile radius from the Project.

The project's DGA includes 5 EJ block groups with minority populations. These are listed in Table 1 below and shown in Figure 6 – Environmental Justice Map.

*Table 2.1: Environmental Justice Block Groups within 1 Mile of the Project Site*

| Block Group | Census Tract | EJ Community Type | Total % Minority Population | Median Household Income | % of Households with English Isolation | Languages (At census tract level)* |
|---|---|---|---|---|---|---|
| 1 | 3336.01 | Minority | 42 | $121,924 | 0.0 | Portuguese or Portuguese Creole (5.35%) |
| 3 | 3336.02 | Minority | 28 | $113,409 | 2.0 | Portuguese or Portuguese Creole (5.35%) |
| 4 | 3336.02 | Minority | 30 | $93,345 | 7.0 | Portuguese or Portuguese Creole (5.35%) |
| 4 | 3322.02 | Minority | 26 | $103,788 | 0.0 | - |
| 1 | 3322.02 | Minority | 30 | $118,528 | 9 | - |

Source: EJ Maps Viewer, 2020 https://mass-eoeea.maps.arcgis.com/apps/webappviewer/index.html?id=dffdbf9c109647fc9601f7524c1fd9f4

*Data is from 2015 ACS: "Languages Spoken in Massachusetts" tab of the EJ Maps Viewer to determine languages spoken by at least 5% of population in the census tract who do not speak English very well

### *2.2.2 Enhanced Public Involvement Prior to the EENF Filing*

As per the requirements stated in the *MEPA Public Involvement Protocol for Environmental Justice Populations*, "Measures to Enhance Public Involvement Prior to Filing ENF/EENF", a meaningful effort to engage with the community through expanded outreach in two languages has been made throughout the progression of this project, which is further described in the sections below.

#### *2.2.2.1 Advance Notification*

In accordance with the *MEPA Public Involvement Protocol for Environmental Justice Populations*, the EJ Screening Form was distributed to the list of Community Based Organizations (CBOs) provided the MEPA office and supplemented by the project team with additional organization on January 23, 2025. The EJ Screening Form was translated into Portuguese, the languages spoken by at least 5% of the population who do not speak English fluently, as identified through the EJ Maps Viewer. Copies of this outreach are included in the EJ Supporting Documentation in Appendix C.

#### *2.2.2.2 Community Outreach and Engagement*

Throughout the design phases of the project thus far, there have been several public meetings as well as outreach efforts to the local community. The various public meetings and public coordination efforts that have occurred so far throughout the project are listed in Table 2.2 below:

*Table 2.2: Public Outreach and Coordination Meetings*

| Outreach Type | Date |
|---|---|
| Board of Selectmen Meeting | July 12, 2017 |
| Abutters Meeting | January 9, 2017 |
| 25% Design Public Hearing | June 12, 2020 |
| Translated EJ Screening Form to EJ Reference List/CBOS | January 23, 2025 |
| Distributed EENF and EIR to EJ Reference List/CBOS | October 6, 2025 |
| Environmental Justice Strategy meeting with project team | January 3, 2025 |
| Pre-Filing 401/404 Application site walk with MassDEP and ACOE | January 10, 2025 |
| Public Notice for EENF Filing | The week of April 21, 2025 |
| Distribution of Project Fact Sheet with the communities (Wilmington, Woburn and Burlington) | April 3, 2025 and April 14, 2025 |

### *2.2.3 Planned Outreach/Public Involvement*

The project team will continue to hold meetings with state and local agencies as well as the general public and local community as the project progresses. The proponent and the project team will continue to notify the public of project updates and continue advertising legal ads in twp languages through the process. Additionally, a MEPA site visit that will be made available to the public, with the option to request interpretation services prior to the meeting.

Project coordination with the public will continue with information made available on MassDOT Website and on MEPA Website. In addition, the project team has developed a MEPA Fact Sheet with project details, which will be posted on the municipal websites (Wilmington, Woburn and Burlington). A hard copy of both the EENF and this EIR in English will be available for review in the Town of Wilmington Public Library. The MEPA Fact Sheet (included in Appendix C) will be distributed to the municipalities within the project's DGA at the time of the EENF and EIR filing.

The Proponent is committed to continue to inform the public about the project and its status during the review of the EENF and EIR and after the review is completed.

## 2.3 COMPLIANCE WITH THE IMPACT ANALYSIS PROTOCOL

This section assesses whether the project is anticipated to cause unfair or inequitable harm to vulnerable communities.

### *2.3.1 Assessment of Existing Unfair or Inequitable Environmental Burden*

In compliance with the MEPA Interim Protocol for Analysis of Project Impacts on Environmental Justice Populations, effective January 1, 2022, this section addresses Vulnerable Health Criteria, Potential Sources of Pollution, and Climate Change Vulnerability to help assess whether an existing unfair or inequitable environmental burden related to public health consequences has been placed upon the EJ communities, as compared to the general population, within the DGA.

The DPH EJ Tool was utilized to evaluate other possible sources of pollution that may have impacted or may impact in the EJ populations within the project site and the DGA. Note that the following facilities/infrastructure are all located within the Project Corridor itself: a Superfund site boundary, State Route 38, State Route 62, a MBTA Commuter Rail Line, a MBTA Railroad Track, and Transmission Lines for Energy generation and supply. The Project will not impact or increase the hazards associated with any of these facilities.

According to the Resilient Massachusetts Action Team (RMAT) Climate Resilience Design Standards Tool, the project site is at a high risk of impacts from extreme precipitation/urban flooding, extreme precipitation causing riverine flooding, and extreme heat; however, the project was also rated as "medium" for its ecosystem benefits score. The full RMAT Output Report can be found in Appendix D.

#### *2.3.1.1 Vulnerable Health Criteria*

The Massachusetts DPH EJ Tool was used in order to assess the potential health vulnerabilities faced by EJ populations within the study area. The various health vulnerabilities of EJ populations provide a basis for identifying and assessing any potential public health consequences that may result from environmental impacts of the project. According to the DPH EJ Tool, there are 0 EJ neighborhoods within the Town of Wilmington, and approximately 0% of the population lives in an EJ neighborhood.

The four environmentally based vulnerable health categories that are assessed using the DPH EJ Tool are Heart Attack, Elevated Blood Lead, Low Birth Weight, and Childhood Asthma. The Town of Wilmington was found to have statistically significantly lower blood lead levels, and lower childhood asthma rates when compared to statewide levels.

The DPH EJ Tool indicates that the Town of Wilmington does not meet the Vulnerable Health EJ criteria for heart attack rate, elevated childhood blood lead prevalence, low birth weight, and childhood asthma. In fact, the Town of Wilmington was found to have statistically significantly lower blood lead levels, and lower childhood asthma rates when compared to statewide levels. The rates for low birth weight and heart attack were found to be not statistically significantly different when compared to statewide levels. Therefore, the proposed Project is not anticipated to affect this health criteria. Additionally, the data show that there are no census tracts within the Town of Wilmington or the project site's DGA that have statistically significant high rates of elevated blood lead prevalence or low birth weights. Both rates are found to be not statistically significantly different when compared to statewide levels. This tool does not provide information on the rates of heart attacks or childhood asthma at the census tract level.

A small portion of the project's 1-mile DGA extends into the City of Woburn. The DPH EJ Tool indicates that the City of Woburn does not meet the Vulnerable Health EJ criteria for heart attack rate, elevated childhood blood lead prevalence, low birth weight, and childhood asthma. As a whole, the City of Woburn was found to have statistically significantly lower blood lead levels, and lower childhood asthma rates when compared to statewide levels. The rates for low birth weight and heart attack were found to be not statistically significantly different when compared to statewide levels. Therefore, the proposed Project is not anticipated to affect this health criteria. The results from the Vulnerable Health Criteria data indicate that none of the census tracks in the City of Woburn that are within the 1-mile DGA have statistically significant high rates of elevated blood lead prevalence or low birth weights. Both rates are found to be not statistically significantly different when compared to statewide levels. This tool does not provide information on the rates of heart attacks or childhood asthma at the census tract level.

Furthermore, a small portion of the 1-mile DGA also extends into a portion of the Town of Burlington. The DPH EJ Tool indicates that the Town of Burlington does not meet the Vulnerable Health EJ criteria for heart attack rate, elevated childhood blood lead prevalence, and childhood asthma. However, the municipality does meet the Vulnerable Health EJ criteria for low-birth-weight rate.

The low-birth-weight rates for the Town of Burlington exceed the 110% threshold for the statewide report. The low-birth-weight rates (Crude Rate per 10,000) respectively for the Town of Burlington and 110% of the statewide rate are reported below.

Low Birth Weight Rate (2011-2015):

- Town of Burlington: 267
- 110% Statewide Rate: 239

Overall, the analysis of the results of the Vulnerable Health Criteria data for Wilmington, Woburn, and Burlington all indicate that the census tracts within and around the project site are not exhibiting any of the "Vulnerable Health Criteria" as defined in the MEPA EJ Protocol, and therefore are not likely to bear an unfair or inequitable environmental burden or related public health consequences as a result of the project.

This project is not likely to have adverse effects on the EJ population in the project area. All impacts to the surrounding environment and public health will be avoided to the maximum extent practicable. The project is expected have a number of benefits to the EJ population in the area, as it will promote economic development, provide reduce traffic congestion in the surrounding area, and improve existing the drainage system.

The results from the Vulnerable Health Criteria data indicate that the census tracts within and around the project site are not exhibiting "Vulnerable Health Criteria" as defined in the MEPA EJ Protocol, and therefore are not likely to bear an unfair or inequitable environmental burden or related public health consequences as a result of the project.

#### *2.3.1.2 Other Sources of Pollution*

The MA DPH EJ Tool and the EPA's EJ Map Viewer were also used as tools to evaluate other possible sources of pollution that may have impacted or may impact in the EJ populations within the project site and the DGA.

The MA DPH EJ Tool indicates various regulated facilities/infrastructure within 1-mile of the project site are listed below:

- MassDEP major air and waste facilities – 21
- M.G.L. c. 21E sites – 4
- "Tier II" toxics use reporting facilities – 26
- MassDEP sites with AULs – 11
- MassDEP groundwater discharge permits – 1
- MassDEP public water suppliers – 1
- Wastewater treatment plants – 2
- Underground storage tanks – 15
- EPA facilities – 34
- Road infrastructure – 3 State Routes (Route 129, Route 38 and Route 62), Interstate, 0 US Highway
- MBTA bus and rapid transit – 42
- Other transportation infrastructure – 14
- Regional transit agencies – Lowell Regional Transit Authority (LRTA) & Massport
- Energy generation and supply – 2

The following facilities/infrastructure are all located within the Project Corridor itself: a Superfund site boundary, State Route 38, State Route 62, a MBTA Commuter Rail Line, a MBTA Railroad Track, and Transmission Lines for Energy generation and supply. The Project will not impact or exacerbate any hazards that may be associated with these facilities.

*2.3.1.3 Climate Change Vulnerability*

In order to assess the Climate Change Vulnerability of the project site, the Resilient Massachusetts Action Team's (RMAT) Tool was used to assess the primary climate change impacts to the site. The RMAT Output Report can be found in Appendix D of this report.

As shown in the report, the primary potential climate change impacts on the nearby EJ populations are related to flooding and extreme heat. While these were identified as potential threats to the project site, the project was designed to mitigate these threats to the maximum extent practicable and includes several measures to offset these potential impacts and therefore received a "medium" score for its ecosystem benefits. These mitigation measures proposed as a part of this project include will aid in reducing the heat island effect and aid future flood mitigation to the maximum extent practicable. The measures include, but are not limited to, a compensatory flood storage area designed to exceed the

project's net fill, stormwater mitigation areas designed to help mitigate the increase in peak rates (2 subsurface infiltration systems and 1 aboveground infiltration basin), new drainage system and drainage system improvements which will follow existing drainage patterns and will discharge to natural existing discharge points, a wetland replication area slightly exceeding the proposed fill within wetlands, areas of tree restoration and control of invasive plants.

## 2.4 ANALYSIS OF PROJECT IMPACT TO EJ POPULATIONS

This section further elaborates on some of the anticipated impacts of climate change on the project as well as the project's potential impacts and environmental benefits.

### *2.4.1 Climate Change*

In order to evaluate the potential impacts of climate change on the project, the EEA's RMAT Tool was used to generate an output report which can be found in Appendix D. As indicated in the report, the primary threats to the project site include extreme participation, including urban and riverine flooding, as well as extreme heat. The project aims to mitigate these impacts to the maximum extent practicable through drainage improvements, stormwater mitigation areas, flood storage compensation area, wetland replication and restoration areas, tree restoration areas, and other measures to help mitigate urban and riverine flooding and reduce heat island effect in the project area. The project has been designed to meet the Stormwater Management Standards to the maximum extent practicable. While the impacts of climate change tend to affect EJ populations more severely than non-EJ populations, the project does not exacerbate such impacts. It is not anticipated that there will be any adverse impacts to EJ and non-EJ populations, and no resulting disproportionate adverse impacts to EJ populations, as a result of this project.

### *2.4.2 Project Impacts*

#### *2.4.2.1 Wetlands and Stormwater*

The project will permanently impact approximately 2,806 square feet of Bordering Vegetated Wetlands (BVWs) and will temporarily impact approximately 2,329 square feet. The permanent wetlands impacts cannot be avoided in order to achieve the project purpose of improving the roadway infrastructure along Route 38 segment in Wilmington form Route 62 to Woburn City line, reduce traffic back-ups on entering side streets, improve the existing drainage system and provide increased safety for all roadway users. The project activities associated with the proposed roadway, intersections, traffic and drainage improvements were avoided and minimized to the maximum extent practicable; all unavoidable impacts required to achieve the project purpose will be mitigated in accordance with all applicable state and federal requirements as well as incorporation of best management restoration practices.

In order to offset the 2,806 square feet of permanent impacts to the vegetated wetlands, a wetland replication of approximately 3,510 square feet is proposed and will be located adjacent to Wetland E north of the intersection of Route 38 and the Textron Systems driveway in accordance with 310 CMR 10.55 (4)(b) provisions and MassDOT Specification 755.35, Inland Wetland Replication Area. The wetland replication area size, surface water elevation, configuration and location are all in compliance with the provisions listed in 310 CMR 10.55 (4)(b) provisions and MassDOT Specification 755.35, Inland Wetland Replication Area. After the erosion controls have been removed the affected wetland areas will be restored to preexisting conditions in accordance with the MassDOT Specifications 755.45, Wetland Restoration.

The proposed improvements under this project will permanently impact 262 square feet of LUW and temporarily impact 164 square feet of LUW associated with the Unnamed Intermittent Stream crossing the project limits at approximate Sta. 218+00. Dewatering and temporary bypass is associated with the culvert replacement. These impacts are associated with the replacement of the culvert at Sta. 218+00 (Culvert No. 1). The placement of natural streambed material is proposed within the culvert. Further, a layer of natural streambed material, 1.5 feet in depth, is proposed on top of rip rap placed at the culvert inlet and outlet for scour protection. Additionally, the placement of rip rap at a new drainage outfall will result in minor temporary impacts (31 square feet) to LUW near Maple Meadow Brook at approximate Sta. 252+40.

A portion of the project in the vicinity of Maple Meadow Brook is located within a 100-year floodplain with an established elevation of 82.9 feet upstream and 81.5 feet downstream (NAVD 88). The proposed project activities will occur within approximately 6,815 square feet of BLSF area due to the proposed full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and new drainage outfalls in select locations. The project overall will result in a net fill of 2,155 cubic feet, however, a compensatory flood storage area providing 4,161 cubic feet of storage was designed to compensate for the project's net fill as well as to provide a net cut across the project which will aid in the project's flood mitigation. The proposed flood storage compensation area will be located between Sta. 258+00 and Sta. 260+00 on the west side of Route 38 and will comply with the General Performance Standards presented in 310 CMR 10.57 (4)(a). The project is able to compensate for the entire project's flood storage loss and will result in an overall net cut of -2,007 CF.

Riverfront Area associated with Maple Meadow Brook extends over 86,013 square feet of the project area. The work proposed in the Riverfront Area includes full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and drainage improvements including new drainage outfalls in select locations. This work will take place in existing developed areas, and therefore should be considered as redevelopment. The project mostly alters previously disturbed and degraded Riverfront Area along Route 38, and within the limits of the project area, minimal space is present where improvements to the Riverfront Area could be realized. However, tree restoration, control of invasive species and loam and seed of disturbed areas are proposed where feasible.

Stormwater management improvements include construction of 1 aboveground infiltration basin and 2 subsurface infiltration systems to help mitigate the increase in peak rates and improve water quality. Proposed drainage improvements include deep sump catch basins with hoods, new drain manholes, and the replacement of existing drainage outfalls. Stormwater management for this project has been designed in compliance with the Stormwater Management Standards as outlined in 310 CMR 10.05(6)(k) through (q) and defined in detail in the DEP's Stormwater Management Handbook. The project has been designed to minimize the impacts to nearby resource areas from both the construction and operation of the proposed project. A full Stormwater Management Report documenting compliance with the DEP's Stormwater Management Standards, including required calculations and description of methodology, is attached as Appendix E to this report.

*2.4.2.2 Traffic*

The project proposes roadway, safety, and drainage improvements in order to provide safe multi-modal accommodations for all types of roadway users by taking a Complete Streets approach. The project aims

to reduce traffic congestion on this major connecting Route and in the surrounding area, and provide an alternative means of transportation in this segment of Route 38 in Wilmington through walking or biking. This project increases connectivity between commercial, industrial, residential areas, adjacent open space areas and the surrounding neighborhood. The proposed improved pedestrian and bicycle accessibility is expected to reduce traffic and congestion in the area.

The proposed roadway reconstruction is anticipated to improve the movements and safety of motorized vehicles, bicyclists, and pedestrians in this developed area of Wilmington. Bicycle access and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility. In addition, the proposed improvements will enhance the aesthetics of the Route 38 corridor, as such, promoting economic development for the Town of Wilmington.

The project aids in contributing to local and regional development strategies and goals, including the goal to provide opportunities for mobility locally and regionally with walking and biking trails, encouraging appropriate and desirable economic development by promoting a mix of compatible land uses, promoting the development of vibrant activity centers while maintaining a small-town feel, as well as improving internal vehicle circulation and pedestrian and bicycle mobility. Commercial, industrial, and population growth estimated in the near future can be accommodated by the improved Route 38, which includes what is considered to be the Town's shopping area. The new sidewalks, bicycle lanes/shoulders and improvements to intersections will enhance the safety of pedestrians and bicyclists, making this development consistent with the commitments in the Town's comprehensive land use plans.

Traffic control measures will be implemented throughout the corridor for construction activity. Existing signal timing at intersections will be adjusted to minimize delays as much as possible. A site-specific temporary traffic control setup will be implemented at critical locations where one-way alternating traffic is necessary to provide a safe work zone at the culvert replacement near Dublin Avenue and other utility relocations within the project limits. Flaggers and police officers are expected to be on-site directing traffic at active work zones. A temporary signal installed from an ongoing MassDOT project (#607327) at the intersection of Eames Street is expected to stay in place to implement any traffic detour as needed.

#### *2.4.2.3 Land Use*

The project will result in an overall increase of approximately 60,722 square feet in impervious area within the project limits. This is due to the realignment and minor widening of the roadway in select areas, and construction of approximately 14,500 linear feet of new sidewalks. These additions will improve driver, bicyclist, and pedestrian safety on Route 38 (Main Street). Although the project is increasing the impervious area within the project limits, the project also includes drainage system improvements, including proposing three infiltration Stormwater Control Measures (SCMs) to treat runoff and mitigate impacts from the increase in impervious area.

The land use surrounding the project site consists of a combination of commercial, impervious, developed open space, deciduous forest, evergreen forest, palustrine forested wetland and some bare land.

Wetlands exist on both sides of Route 38 immediately adjacent to the roadway for much of the project length. They are connected by existing culverts which cross the roadway at three locations in the northern portion of the project.

Although the several parks and/or conservation areas abut the project route (Legacy Park, Yentile Farm Recreational Facility, The Town Park Pumping Station water supply land, the Town of Wilmington Dog Park and the Middlesex Canal Historic and Archaeological District), only Legacy Park and a portion of the Town Park Pumping Station property, which does not include the Dog Park, are subject to Article 97 of the Amendments to the Constitution of the Commonwealth (further Article 97). There will be no disturbance to Legacy Park. And all disturbances along the Town Park Pumping Station property will be temporary in nature and will only require temporary easements. Therefore, the project will not trigger Article 97 Land Disposition, nor will it be converted to other inconsistent uses.

*2.4.2.4 Greenhouse Gas Emissions (GHG) and Air Quality*

The project is not subject to a mandatory EIR threshold under 301 CMR 11.03 so the MEPA GHG Policy does not apply. The project aims to reduce traffic congestion in the regions, and therefore will ideally reduce vehicle emissions in the area. The project does not include the construction of any buildings, and therefore associated building emissions will not occur as a result of the project. Overall, the emissions benefit will ideally reduce the existing air quality burden on the surrounding populations and therefore will not have an adverse impact on EJ or non-EJ populations due to air quality or GHG emissions.

*2.4.2.5 Noise*

The project is not expected to increase noise levels in the area. The goal of the project is to improve the existing corridor and provide safe accommodations and accessibility for pedestrian and bicyclist in the area, which will ideally reduce congestion and traffic. The construction will generate minor temporary noise impacts; however, these impacts are not expected to have disproportionate adverse effects to EJ populations. Additionally, this project is not a Type I action and does not require a noise assessment. Per MassDOT Type I and Type II Noise Abatement Policies and Procedures, § 3.0, it does not involve any of the following:

- The construction of a highway on a new location
- Alteration of an existing highway where there is either a substantial horizontal alteration or a substantial vertical alteration
- The addition of a through traffic lane(s)
- The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane
- The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange
- Restriping existing pavement for the purpose of adding a through traffic lane or an auxiliary lane
- The addition of a new or substantial alteration of a weigh station, rest stop, rideshare lot or toll plaza

Most of the proposed work will take place within the Route 38 corridor and adjacent intersections.

*2.4.2.6 Construction Period Impacts*

To protect the wetland resource areas during construction, a combination of erosion and sediment control BMPs will be installed as shown on the attached plan set. Primary erosion control techniques proposed include compost filter tubes, sedimentation fence barriers and floating silt fence. The Contractor will have a stockpile of materials required to control erosion on-site to be used to supplement or repair erosion control devices. These materials will include, but are not limited to, compost filter tubes, sedimentation

fence, site bags for catch basins, erosion control matting and crushed stone. The erosion controls will be maintained in good condition until on-site soils are stabilized. All areas will be permanently stabilized following the completion of construction work. The construction impacts will be restricted to the project site, and therefore construction traffic, air, and noise impacts to the surrounding area, including both EJ and non-EJ populations, are not anticipated.

The pedestrian and bicycle accommodations are expected to be similar to the existing conditions throughout the construction period. The Temporary Traffic Control Plan (TTCP) for this Project has been developed with a primary goal of preventing unnecessary delays to the motoring public. It is anticipated that up to half of the roadway will be closed to traffic during work hours of 9:00 AM – 3:30 PM on weekdays on Route 38 and on intersecting streets within the project limit with a one-lane alternating traffic pattern. Minimum travel lane widths of 11 feet or existing width will be maintained. Any work that is to occur during peak traffic hours (7:00 AM to 9:00 AM and 3:30 PM to 6:00 PM) or during overnight hours (including the locations indicated previously) would require approval by the Town of Wilmington. Work that impacts existing travel lanes would be restricted to off-peak traffic hours. Work would not occur on Saturdays, Sundays or holidays, or on the day before or the day after a long weekend which involves a holiday without prior approval by the Town and MassDOT.

The proposed traffic mitigation measures to limit impacts to traffic include: night work and staged construction on Route 38; restricting the amount of work during peak hours; and limiting work area/length during a typical work day to ensure the contractor is able to begin and complete a segment of roadway/intersection work so that normal traffic operation can be restored at the end of each work day or work night.

### *2.4.3 Project Benefits*

The project proposes roadway, safety, and drainage improvements in order to provide safe multi-modal accommodations for all types of roadway users by taking a Complete Streets approach while minimizing the impacts to water resources and providing drainage improvements that will enhance the quality of the stormwater runoff. As a whole, the project expected to have a number of benefits to the Town of Wilmington and the nearby communities as it will promote economic development, reduce traffic congestion on this major connecting Route and in the surrounding area, and provide an alternative means of transportation in this segment of Route 38 in Wilmington through walking or biking. This project increases connectivity between commercial, industrial, residential areas, adjacent open space areas and the surrounding neighborhood. The proposed improved pedestrian and bicycle accessibility is expected to reduce traffic and congestion in the area.

Another one of the project benefits is that it aids in contributing to local and regional development strategies and goals, including the goal to provide opportunities for mobility locally and regionally with walking and biking trails, encouraging appropriate and desirable economic development by promoting a mix of compatible land uses, promoting the development of vibrant activity centers while maintaining a small-town feel as well as improving internal vehicle circulation and pedestrian and bicycle mobility. Protection of water resources and preserving open space are also key community goals. Commercial, industrial, and population growth estimated in the near future can be accommodated by the improved Route 38, which includes what is considered to be the Town's shopping area. The new sidewalks, bicycle lanes/shoulders and improvements to intersections will enhance the safety of pedestrians and bicyclists, making this development consistent with the commitments in the Town's comprehensive land use plans.

The proposed roadway reconstruction is anticipated to improve the movements and safety of motorized vehicles, bicyclists, and pedestrians in this developed area of Wilmington. Bicycle access and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility. In addition, the proposed improvements will enhance the aesthetics of the Route 38 corridor, as such, promoting economic development for the Town of Wilmington.

Overall, the project is anticipated to provide benefits to the surrounding EJ populations through increasing accessibility in the area, promote economic development, provide improved opportunity for outdoor use of the corridor and access to nearby recreation areas, reduce traffic congestion in the surrounding area, and provide an alternative means of transportation through walking or biking. Through various improvements to the built environment proposed under the scope of this project, it is anticipated that this project will result in an overall improvement of public health and safety within the surrounding community as a whole.

### *2.4.4 Environmental Benefits*

The project will also have several beneficial impacts to the surrounding environment, including a wetland replication area, wetland restoration, and flood storage compensation; areas of tree restoration, control of invasive plants; stormwater management practices; drainage improvements; scour countermeasures, bank stabilization, and streambed restoration measures; as well as opportunity to reduce traffic and vehicle usage by improved bicycle and pedestrian facilities and safety. These benefits will not only offset any potential environmental impacts from the project but will provide an overall improvement over existing conditions to the project area.

A wetland replication area totaling approximately 3,510 square feet is proposed and will be located adjacent to Wetland E north of the intersection of Route 38 and the Textron Systems driveway in accordance with 310 CMR 10.55 (4)(b) provisions and MassDOT Specification 755.35, Inland Wetland Replication Area. The wetland replication area size, surface water elevation, configuration and location are all in compliance with the provisions listed in 310 CMR 10.55 (4)(b) provisions and MassDOT Specification 755.35, Inland Wetland Replication Area. Additional temporary impacts due to erosion and sediment controls to BVW will be restored in place. After the erosion controls have been removed the BVWs will be restored to preexisting conditions in accordance with the MassDOT Specifications. 755.45, Wetland Restoration.

A compensatory flood storage area providing 4,161 cubic feet of storage was designed to compensate for the project's net fill of approximately 2,155 cubic feet. The compensatory flood storage has been designed to exceed the project's net fill in order to provide a net cut across the project which will aid in the project's flood mitigation. The proposed flood storage compensation area will be located between Sta. 258+00 and Sta. 260+00 on the west side of Route 38 and must comply with the General Performance Standards presented in 310 CMR 10.57 (4)(a). The proposed flood storage area is hydrologically connected to the affected floodplain and will provide flood storage compensation on a foot-by-foot basis. In order to protect the large trees on the site, the cut will be predominantly excavated at the 82-foot contour, which still results in an overall incremental net cut. The project is able to compensate for the entire project's flood storage loss and will result in an overall net cut of -2,007 CF.

Stormwater management improvements include construction of 1 aboveground infiltration basin and 2 subsurface infiltration systems to help mitigate the increase in peak rates. Proposed drainage

improvements include deep sump catch basins with hoods, new drain manholes, and the replacement of existing drainage outfalls.

This project is intended to provide improvements to bikers and pedestrians that can be utilized for recreation or for short-range trips to businesses or other destinations along the Route 38 corridor. The project mostly alters previously disturbed and degraded Riverfront Area, and within the limits of the project area, minimal space is present where improvements to the Riverfront Area could be realized. However, tree restoration, control of invasive species and loam and seed of disturbed areas are proposed where feasible.

As discussed above, this project will result in a variety of environmental and ecosystem benefit which is intended to have a positive impact on the neighboring EJ communities by providing safer corridor and improved opportunities for all roadway users.

### *2.4.5 No Disproportionate Adverse Effects*

Overall, the project goal is to improve the roadway infrastructure, safety and accessibility along Route 38 segment in Wilmington form Route 62 to Woburn City line. It has been a priority of the project to minimize potential adverse impacts to EJ populations in the neighboring communities of Woburn and Burlington. The EJ populations surrounding the project area are not likely to be negatively impacted by the project because of the following considerations:

- The project will not exacerbate pre-existing conditions related to air, water, or soil pollution;
- It will improve the quality of stormwater runoff compared to existing conditions;
- It will include wetland restoration and ecosystem benefits;
- It will comply with all regulations related to air quality;
- And it will provide public realm improvements including improved safety for pedestrians and bicycles and increased outdoor recreation opportunities.

## 2.5 PUBLIC HEALTH

In accordance with 310 CMR 11.00, this report also assesses the potential public health impacts and mitigation measures. As stated previously, the project is expected to have a number of benefits to the surrounding community as it will promote economic development, provide improved opportunity for outdoor use of the corridor and access to nearby recreation areas, reduce traffic congestion in the surrounding area, and provide an alternative means of transportation through walking or biking. Through various improvements to the built environment proposed under the scope of this project, it is anticipated that this project will result in an overall improvement of public health and safety within the surrounding community.

## 2.6 PLANNED OUTREACH/PUBLIC INVOLVEMENT

The project team will continue to hold meetings with state and local agencies as well as the general public and local community as the project progresses. The proponent and the project team will continue to notify the public of project updates and continue advertising legal ads in two languages through the process. Additionally, a MEPA site visit that will be made available to the public, with the option to request interpretation services prior to the meeting.

Project coordination with the public will continue with information made available on MassDOT Website and on MassDOT Website and on MEPA Website. In addition, the project team has developed a MEPA Fact Sheet with project details, which will be posted on the municipal websites (Wilmington, Woburn and Burlington). A hard copy of both this EENF and the Proposed EIR in English will be available for review in the Town of Wilmington Public Library. The MEPA Fact Sheet will be distributed at the time of the EENF and EIR filing. The Proponent is committed to continue to inform the public about the project and its status during the review of the EENF and EIR and after the review is completed.

## 3.0 TRAFFIC AND TRANSPORTATION

The findings from the Functional Design Report (FDR) prepared for Route 38 in the Town of Wilmington analyze safety and capacity concerns along the corridor and at specific intersections.

The project consists of a 2.1-mile section of Route 38 (Main Street) located in the Town of Wilmington from Route 62 (Burlington Avenue/Church Street) southerly to the Woburn city line. The roadway also provides access to many residential side streets. Five intersections were studied as part of this project:

- Route 38 (Main Street) at Route 62 (Burlington Avenue/Church Street) (signalized)
- Route 38 (Main Street) at Route 129 (Lowell Street) (signalized)
- Route 38 (Main Street) at Cross Street/Butters Row (unsignalized)
- Route 38 (Main Street) at Eames Street (unsignalized)
- Route 129 (Lowell Street) at Cross Street (unsignalized; traffic volume review only)

Route 38 is classified as an urban principal arterial and is owned and maintained by the Massachusetts Department of Transportation (MassDOT). The roadway provides north-south movements, providing connections to Tewksbury and Lowell north of the project limits and to Woburn and I-95 south of the project limits. Various commercial and some industrial properties and residences lie along Route 38 proper. The roadway also provides access to many residential side streets. The proposed geometric improvements at these segments will improve safety and comfort for users at these intersections and along the Route 38 corridor within the project limits.

The existing traffic volumes were recorded and the crash data for safety analysis was obtained from MassDOT and the Town of Wilmington.

The proposed design for Route 38 consists of a mostly continuous cross-section with improved bicycle and pedestrian accommodations. Existing lane, painted median, and shoulder widths are variable along the corridor, sidewalks are occasionally substandard or non-existent, and bicycle accommodations are substandard. Overall, the proposed cross-section along each direction of Route 38 consists of a single 11-foot-wide travel lane, a five-foot-wide bicycle lane, curbing, and a five-foot-wide sidewalk.

The pavement along the Route 38 corridor within the project limits and north of the intersection with Eames Street is proposed to undergo full-depth reconstruction due to the following required underground construction work:

- Extensive utility trenching necessitated by the replacement of the water main between the Route 62 and Eames Street intersections
- Replacement of the sewer main between the Route 129 (Lowell Street) and Cross Street/Butters Row intersections
- Installation of a closed drainage system along the entire project length

The segment of Route 38, Bridge No. W-38-002 over the MBTA Commuter Rail, located approximately 2,300 feet south of the intersection with Butters Row/Cross Street is being replaced as part of a separate project. Construction has begun in 2024.

The Temporary Traffic Control Plan (TTCP) for this Project has been developed with a primary goal of preventing unnecessary delays to the motoring public. It is anticipated that up to half of the roadway will

be closed to traffic during work hours of 9:00 AM – 3:30 PM on weekdays on Route 38 and on intersecting streets within the project limit with a one-lane alternating traffic pattern. Minimum travel lane widths of 11 feet or existing width will be maintained. Any work that is to occur during peak traffic hours (7:00 AM to 9:00 AM and 3:30 PM to 6:00 PM) or during overnight hours (including the locations indicated previously) would require approval by the Town of Wilmington. Work that impacts existing travel lanes would be restricted to off-peak traffic hours. Work would not occur on Saturdays, Sundays or holidays, or on the day before or the day after a long weekend which involves a holiday without prior approval by the Town and MassDOT.

This project does not trigger any transportation section review thresholds related to traffic generation, roadways, or other transportation facilities listed in 301 CMR 11.03(6).

## 4.0 ALTERNATIVES ANALYSIS

Incompliance with MEPA regulations 301 CMR 11.07(6)(f) this section provides a description and analysis of alternatives to the project.

The purpose of this project is to provide safety enhancements along the Route 38 corridor in Wilmington for drivers and bicyclists, to promote improved flow of traffic, and to address drainage issues at various locations within a project segment. The corridor currently does not provide sufficient bicycle and pedestrian facilities. Pedestrian accommodations are limited to specific areas, and existing sidewalks are substandard, often failing to meet ADA/AAB requirements. Cyclists must either share vehicle lanes or use sidewalks, creating safety concerns. To comply with MassDOT's Healthy Transportation Policy, the project must include compliant sidewalks and bicycle facilities.

A Road Safety Audit (RSA) conducted on January 26, 2017, highlighted key safety concerns, including:

- Faded or improper pavement markings.
- Substandard pedestrian and bicycle accommodations.
- Intersection geometry deficiencies.
- Inefficient signage and signal equipment.
- Access management issues.
- Ineffective drainage.

The crash rate along Route 38 exceeds the Massachusetts statewide average. Angle crashes dominate at several intersections, including:

- Route 38 at Butters Row/Cross Street: 69% angle crashes.
- Route 38 at Route 62: 48% angle crashes.
- Route 38 at Route 129: 46% angle crashes.
- Route 38 at Eames Street: 29% angle and 29% rear-end crashes.

The project aims to:

- Enhance roadway infrastructure.
- Reduce traffic congestion on entering side streets.
- Improve drainage systems.
- Increase safety for all roadway users.
- Provide adequate multimodal accommodations along the Route 38 corridor in Wilmington.

The proposed section of Reconstruction of Route 38 is designed with safety as a top priority. Many of the features evaluated impact multiple locations throughout the entire corridor and a preferred/compromised alternative was selected to reduce impacts on private properties and environmentally sensitive areas. The "*No-Build Alternative*" was dismissed as it fails to meet the project's purpose and need by not improving safety, operations, or multimodal accommodations.

The following section describes the alternatives for the major design features along the proposed Route 38 improvements that were analyzed and considered during the design process. Two alternatives were evaluated for each design feature: meet the policy requirements and compromised option. Many of the features evaluated impact multiple locations throughout the entire corridor and a preferred/compromised alternative was selected to reduce impacts on private properties and environmentally sensitive areas.

*Design Alternative – Pedestrian Accommodation*

Policy Requirements: MassDOT's Healthy Transportation Policy requires 5-foot-wide sidewalks on both sides in urbanized areas.

Challenges: Installing sidewalks on both sides would:

- Significantly impact right-of-way (ROW), wetlands, and utilities.
- Increase costs and affect adjacent property owners.
- Trigger increased project impacts including over 4,000 sq. ft. of ROW impact, 500 sq. ft. of wetland impact, and the relocation of 20 utility poles.

Preferred Design: Sidewalks will be placed only on the west side between Station 248+25 to Station 314+25 serving residential areas and public parks, minimizing impacts on wetlands and utility infrastructure. The east side, which is primarily wooded and industrial areas, will not include sidewalks. A design exception was requested and approved by MassDOT for this modification.

*Design feature – Bicycle Accommodation*

Policy Requirements: MassDOT Design Guide requires bicycle accommodation for projects in urbanized areas and provides a separated bicycle facility.

Challenges: Installing bicycle lanes on both sides would trigger:

Two locations within the project limits that cannot meet the minimum bicycle accommodation using a 5-foot shoulder due to space constraints.

1. West Side of Route 38 (Northern Project Limits to Route 62):
   - A 2-foot shoulder is proposed to reduce congestion and accommodate a new left-turn lane.
   - Expanding to 5 feet would require reconstructing a retaining wall, impacting businesses and properties.
2. West Side of Route 38 (1,200 Feet South of Route 62):
   - A 2-foot shoulder is proposed to maintain MBTA track clearance and minimize impacts on utility infrastructure.

Preferred Design: Shoulder width is reduced to 2 feet in constrained areas while maintaining a 5-foot width shoulder elsewhere within the project limits to serve as a bicycle lane. A design exception was requested and approved by MassDOT for this modification.

*Design feature – Roadway Lane Configuration*

Policy Requirements: MassDOT's standard for NHS Non-Freeway roadways is 12-foot travel lanes and 8-foot shoulders.

Challenges: Meeting this standard 12-foot travel lane and 8-foot shoulders would require:

- Additional 8 feet of roadway widening.
- Additional 200 sq. ft. of wetland impact.
- Additional 16 tree removal.
- Eliminate the flat bench under the guardrail and require deep posts.

- Stone/Riprap embankment required to achieve 1H:1.5V slope at Station 237+25 RT to Station 241+00 RT and Station 248+25 LT to Station 255+00 LT to tie in with existing ground.
- Requires additional permanent wetland impacts of 3,565 square feet and temporary impacts from erosion and sediment controls of 2,653 square feet.
- Impacts on MBTA platforms, retaining walls, utility pole relocations, and electrical towers.

Preferred Design: Reduced travel lane width to 11-foot travel lanes and 5-foot shoulders. Additional reductions in shoulder widths in constrained areas to also required to minimize ROW impacts. A design exception request was submitted and approved, confirming that the proposed design meets all applicable MassDOT criteria for similar roadways.

*Design feature – Horizontal Alignment*

Policy Requirements: Horizontal curves must meet a minimum length of 15 times the design speed.

*Challenges*: Eight curves within the project do not meet these requirements. Lengthening curves to meet policy requirements would require:

- Land taken from 11 properties.
- Increase wetland impacts by 1,300 sq. ft.
- Bridge and retaining wall reconstructions from shifted roadway alignment.

*Preferred Design*: Horizontal curves were optimized for safety without fully meeting the design standard. A design exception was requested and approved by MassDOT to use optimized horizontal curves that do not meet minimum length requirements given the lack of crash history and constrained by existing features.

Design feature – Vertical Alignment

Policy Requirements: MassDOT requires crest and sag curves to meet specific K values to meet sight distance requirements.

Challenges: Meeting K values would require:

- Lowering or raising the roadway significantly.
- Rebuilding retaining walls.
- Hydraulic opening of existing culverts and headwalls.
- Introduces new high/low points that may require new retaining walls.
- Driveways would be steeper than the existing grade if the profile is raised.
- Minimum cover for underground utilities.
- Extending the limit of grading.

Preferred Design: Vertical curves were optimized for safety without fully meeting the design standard. A design exception was requested and approved by MassDOT to use optimized vertical curves that do not meet minimum K value requirements without major impacts on private properties.

*Stormwater Alternatives Analysis*

The entire project corridor was analyzed for potential SCMs. The SCM alternatives and feasibility analysis was focused at each of discharge points, including the system that discharges to Maple Meadow Brook. The SCMs considered along the project corridor include water quality swales, infiltration trenches, subsurface

chamber systems, qualified pervious areas, and leaching basins. The following is a summary of all the areas and SCMs that were considered, as well as a description of whether an SCM was feasible or not:

- Gutter flow away from project site at DP-1, Sta. 203: No SCM feasible due to limited ROW and adjacent private properties.
- Gutter flow away from project site at DP-2, Sta. 11: No SCM feasible due to limited ROW and adjacent private properties.
- Closed drainage system outfall to DP-4 at Wetland A near an existing outfall and the outlet of the 3.5'x1.5' box culvert, Sta. 217+75 (L): No SCM feasible due to presence of existing resource areas, limited ROW, and adjacent private properties.
- Closed drainage system outfall at DP-5 to the Wetland southwest of the tracks beyond the project limits, Sta. 104 (R): This area consists mostly of woodland area alongside the train tracks on the western side of Route 38. No SCM feasible due to limited ROW and presence of existing train tracks.
- Overland flow to upstream end of existing box culvert at DP-6, Sta. 218 (R): No SCM feasible due to limited ROW and presence of existing train tracks.
- Gutter flow and closed drainage system to DP-7 at Wetland D, Sta. 238+50 (L): No SCM feasible due to Wetland D directly abutting the roadway and adjacent private property.
- Closed drainage system outfall to DP-8 at Wetland C, Sta. 238+50 (R): No SCM feasible due to Wetland C directly abutting the roadway.
- Closed drainage system at DP-9 to Wetland E, Sta. 250 (L): No SCM feasible due to Wetland E directly abutting the roadway.
- Overland flow to DP-10 at Wetland G, Sta. 253+75 (R): No SCM feasible due to Wetland G directly abutting the roadway.
- Overland flow to DP-11 at Wetland I, Sta. 258 (L): No SCM feasible due to limited ROW and adjacent private properties.
- Overland flow to DP-13, Sta. 275+75 (L): No SCM feasible due to limited ROW and adjacent private properties.
- Closed drainage system outfall at DP-14, Sta. 275+75 (R): One SCM is feasible in this location, a subsurface infiltration basin (SCM-1). Stormwater runoff from this area travels via gutter flow, which enters a closed drainage system that is pretreated by isolator rows, then captured and treated by the subsurface infiltration system.
- Country drainage to wooded depression area at DP-15, Sta. 285+70 (L): No SCM feasible due to limited ROW and adjacent private properties.
- Country drainage to wooded depression area at DP-16, Sta. 290+30 (L): No SCM feasible due to limited ROW and adjacent private properties.
- Overland flow to DP-17, Sta. 285+60 (R): No SCM feasible due to limited ROW and adjacent private properties.
- Closed drainage system outfall at DP-18, Sta. 304 (R): One SCM is feasible in this location. The closed drainage system discharges to an infiltration basin (SCM-2) that has a sediment forebay for pretreatment. The infiltration basin has an outlet control structure that connects back into the closed drainage system within Route 38.
- Closed drainage system outfall at DP-20, Sta. 318 +75 (L): One SCM is feasible in this location, a subsurface infiltration system (SCM-3). Stormwater runoff from this area travels via a combination of overland flow and gutter flow into a closed drainage system. The closed drainage system outlets to a subsurface infiltration system (SCM-3) that is pretreated by isolator rows.
- Overland flow to vegetated area at DP-21, Sta. 316+50 (L): No SCM feasible due to limited ROW and adjacent private properties.

# 5.0 ENVIRONMENTAL RESOURCES

This section discusses the existing and proposed conditions of environmental resources in and around the project site. These environmental resources include wetland resource areas, land use, and stormwater and impervious surfaces.

The project site is not located within an area designated as a Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife by the Natural Heritage & Endangered Species Program (NHESP) 2021 Maps The Certified Vernal Pool (CVP# 2795) is located in close proximity to and south of the PVP described above, approximately 150 feet southwest of Route 38 and 550 feet south of Burlington Avenue. Another PVP #29103 is located northwest of the intersection of Route 38 and Cook Avenue, approximately 100 feet west of Route 38 and is within Wetland H; however, project activities are not expected to negatively affect these vernal pools or their designated buffer zones.

## 5.1 WETLAND RESOURCES

This section discusses the existing and proposed conditions of environmental resources in and around the project site. These environmental resources include wetland resource areas, land use, and stormwater and impervious surfaces.

### *5.1.1 Regulatory Framework*

Massachusetts Wetlands Protection Act (WPA)

Wetlands are regulated under the Massachusetts Wetlands Protection Act (WPA) Regulations and its implementing regulations 310 CMR 10.00, which are administered under a local level by the municipality's conservation commission. Work within a wetland resource or within 100-feet of a wetland resource requires a Notice of Intent (NOI) to the local conservation commission. After review of the NOI, the conservation commission will send out an Order of Conditions that contains conditions to protect public interests. According to the Massachusetts WPA, state-regulated wetlands include freshwater wetlands. Wetland Resource Areas, as defined in the Massachusetts WPA include these inland resource areas:

- Inland Bank
- Bordering Vegetated Wetlands (BVW)
- Land Under Waterbodies and Waterways (LUW)
- Bordering Land Subject to Flooding (BLSF)
- Riverfront Area (RA)

As stated in 310 CMR 10.05(4)(b), projects proposed by the MassDOT Highway Division are not subject to local wetlands bylaws or regulations and do not require individual abutter notification. As a state agency, MassDOT must provide notice of the time and place of the Notice of Intent hearing in a newspaper of general circulation in the Town.

Therefore, a Notice of Intent (NOI) is being submitted to the Wilmington Conservation Commission pursuant to the Massachusetts Wetlands Protection Act (WPA) and its implementing regulations 310 CMR 10.00 for work within the Bordering Vegetated Wetland (BVW), the Land Under Water (LUW), the 100-foot Buffer Zone, the Bordering Land Subject to Flooding (BLSF), Bank and within the Riverfront Area and pursuant to the Town of Wilmington local Wetlands and Rivers Protection Regulation.

Section 401 of the Clean Water Act Water Quality Certification (WQC)

The proposed work within Waters of the United States requires a Section 401 Water Quality Certification for Major Fill and Excavation Projects pursuant to 314 CMR 9.04(1) since the project will result in more than 5,000 square feet cumulatively of temporary and permanent impacts to Bordering Vegetated Wetland and Land Under Water, areas subject to 310 CMR 10.00: Wetlands Protection which is also subject to 33 U.S.C. §1251 et seq. (1972), The Clean Water Act (CWA).

The volume of dredging associated with replacement of the Unnamed Intermittent Stream Culvert at Sta. 218 near Dublin Ave does not exceed 100 cubic yards. The Joint Application for 401 Water Quality Certification (WQC) and 404 ACOE Pre-Construction Notification (PCN) was filed with MassDEP and ACOE.

Section 404 of the Clean Water Act (CWA) Massachusetts Regional General Permit

The proposed work under this project involves discharge of the fill materials within the Waters of the United States under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and Section 404 of the Clean Water Act. A filing of a Pre-Construction Notification (PCN) Form in accordance with Section 404 with the U.S. Army Corps of Engineers under GP 23 will also occur concurrently with the Section 401 WQC filing.

### *5.1.2 Existing Conditions*

A delineation of the wetland boundaries in the vicinity of the Route 38 project site was completed by Lucas Environmental on May 21-22, 2020, and December 3, 2020. The site was revisited on June 6, 2023, to review and update the wetland delineation based on current site conditions at that time. The wetland resource area boundary delineations were conducted in accordance with the methodology outlined in the Regulations 310 CMR 10.55 and the DEP handbook Delineating Bordering Vegetated Wetlands Under Massachusetts Wetlands Protection Act. Hydrophytic vegetation identification/documentation was based upon the US Fish and Wildlife Service National List of Plant Species That Occur in Wetlands, as well as all plant species listed in the Act. Wetland hydrology includes hydric soils, which were determined based upon the interagency document Field Indicators for Identifying Hydric Soils in New England. This methodology is consistent with the three-parameter approach required for the delineation of federal wetlands as outlined in the Corps of Engineers Wetland Delineation Manual. There is one (1) perennial stream (Maple Meadow Brook) and one (1) Unnamed Intermittent Stream crossing Route 38 within the project segment between Route 62 and the Woburn City Line. The wetlands are identified as Wetlands "A" through "J" and are depicted on Figure 3, Protected Resource Areas Map, and are described in further detail in Appendix A.

### *5.1.3 Assessment of Impacts*

There are direct impacts to wetland resource areas associated with the project, which exceed the thresholds described in 301 CMR 11.03(3)(b)1(d) for alteration of 5,000 or more sf of bordering or isolated vegetated wetlands and 301 CMR 11.03 (3)(b)(1)(f) for alteration of ½ or more acres of any other wetland. These impacts resulting from the project are associated with the full depth pavement reconstruction and minor widening of the roadway, the construction of new sidewalks in select areas, raising the profile of Route 38 to tie into the realigned Butters Row, culvert replacement/extension work, replacement of the existing highway guardrails, as well as various drainage improvements and construction of new drainage outfalls at multiple discharge points, discharging into resource areas, as shown on the Resource Area Impact Plans included in Attachment E.

In addition to the minimum control measures included in the plan set, a Stormwater Pollution Prevention Plan (SWPPP) for construction activities will be prepared by the Contractor for the site in compliance with the EPA's Construction General Permit. It will include measures to minimize exposed soil areas through sequencing and temporary stabilization and establish a permanent vegetative cover or other forms of stabilization as soon as practicable.

The quantified impacts to each wetland resource areas as well as the project's regulatory compliance will be discussed in detail in the following section.

### *5.1.4 Regulatory Compliance*

Massachusetts Wetlands Protection Act (WPA)

Pursuant to 310 CMR 10.53(3), the project has been designed to avoid wetland resource area impacts to the maximum extent practicable and will mitigate unavoidable resource area impacts in accordance with state regulations. Since the proposed project qualifies as a limited project, it will meet the performance standards for each resource area to the maximum extent practicable. Replication and restoration of the impacted resource areas are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40. Mitigation Area will be constructed to meet the requirements of permits and certifications including relevant performance standards of the Massachusetts Wetlands Protection Act (MGL C. 131, s40) and U.S. Army Corps of Engineers.

**Bordering Vegetated Wetlands (BVWs)**

There are BVW areas within and adjacent to the project limits. The project results in permanent and temporary impacts to the following wetland areas along the project corridor, as described in Table 5.1 below.

*Table 5.1: BVW Impacts*

| Wetland Area Series (STA. #) | Permanent Impacts ($ft^2$)* | Temporary Impacts ($ft^2$)* |
|---|---|---|
| BVW A (STA 218+00 East)<br>Flags WFA-series | 192 | 142 |
| BVW C (STA 237+40 - 241+00 West)<br>Flags WFC-series | 2,315 | 1,443 |
| BVW D (STA 236+00 - 240+00 East)<br>Flags WFD-series | 270 | 655 |
| BVW E (STA 248+00 – 256+50 east)<br>Flags WFE- series | 29 | 89 |
| **Total** | **2,806** | **2,329** |

*see Resource Area Impact Plans in Attachment I

The direct impacts to 2,806 square feet of BVWs cannot be avoided due to the roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, replacement of the culvert at Sta. 218+00 and extension of the culvert at Sta. 238+50, new drainage outfalls in select locations, raising the profile of Route 38 to tie into the realigned Butters Row, and associated regrading in the vicinity of the wetland areas.

The proposed improvements to the drainage system will result in enhanced quality of the runoff that will, in turn, result in improved water quality (surface and ground), prevention of pollution and storm damage. There are no fisheries, land containing shellfish or wildlife habitat located within or in close proximity to the project area, therefore the project will not negatively impact these interests of the WPA.

Temporary disturbance to BVW (2,329 square feet) will be required for installation of Erosion & Sediment Control BMPs in project areas directly adjacent to or within the BVW itself for areas where the project limits directly adjoin or overlap with BVWs. Additional minor temporary impacts to BVW include the installation of utility pole guy wire anchors at select locations. After the erosion controls have been removed, the BVWs will be restored to preexisting conditions in accordance with the MassDOT Specification 755.45, Wetland Restoration.

The proposed work will comply with General Performance Standards in accordance with 310 CMR 10.55 (4)(b), (d) and (e). The 310 CMR 10.55 (4)(c) Standard does not apply to this project as the impacts are more than 500 square feet.

In compliance with 310 CMR 10.55 (4)(d), the proposed project will not have any "*… adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59*." The project site is not located within an area designated as Priority or Estimated Habitat of Rare Species by the Natural Heritage & Endangered Species Program (NHESP) 2021 Maps. There is one Certified Vernal Pool and two Potential Vernal Pools located adjacent to the Route 38 project corridor, however the project activities do not extend into these vernal pools (see Figure 3).

In compliance with 310 CMR 10.55 (4)(e), the proposed project is not located within an Area of Critical Environmental Concern (ACEC), therefore, proposed work will "*not destroy or otherwise impair any portion of a Bordering Vegetated Wetland that is within an Area of Critical Environmental Concern designated by the Secretary of Energy and Environmental Affairs under M.G.L. c. 21A, § 2(7) and 301 CMR 12.00: Areas of Critical Environmental Concern*."

A wetland replication area totaling approximately 3,510 square feet is proposed and designed in accordance with *310 CMR 10.55 (4)(b)* provisions, as summarized below:

1. *Replacement areas (replication areas) must be equal in total size to lost BVW area;*

As shown on the plans accompanying this Notice of Intent, the proposed wetland replication area north of the intersection of Route 38 and the Textron Systems driveway has an area of approximately 3,510 square feet, which is greater than the 2,806 square feet wetland area that will be permanently impacted by the project activities.

2. *The surface/ground water elevations of the replacement must approximate those that characterized the lost BVW areas;*

The replication area proposed north of the intersection of Route 38 and the Textron Systems driveway will be connected to Wetland E and will be at the same elevation as Wetland E.

3. *Replication areas are to be configured and located, with respect to inland bank, in a similar manner as was the case for lost BVW areas;*

The overall horizontal configuration and location of the replacement area with respect to the bank are similar to the lost areas.

4. *Replication areas must have an unrestricted hydraulic connection to the same waterways and/or waterbodies as the lost areas;*

The replication area proposed north of the intersection of Route 38 and the Textron Systems driveway is adjacent to Wetland E and hydrologically connected to all wetlands being impacted by the proposed project.

5. *Replication areas are to be located within the same reach of waterway or general areas of waterbody, as lost BVW areas;*

The replication area is generally located within the same reach of waterway as the lost BVW areas.

6. *In the replication areas, indigenous plant species shall be used to reestablish the vegetation cover of the new BVW areas such that a 75% cover of these areas is attained within two (2) growing seasons. During the period of reestablishment, any exposed soil must be stabilized in accordance with U.S. Soil Conservation Service methods;*

Indigenous plant species are proposed to reestablish vegetation, as shown on the plans. Any exposed soil will be stabilized in accordance with U.S. Soil Conservation Service methods.

7. *General Performance Standards for BVW areas must be addressed in a manner consistent with those of other resource areas described in 310 CMR 10.*

The proposed work will comply with General Performance Standards to BVW areas.

**Land Under Water Bodies and Waterways (LUW)**

General Performance Standards for Land Under Water Bodies and Waterways (LUW), as presented in 310 CMR 10.56(4), allow work in LUW that will not impair the water carrying capacity of the existing channel, nor ground water and surface water quality, nor the capacity of the LUW to provide breeding habitat, escape cover, or food for fisheries. The work also may not impair the capacity of the LUW to provide important wildlife functions. The regulations provide that the capacity of LUW to provide important wildlife functions is deemed to be unimpaired so long as less than ten (10) percent of the area of LUW significant to protection of wildlife habitat, or 5,000 square feet of LUW (whichever is less) is cumulatively altered.

There is one perennial stream within or adjacent to the project area, Maple Meadow Brook. There is also an Unnamed Intermittent Stream crossing the project limits at approximate Sta. 218+00 near Dublin Avenue. One (1) culvert at Sta 218+00 within WPA jurisdiction is being replaced as part of this project.

Permanent and temporary impacts to LUW are described in Table 5.2 below: Table 5.2: LUW Impacts

| Resource Area | Permanent Impacts ($ft^2$)* | Temporary Impacts ($ft^2$)* |
|---|---|---|
| Unnamed Intermittent Stream #1<br>Flags BF1-100 series (STA. 218+00 East)<br>Flags BF1-200 series (STA. 218+00 West) | 262 | 164 |
| Maple Meadow Brook<br>Flags BF #2-200 series<br>(STA 252+40 Northeast) | 0 | 31 |
| **Total** | **262** | **195** |

*see Resource Area Impact Plans in Attachment I

The proposed project activities will permanently impact 262 square feet of LUW and temporarily impact 164 square feet of LUW associated with the Unnamed Intermittent Stream crossing the project limits at approximate Sta. 218+00. Dewatering and temporary bypass is associated with the culvert replacement. These impacts are due to the replacement of the culvert at Sta. 218+00 (Culvert No. 1) which includes the installation of natural streambed material as well as rip rap at the culvert inlet and outlet for scour protection. Additionally, the placement of rip rap at a new drainage outfall will result in minor temporary impacts (31 square feet) to LUW near Maple Meadow Brook at approximate Sta. 252+40.

**Bank**

The proposed project activities will permanently impact 64 linear feet of bank associated with the Unnamed Intermittent Stream crossing the project limits at approximate Sta. 218+00. These activities consist of the replacement of the culvert at Sta. 218+00 which includes construction of the concrete headwalls, as well as the placement of rip rap at the culvert inlet and outlet for scour protection. Temporary disturbance to Bank (15 linear feet) will be required for installation of Erosion & Sediment Control BMPs. The permanent and temporary impacts to the Bank are summarized in Table 5.3 below:

*Table 5.3: Impacts to Bank*

| Bank (STA. #) | Permanent Impacts (LF)* | Temporary Impacts (LF)* |
|---|---|---|
| Unnamed Intermittent Stream #1<br>Flags BF1-100 series (STA. 218+00 East) | 37 | 0 |
| Unnamed Intermittent Stream #1<br>Flags BF1-200 series (STA. 218+00 West) | 27 | 0 |
| Maple Meadow Brook **<br>BF #2-200 series (STA 252+40 Northeast) | 0 | 15 |
| **Total** | **64** | **15** |

*see Resource Area Impact Plans in Attachment I

General Performance Standards for Inland Bank, as presented in 310 CMR 10.54(4), allow work on a Bank that will not impair its physical stability, the water carrying capacity of the existing channel within the Bank, or ground water and surface water quality. Such work also must not impair the capacity of the Bank to provide breeding habitat, escape cover, or food for fisheries; nor may the work impair the capacity of the Bank to provide important wildlife functions. A Bank's capacity to provide important wildlife functions is deemed to be unimpaired so long as less than ten (10) percent of the length of the Bank, or 50 feet of the Bank (whichever is less) is cumulatively altered.

Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.

The WPA regulations require, in part, that wildlife habitat evaluations be conducted when a proposed project will alter Inland Bank, Land Under Water ("LUW"), Riverfront Area ("RFA"), or Land Subject to Flooding ("BLSF" or "ILSF") beyond the thresholds permitted under 310 CMR 10.54(4)(a)5., 10.56(4)(a)4., 10.57(4)(a)3., and 10.58(4)(d)1. The proposed work under this project will alter combined 67 linear feet of Bank at the inlet and outlet of the culvert at Sta 218+00, which is above the threshold referenced in the Regulations thus requiring an Evaluation. Wildlife Habitat Evaluation was performed on March 12, 2025 by the Certified Wildlife Biologist, at the locations where Bank was impacted due to project improvements in order to assess how project activities may impact the Banks' capacities to provide breeding habitat, escape cover and food for wildlife. The Wildlife Habitat Evaluation conducted at this location concluded that although minor disturbance to the Inland Bank of the Unnamed Intermittent Stream #1 is proposed

in order to replace this obstructed culvert at Sta 218+00, the existing condition in the study area being heavily disturbed with the existing and surrounding development, Route 38 and the adjacent MBTA tracks, therefore, are expected to not cause any adverse impacts to wildlife habitat. The disturbance to wildlife habitat required to replace the stream crossing is temporary; the natural streambed will be reestablished and the LUW area will be restored upon completion of construction. Notwithstanding the requirements of 310 CMR 10.56(4)(a)4., the impact on Land under Water Bodies and Waterways caused by the installation of a stream crossing is exempt from the requirement to perform a habitat evaluation in accordance with the procedures established under 310 CMR 10.60 (see Wildlife Habitat Evaluation in Appendix D to this REIR). The "no substantial reduction" standard is met when "important wildlife habitat functions are substantially restored" during project construction, or it is otherwise demonstrated that "the proposed alterations will have no adverse effects on wildlife habitat" because the important features identified in a particular study area are common to the overall area, and potential habitat features lost are minimal and any adverse impacts are avoided or minimized and mitigated. Therefore, the project should not result in a significant adverse effect or impair or reduce the capacity of Bank to provide important wildlife habitat functions. The impacted bank on the intermittent stream and the surrounding area will be restored upon completion of the culvert replacement work.

The following section describes how the proposed work within the Bank meets the performance standards in accordance with *310 CMR 10.54 (4)(a)*:

*310 CMR 10.54(4)(a)(1) Physical Stability of the Bank:*

The proposed work will not impair the physical stability of the Bank. The minor impacts associated with construction activities will be mitigated by the implementation of E&S controls to minimize impacts on Bank. After completion of work the total area of bank disturbed under proposed conditions will be replaced in accordance with the performance standards listed in 310 CMR 10.54(4).

*310 CMR 10.54(4)(a)(2) Water Carrying Capacity of the Existing Channel within the Bank:*

The proposed work will not impair the water carrying capacity of the existing channel within the bank. The permanent impacts to the inland bank of the intermittent stream within the project area result from the proposed roadway widening and replacement of the cross culvert at Sta. 218. The bank will be stabilized with rip rap at the headwalls of the proposed culvert at Sta. 218, therefore, the water carrying capacity of the existing channel within the bank will not be affected.

*310 CMR 10.54(4)(a)(3) Ground Water and Surface Water Quality:*

The work within the Bank will not have a negative impact on the ground water and surface water quality due to the nature of disturbance associated with roadway widening and replacement of the cross culvert. In addition, implementation of the proposed erosion and sediment control measures will help maintain water quality (ground and surface) throughout construction.

*310 CMR 10.54(4)(a)(4) Capacity of the Bank to provide Breeding Habitat, Escape Cover and Food for Fisheries:*

The proposed work will not have an adverse effect on the capacity of the Bank to provide breeding habitat, cover and food for fisheries.

*310 CMR 10.54(4)(a)(5) Capacity of the Bank to provide Important Wildlife Habitat Functions:*

The project is not expected to have a negative impact on the capacity of Bank to provide important wildlife functions, since the existing characteristics of the Bank and landscape context within and adjacent to the previously developed paved project area will not be negatively affected. Impacts to wildlife are expected to be negligible and are expected to be offset by the proposed mitigation measures.

**Bordering Land Subject to Flooding (BLSF)**

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Town of Wilmington (Map No. 25017C0291E, Effective June 4, 2010), a portion of the project in the vicinity of Maple Meadow Brook is located within a 100-year floodplain (Zone AE) with an established elevation of 82.9 feet upstream and 81.5 feet downstream.

The proposed project activities will occur within approximately 6,815 square feet of BLSF area, due to the proposed full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and new drainage outfalls in select locations (See plans included in Attachment E for details).

The following section describes how the proposed work within BLSF meets the performance standards in accordance with *310 CMR 10.57 (4)(a)*:

*10.57(4)(a)(1) Compensatory Storage:*

The fill within the floodplain is proposed from approximately Sta. 262+50 to Sta. 263+00 and from Sta. 251+50 to Sta. 256+50. Fill within this portion of the project is predominantly associated with the addition of a sidewalk on the west side of the roadway. There is also some negligible fill on the east side of the roadway below the elevation of 81.5 feet (18 cubic feet/47 square feet of BLSF). The rest of the proposed work within BLSF will not involve fill and will be limited to reconstruction of the roadway; existing grades will be reestablished at the end of construction within BLSF in this area, therefore, there will be no change in grades in compliance with the BLSF Performance Standards.

The project is not changing the FEMA delineated 100-year floodplain. The proposed flood storage compensation area will be located between Sta. 258+00 and Sta. 260+00 on the west side of Route 38 and must comply with the General Performance Standards presented in 310 CMR 10.57 (4)(a). These call for the provision of compensatory flood storage volume for existing flood storage that will be made unavailable by the proposed work. These storage areas must be incrementally equal per foot of elevation to storage volume lost. They also must have an unrestricted hydraulic connection to the same waterway segment is the lost storage volumes. Work within BLSF cannot restrict flows in any manner that would increase flood stages or flow velocities.

The proposed flood storage area is hydrologically connected to the affected floodplain and will provide flood storage compensation on a foot-by-foot basis. In order to protect the large trees on the site, the cut will be predominantly excavated at the 82-foot contour, which results in an overall incremental net cut. The project is able to compensate the entire project's flood storage loss between elevations 80-92.9 feet. The lost flood storage volume of 2,155 cubic feet is more than balanced by the creation of 4,161 cubic feet of storage as demonstrated in the table below. Table 4 below provides a summary of cut, fill and flood storage compensation provided:

*Table 5.4: Compensatory Flood Storage*

| Elevation (FT) | Volume of Cut (CF) | Volume of Fill (CF) | Incremental Net Cut/Fill Volume (CF) |
|---|---|---|---|
| 79.0 | | | |
| 80.0 | 0 | 0 | 0 |
| 81.0 | 147 | 7 | -140 |
| 82.0 | 1,804 | 925 | -879 |
| 82.9 | 2,210 | 1,222 | -988 |
| **TOTAL** | **4,161** | **2,155** | **-2,007** |

*See Resource Area Impact Plans in Appendix F

The project is not increasing the FEMA Base Flood Elevations.

*10.57(4)(a)(2) Restriction of Flows:*

The proposed work within the BLSF is a result of the redevelopment of the existing paved area currently located within BLSF and activities associated with construction of the sidewalk on the west side of the roadway. Therefore, the proposed improvements will not restrict flows so as to cause an increase in flood stages or flow velocities, in compliance with this standard.

*10.57(4)(a)(3) Shall Not Impair Wildlife Habitat:*

The proposed site alterations within BLSF will not adversely impact portions of the BLSF found to be significant to the protection of wildlife habitat nor its capacity to provide wildlife habitat functions. The proposed alterations are located outside areas depicted as “priority habitat of rare species” and “estimated habitat of rare wildlife” as depicted on the 2021 Massachusetts Natural Heritage Atlas. The project area within BLSF is comprised of paved roadways, landscaped areas, and includes adjacent wetlands. Those project activities subject to WPA review will not impair wildlife habitat associated with the Brook and adjacent wetlands.

**Riverfront Area**

Riverfront Area associated with Maple Meadow Brook extends over 86,013 square feet of the project area; however, significant portions of the work occurring within the Riverfront Area is exempt under the provisions set forth under 310 CMR 10.02(2)(b)1 and, therefore, is not being reviewed under WPA and MEPA. The non-exempt work takes place within approximately 71,960 square feet of the Riverfront Area. Of the total project impacts to Riverfront Area, approximately 8.8% of the impacts will occur as a result of road widening. The majority of this widening will occur within the previously disturbed and filled areas adjoining the existing roadway. This non-exempt work proposed in the Riverfront Area includes full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and drainage improvements including new drainage outfalls in select locations. This work will take place in existing developed areas, and therefore should be considered as redevelopment.

General Performance Standards for Riverfront Area, as set forth in *310 CMR 10.58(4)*, are addressed as described below:

*10.58(4)(a) Protection of other Resource Areas:*

The affected Riverfront Area includes BVWs, LUW, Inland Bank, BLSF and Buffer Zones. The project will comply with the performance standards as described above in previous sections of this narrative.

*10.58(4)(b) Protection of Rare Species:*

As indicated previously in this Narrative, there are no threatened or endangered species, or species of concern, in the project area.

*10.58(4)(c) Practicable and Substantially Equivalent Economic Alternative:*

Since this project will occur within the previously developed Riverfront Area created prior to August 7, 1996, it does not need to document equivalent economic alternatives.

*10.58(4)(d) No Significant Adverse Impact:*

The full depth pavement reconstruction and minor widening required for construction of new sidewalks within the 2.1-mile project corridor will result in an increase in impervious area. All permanent work will occur within a Riverfront Area that is currently degraded by pavement, shoulders or adjacent landscaped areas.

When work that redevelops previously developed Riverfront Areas is proposed, the following criteria from *310 CMR 10.58(5)* need to be complied with:

*10.58(5)(a) At a minimum, proposed work shall result in an improvement over existing conditions of the capacity of the Riverfront Area to protect the interests identified in M.G.L. c.131,§40. When a lot is previously developed but no portion of the Riverfront Area is degraded, the requirements of 310 CMR 10.58(4) shall be met.*

This roadway reconstruction project is intended to improve existing substandard conditions to promote safety for various roadway users and provide drainage improvements. The project alters previously disturbed and degraded Riverfront Area, and within the limits of the project area, minimal space is present where improvements to the Riverfront Area could be realized. Where possible, disturbed areas will be loamed and seeded. The Riverfront Area within parcels containing the project is degraded with pavement, shoulders and landscaped areas, and as such there is no need to meet requirements of 310 CMR 10.58(4). The work within the Riverfront Area is unavoidable due the proposed full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and new drainage outfalls in select locations as well as placement of the erosion and sediments controls to protect nearby resource areas.

*10.58(5)(b) Stormwater management is provided according to Massachusetts Stormwater Management Standards, as can be seen in the Appendix F to this Application.*

The project will provide improvements to the existing drainage system and improve the quality of stormwater runoff discharged to adjacent wetlands. Retrofitting of outfall locations with stone for pipe ends to provide splash pads for stormwater discharges will reduce erosion and movement of sediment into the waterbodies. Construction of subsurface drainage improvements will extend pavement life spans and will result in improved safety by reducing stormwater ponding on reconstructed roadway pavements. Three infiltration SCMs are proposed to improve the quality of stormwater runoff discharged to adjacent protected resource areas. The proposed stormwater improvements will improve public safety on the roadway, help control the flow of stormwater discharged to the adjacent wetlands, and improve the

quality of discharged stormwater, to the maximum extent that it is practical. In addition, catch basins will be added to improve runoff. These improvements will result in improved water quality and drainage characteristics; therefore, contributing to the interests of the WPA (public or private water supply, to ground water supply, to flood control, to storm damage prevention, to the prevention of pollution and to the protection of fisheries and wildlife habitat).

*10.58(5)(c) Within 200-foot Riverfront Areas, proposed work shall not be located closer to the river than existing conditions or 100 feet, whichever is less, or not closer than existing conditions within 25 foot Riverfront Areas, except in accordance with 310 CMR 10.58(5)(f) or (g).*

The majority of the proposed work will occur as close to the river as the present limits of areas degraded by pavement, shoulders and landscaped areas. However, due to the project's purpose to provide additional sidewalk within the project corridor, a small portion of this work may be located closer to the brook than existing conditions. The limit of work has been minimized to the maximum extent practicable, and the area will be stabilized and restored to the maximum extent feasible upon completion of work.

*10.58(5)(d) Proposed work, including expansion of existing structures, shall be located outside the riverfront area or toward the riverfront area boundary and away from the river, except in accordance with 310 CMR 10.58(5)(f) or (g).*

Most of the permanent work will be located within the area previously disturbed, due to existing roadway shoulder embankment and landscaped areas. Areas disturbed by the proposed roadway reconstruction and minor widening to accommodate additional sidewalk within the Riverfront Area will be stabilized upon completion of construction to the maximum extent practicable.

*10.58(5)(e) The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% if the degraded area is less than 10% of the riverfront area, except in accordance with 310 CMR 10.58(5)(f) or (g).*

The amount of work in the Riverfront Area is 71,960 square feet of the 86,013 square feet of the total Riverfront Area within the project area. Approximately 83% percent of the Riverfront Area will be affected by the proposed work; however, only 8.8% of the impacts will occur as a result of road widening. Of the 71,960 square feet of Riverfront Area within the project area, almost all of the resource area is already degraded with pavement, shoulders, landscape areas or embankments. Disturbances within the Riverfront Area associated with this work and regrading have been minimized to the maximum extent practicable and the area will be stabilized upon completion of construction.

*10.58(5)(f) When an applicant proposes restoration on-site of degraded riverfront area alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), and (e) at a ratio in square feet of at least 1:1 of restored area to area of alteration not conforming to the criteria. Areas immediately along the river shall be selected for restoration. Alteration not conforming to the criteria shall begin at the riverfront area boundary. Restoration shall include:*

- *a. removal of all debris, but retaining any trees or other mature vegetation;*
- *b. grading to a topography which reduces runoff and increases infiltration;*
- *c. coverage by topsoil at a depth consistent with natural conditions at the site; and*
- *d. seeding and planting with an erosion control seed mixture followed by plantings of herbaceous and woody species appropriate to the site;*

The project is comprised of the reconstruction of a road and structure owned by state highway agencies prior to August 7, 1996, and as such activities to maintain these facilities are grandfathered from Requirements for the Riverfront Area. However, the disturbed area will be restored upon completion of construction activities. Tree restoration/replanting is proposed within the 200-ft Riverfront Area of Maple Meadow Brook (approx. from Sta 248+50 to 261+50) (270 SF± and 11,000 SF± at the wetland replication site).

*10.58(5)(g) When an applicant proposes mitigation either on-site or in the riverfront area within the same general area of the river basin, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), or (e) at a ratio in square feet of at least 2:1 of mitigation area to area of alteration not conforming to the criteria or an equivalent level of environmental protection where square footage is not a relevant measure. Alteration not conforming to the criteria shall begin at the riverfront area boundary. Mitigation may include off-site restoration of riverfront areas, conservation restrictions under M.G.L. c. 184, §§ 31 to 33 to preserve undisturbed riverfront areas that could be otherwise altered under 310 CMR 10.00, the purchase of development rights within the riverfront area, the restoration of bordering vegetated wetland, projects to remedy an existing adverse impact on the interests identified in M.G.L. c. 131, § 40 for which the applicant is not legally responsible, or similar activities undertaken voluntarily by the applicant which will support a determination by the issuing authority of no significant adverse impact. Preference shall be given to potential mitigation projects, if any, identified in a River Basin Plan approved by the Secretary of the Executive Office of Environmental Affairs.*

No mitigation is needed or proposed. The project is comprised of the reconstruction of a road and structure owned by state highway agencies prior to August 7, 1996, and as such activities to maintain these facilities are grandfathered from Requirements for the Riverfront Area.

*10.58(5)(h) The issuing authority shall include a continuing condition in the Certificate of Compliance for projects under 310 CMR 10.58(5)(f) or (g) prohibiting further alteration within the restoration or mitigation area, except as may be required to maintain the area in its restored or mitigated condition. Prior to requesting the issuance of the Certificate of Compliance, the applicant shall demonstrate the restoration or mitigation has been successfully completed for at least two growing seasons.*

No mitigation is needed or proposed. The project is comprised of the reconstruction of a road and structure owned by state highway agencies prior to August 7, 1996, and as such activities to maintain these facilities are grandfathered from Requirements for the Riverfront Area.

**Buffer Zone**

The existing roadway currently encroaches within the 100-foot Buffer Zones to the BVWs and Bank of the Unnamed Intermittent Stream at Sta. 218+00 (Route 38). No buildings are proposed as part of this project, but the proposed minor widening of the roadway to achieve typically two 11-foot travel lanes, a sidewalk and 5.5-foot-wide shoulders/bicycle lanes along the project corridor will result in the limit of the pavement being closer to the wetland under proposed conditions. The proposed work will result in approximately 189,596 square feet of impacts to the 100-foot Buffer Zones. The limited space within the roadway Right-of-Way (ROW) and existing pavement width of approximately 30-34 feet does not allow the proposed 11-foot-wide travel lanes, 5.5-foot shoulders/bike lanes and an additional 5.5-foot sidewalk(s) at selected locations along the project corridor and to be located within the existing limits of pavement. Treatment of stormwater runoff from the proposed roadway will be improved over existing conditions.

Erosion and sediment control Best Management Practices (BMPs) will be installed during construction to protect adjacent resource areas, which will temporarily impact the buffer zones. These BMPs ensure the land disturbance within the Buffer Zone does not negatively impact resource areas and will secure the protection of the interests of the WPA.

Compliance with Massachusetts River and Stream Crossing Standards:

The proposed culvert replacement at Sta. 218+00, conveying the Unnamed Intermittent Stream under Route 38, will achieve partial compliance with the Massachusetts River and Stream Crossing Standards (revised March 2011) by conforming with Stream Crossing General Standards (SCGS) #4, #5. SCGS #2, #3 and #6 cannot be complied with, and #1 does not apply. The existing 3.5'x1.5' box culvert at approximate Sta. 218+00, conveying the Unnamed Intermittent Stream under Route 38, is proposed to be replaced with a 3'x3' precast concrete box culvert with a natural streambed material proposed in the bottom of the proposed culvert at the same elevation as the existing surface. Therefore, the proposed design results in an improvement upon the existing conditions at this stream crossing by replacing the existing box culvert, which increases the width of the crossing at this location.

SCGS #1 posits that "*Spans (bridges, 3-sided box culverts, open-bottom culverts or arches) that preserve the natural stream channel are strongly preferred*." The existing 3.5'x1.5' obstructed culvert at Sta. 218+00 is not an open bottom structure and will be replaced with the proposed 3'x3' precast concrete box culvert. This culvert conveys an intermittent stream that does not have a year-round flow and it outfalls into a BVW A-series. In addition, there is another culvert west of the culvert inlet conveying this intermittent stream beneath the MBTA railroad tracks, which is not being replaced as part of this project. Both of the existing culverts beneath the MBTA railroad tracks and Route 38 are not an open bottom structure, and replacement of the culverts with open bottom structures is not feasible due to constructability constraints which will potentially cause more impacts to the surrounding BVWs and utilities, therefore, this standard is met to the maximum extent practicable.

SCGS #2 provides recommendations for a culverted crossing to be embedded a minimum of 2 feet. The existing culvert is not embedded 2 feet or more; and in order to limit the disturbance to resource areas and the depth of excavation within resource areas (BVW A-series), the proposed replacement culvert will be embedded less than 2 feet as well. Natural streambed material proposed in the bottom of the proposed culvert will be at the same elevation as the existing surface. This standard is met to the maximum extent practicable.

SCGS #3 calls for a new span to incorporate a width that, at a minimum, equals 1.2 times bankfull width of the stream. As discussed above under the SCGS #1, there is another culvert west of the culvert inlet of Route 38 conveying this intermittent stream beneath the MBTA railroad tracks, which is not being replaced as part of this project. Both of the existing structures do not comply with the SCGS. Since the existing culvert beneath the MBTA railroad tracks upstream of the Route 38 crossing is not being replaced, widening of the proposed continuation of this stream crossing beneath Route 38 is precluded; in addition, widening of this crossing would cause more impact to the BVW A-series at the outlet of this crossing on the east side of Route 38. This standard is met to the maximum extent practicable.

SCGS #4 calls for placement of natural substrate within the structure. As shown in the Plans, the proposed replacement culvert will utilize concrete box culvert span-type structure and will accommodate 6 inches of natural streambed material over 6 inches of crushed stone in the bottom. This standard is fully met.

SCGS #5 calls for "*… bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows.*" The proposed culvert will maintain bed forms and streambed characteristics comparable to those found in the natural channel at a variety of flow. The proposed layer of natural streambed placed at the same elevation to match the existing streambed will allow for a smooth transition from upstream to downstream of the crossing upon completion of construction. This standard is fully met.

SCGS #6 provides a desired level of "*openness*" for stream crossings so that wildlife will utilize the crossing for passage beneath a roadway. The desired ratio of cross-sectional area of opening to passage length is a minimum value of 0.82 feet. The project proposes the replacement of the existing 3.5'x1.5' obstructed culvert with a 3'x3' precast concrete box culvert with 6" of natural streambed material over 6" of crushed stone. The existing cross-sectional area is 5.25 square feet divided by the existing passage length of 47.65 feet, yields a value of 0.11 feet. Although the size of the opening will be slightly increased, there will be a 6" layer of crushed stone topped with natural stream bottom. The proposed cross-sectional area of 6 square feet divided by a proposed passage length of 55.32 feet, both as shown in the Plans, yields a value of 0.11 feet. Therefore, both the existing and the proposed culvert do not meet Standard #6 by providing a minimum level of openness of 0.82 feet. Substantial enlargement of the structure is not feasible due to constructability constraints discussed above and additional impacts to adjacent protected resource areas (BVW A-series). This standard is met to the maximum extent practicable.

Section 401 Water Quality Certification (WQC)

As discussed in the section above, the proposed work within Waters of the United States requires a Section 401 Water Quality Certification for Major Fill and Excavation Projects pursuant to 314 CMR 9.04(1) since the project will result in more than 5,000 square feet cumulatively of temporary and permanent impacts to Bordering Vegetated Wetland and Land Under Water, areas subject to *310 CMR 10.00: Wetlands Protection* which is also subject to *33 U.S.C. §1251 et seq. (1972), The Clean Water Act (CWA)*. The project also involves activities resulting in dredging of over 100 cubic yards within the waterways under 314 CMR 9.04(12), and, therefore, requiring a 401 Water Quality Certification for Minor Dredging Projects.

The Joint Application for 401 Water Quality Certification for Minor Dredging and Major Fill/Excavation (WQC Application No. 25-WW26-0013-APP) and 404 Pre-Construction Notification was submitted to the Department of Environmental Protection (DEP) on April 10, 2025 in association with this project.

The 401 WQC LUW/WOTUS Impacts subject to MEPA review match the ones discussed above in Table 5.1: BVW Impacts and Table 5.2: LUW Impact. The amount of dredging required to replace the Culvert conveying the Unnamed Intermittent Stream near Dublin Ave (approx. Sta. 218) will not exceed 100 cubic yards.

## 5.2 LAND USE

This project does not trigger any review thresholds related to land listed in 301 CMR 11.03(1). The project will result in an overall increase of approximately 60,722 square feet in impervious area within the project limits. This is due to the realignment and minor widening of the roadway in select areas, and construction of approximately 14,500 linear feet of new sidewalks. These additions will improve driver, bicyclist, and pedestrian safety on Route 38 (Main Street). Although the project is increasing the impervious area within the project limits, the project also includes drainage system improvements, including proposing three

infiltration Stormwater Control Measures (SCMs) to treat runoff and mitigate impacts from the increase in impervious area.

The land use surrounding the project site consists of a combination of commercial, impervious, developed open space, deciduous forest, evergreen forest, palustrine forested wetland and some bare land.

Wetlands exist on both sides of Route 38 immediately adjacent to the roadway for much of the project length. They are connected by existing culverts which cross the roadway at three locations in the northern portion of the project.

Although the several parks and/or conservation areas abut the project route (Legacy Park, Yentile Farm Recreational Facility, The Town Park Pumping Station water supply land, the Town of Wilmington Dog Park and the Middlesex Canal Historic and Archaeological District), only Legacy Park and a portion of the Town Park Pumping Station property, which does not include the Dog Park, are subject to Article 97 of the Amendments to the Constitution of the Commonwealth (further Article 97). There will be no disturbance to Legacy Park. And all disturbances along the Town Park Pumping Station property will be temporary in nature and will only require temporary easements. Therefore, the project will not trigger Article 97 Land Disposition, nor will it be converted to other inconsistent uses.

## 5.3 STORMWATER AND IMPERVIOUS SURFACES

The following sections detail the regulatory framework for stormwater management, the existing impervious cover and stormwater system, an assessment of impacts, and the project's regulatory compliance with the Massachusetts Stormwater Standards.

### *5.3.1 Regulatory Framework*

As the proposed project is a roadway project, it is therefore categorized as a "Redevelopment Project" under the Massachusetts Stormwater Management Standards. The project is required to meet only Standards 2 & 3 and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5 & 6 to the maximum extent practicable.

As demonstrated below, the proposed Project complies with the MassDEP Stormwater Management Standards (the Standards).

### *5.3.2 Existing Conditions*

The existing site can be analyzed as twenty-seven (27) watershed areas that contribute runoff to twenty-one (21) discharge points.

The existing drainage system on the roadways within the project limits includes "country drainage" (i.e. no curb), where the runoff sheet flows off the pavement into the pervious shoulder, roadside ditches, or private front yards. There are lengths of bituminous berm gutter, where the road runoff flows as concentrated flow to catch basins, or to a point where the berm discontinues, and the runoff flows onto adjacent wetland or wooded areas as shallow concentrated flow.

For the purpose of this hydrologic analysis, the following assumptions were made:

- When the watershed boundary fell outside of the limit of work an arbitrary line was delineated as the watershed boundary.

- The total watershed area for the existing conditions is used as the comparison base for the watershed area in the proposed conditions.

The existing drainage system on the roadways within the project limits includes portions of "country drainage" (i.e. no curb), where the runoff sheet flows off the pavement into the pervious shoulder, roadside ditches, or private front yards. There are lengths of bituminous berm gutter, where the road runoff flows as concentrated flow to catch basins, or to a point where the berm discontinues, and the runoff flows onto adjacent wetland or wooded areas as shallow concentrated flow. Vertical curb is present in the northern portion of the site (EDA 1, 2, 3, 4) and on the inside of the southernmost bend on the site near the Woburn Town line (EDA-20).

There are separate closed drainage systems spread throughout the project, servicing EDA-1 and parts of EDA-3, 4, 5, 7A, 9A, 12, 13, 14A, 16, 18A, 18B, and 20. Three of the drainage areas contribute to closed pipe networks that flow away from the project (EDA 1, 2, and EDA-20).

There is one existing stormwater basin located in EDA-18B which collects runoff from part of Old Main Road. This basin outfalls to DP-18 at Wetland H. The project does not contribute runoff to this existing basin in the proposed condition.

### *5.3.3 Assessment of Impacts*

The realignment of the roadway and construction of a typical 32-foot pavement width results in an overall increase of 60,722 square feet in impervious area within the project limits. While there is a net increase in impervious area, the proposed project provides an opportunity to improve the quality of stormwater runoff discharged to adjacent wetlands by implementing three (3) proposed SCMs to help mitigate the increase in peak rates. The proposed stormwater enhancements are summarized below:

- A portion of the proposed drainage system has been designed to convey runoff to the SCMs for water quality treatment, and attenuation prior to discharge to the surrounding environment. The proposed SCMs are two subsurface infiltration systems and an infiltration basin.

- The new drainage system will follow existing drainage patterns by discharging at natural existing discharge points.

### *5.3.4 Regulatory Compliance*

As stated above, this project qualifies as a Redevelopment project under the Stormwater Management Standards. This project is also a Limited Project under the WPA. This section provides a list of the Stormwater Management Standards and a brief description of the project's compliance with the standards to the maximum extent practicable.

**Standard 1: (Untreated discharges)**
*No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

The project has been designed to comply with Standard 1. All new outfalls are designed with flared end sections and rip rap protection to prevent erosion to the existing wetland systems. Stormwater runoff will be treated by deep sump hooded catch basins, and the project includes two subsurface infiltration systems with isolator rows for pretreatment and an infiltration basin with a forebay to provide additional

treatment. Drainage patterns are being maintained throughout the project area to the extent practicable. The majority of outfalls will be reconstructed adjacent to existing outfall locations. Closed drainage systems will be constructed and located where new sidewalks will obstruct existing country drainage. All new inlet structures will have deep sumps and hoods. There are no new untreated point source discharges created as a result of this project. Additional information describing the changes to the drainage systems is included in the Stormwater Report**.** This standard is fully met.

**Standard 2: (Peak rate control and flood prevention)**
*Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as designed in 310 CMR 10.04.*

Standard 2 requires that the rates of flow be attenuated for the proposed development condition. This project is a redevelopment project and is required to meet Standard 2 to the maximum extent practicable. The peak flow rates were calculated for the 2-, 10-, and 100-year storm events under proposed conditions and compared to the existing peak flow rates. The realignment of the roadway and construction of a typical 32-foot pavement width results in an overall increase of 60,700 square feet in impervious area within the project limits. While there is a net increase in impervious area, the proposed project will implement three proposed SCMs to help mitigate the increase in peak rates. Though there is an increase in peak flow rates for DP-4, DP-7, DP-9, DP-11, DP-14, DP-15, DP-16, DP-18, DP-19, and DP-20 for some or all storm events, the corresponding increase in peak volume translates to a small impact to the corresponding downstream wetland or waterbody. See attached Stormwater Report for detailed explanation on peak rate analysis at each discharge point. The proposed project meets this requirement to the maximum extent practicable.

Area from DP-3 has been rerouted to DP-4 under proposed conditions, which discharges to Wetland A and has an approximate area of 55.33 acres. While there is an increase in peak rates for all storm events at DP-4 (Wetland A), the total peak volume for the 100-year storm event will result in a net increase of 0.586 acre-feet (af), which results in a net rise of approximately 0.13 inches, which is negligible.

DP-7 discharges to Wetland D, which has an approximate area of 2.80 acres and will see an increase in peak rates for all storm events. The total peak volume for the 100-year storm event will result in a net increase of 0.341 af, which results in an increased depth of approximately 1.46 inches within the wetland. The increase in peak rates is mainly due to rerouting of the roadway runoff from the upstream area (DP-8) to the downstream area (DP-7). Wetland D (DP-7) is hydraulically connected to Wetland C (DP-8) though a 36” culvert and has a total area of 4.78 acres. Since Wetland D and C are hydraulically connected, when combining volumes for DP-7 (Wetland D) and DP-8 (Wetland C), Wetland C/D will see an increase of 0.241 af, resulting in a net rise of approximately 0.60 inches, which is negligible.

DP-9 discharges to Wetland E, which has an approximate area of 14.72 acres and will see an increase in peak rates for all storm events. The total peak volume for the 100-year storm event will result in a net increase of 0.693 af, which results in an increased depth of approximately 0.57 inches, which is negligible.

DP-11 discharges to Wetland I, which has an approximate area of 1.35 acres and will see an increase in peak rates for all storm events. The total peak volume for the 100-year storm event will result in a net increase of 0.029 af, which results in an increased depth of approximately 0.26 inches, which is negligible.

DP-14 discharges at an existing outfall that will be replaced as part of this project and stormwater travels via overland flow to the west into wooded property. There is an increase in peak rates for 2-, 10- and 100-year storm events at DP-14. The increase in peak rates is due to site constraints along the roadway corridor that limit where a proposed Stormwater Control Measure (SCM) can be constructed. The proposed project includes a new subsurface infiltration system (SCM-1) within a parking lot owned by the Town; however, it is in a location that only captures the upstream stormwater runoff from this area (PDA-14A). Runoff downstream from this SCM (PDA-14B) is not able to be captured and treated with a SCM. The proposed SCM will provide significant mitigation; however, this discharge point will have a minor increase in peak rates consisting of 0.48 cfs, 0.05 cfs, and 0.10 cfs for the 2-, 10-, and 100-year storm events respectively, which are negligible.

DP-15 discharges overland flow to the east and will see an increase in peak rates for all storm events. The increase in peak rates are 0.23 cfs, 0.23 cfs, and 0.19 cfs for the 2-, 10-, and 100-year storm events respectively, which are negligible.

DP-16 discharges overland flow to the east and will see an increase in peak rates for 2- and 10-year storm events. The increase in peak rates are 0.04 cfs and 0.03 cfs for the 2- and 10-year storm events respectively, which are negligible.

DP-18 discharges to Wetland H, which has an approximate area of 2.42 acres and will see an increase in peak rates for all storm events. An aboveground infiltration basin (SCM-2) is proposed to treat a portion of the watershed area (PDA-18D1) to help mitigate peak rates; however, due to site constraints it is not feasible to treat the entire area discharging to DP-18. The total peak volume for the 100-year storm event will result in a net increase of 0.161 af, which results in an increased depth of approximately 0.80 inches, which is negligible.

DP-19 discharges overland flow and gutter flow to the east and will see an increase in peak rates for for all storm events. The increase in peak rates are 0.18 cfs, 0.18 cfs, and 0.14 cfs for the 2-, 10-, and 100-year storm events respectively, which are negligible.

Per MassDOT Requirements, a proposed stormwater SCM must hold peak volumes up to the 10-year storm event. The proposed SCMs meet this requirement to the maximum extent practicable. Therefore, this standard is met to the maximum extent practicable.

**Standard 3: (Recharge to Ground water)**
*Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures, including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post development site shall approximate the annual recharge from the predevelopment conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.*

As stated previously, this project is a redevelopment project and is required to meet Standard 3 to the maximum extent practicable. This project has 506,700 square feet of total existing impervious area and 567,400 square feet of total proposed area within the limit of work. The required recharge volume for the total proposed impervious and the net increase in impervious area is 28,175 cubic feet (CF) and 2,990 CF, respectively. There is a net increase in impervious area of 60,700 square feet under proposed conditions,

so there is a recharge volume requirement. The project has implemented three SCMs to maximize recharge at feasible locations within the project limits. These SCMs will provide an improvement to existing conditions as there are presently no stormwater mitigation practices within the project limits.

The contributing impervious areas and underlying Hydrologic Soil Group were used to estimate the recharge volume lost by development, which was used to calculate the required recharge volume for each SCM. The required recharge volume is 1,167 CF, 462 CF, and 260 CF for SCM-1, -2, and -3, respectively. The recharge storage volume provided is 3,511 CF, 955 CF, and 2453 CF for SCM-1, -2, and -3, respectively. Therefore, each SCM provides adequate volume for the impervious area that is routed to them. In addition, the combination of recharge volume provided by all three SCMs provides adequate storage for the required net increase of proposed impervious area for the project, but not for the required total proposed impervious area within the site. Therefore, Standard 3 is met to the maximum extent practicable.

**Standard 4: (80% TSS Removal)**

*Stormwater management systems shall be designed to remove 80% of the average annual postconstruction load of Total Suspended Solids (TSS). This standard is met when:*

a. *Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan and thereafter are implemented and maintained;*
b. *Stormwater BMPs are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
c. *Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

As stated previously, this project is a redevelopment project and is required to meet Standard 4 to the maximum extent practicable. As mentioned in Standard 3, there is a net increase in impervious area and three SCMs are proposed as part of this project. It has been designed to provide water quality treatment for the area of impervious surface that it captures. The treatment practices are:

- Aboveground Infiltration Basin
- Subsurface infiltration chambers

This standard is met to the maximum extent practicable.

Massachusetts Stormwater Regulations require a “Water Quality Depth” of 1 inch when the project site is located within a “critical area”. This project is located within a Zone II, which is considered a critical area; therefore, a depth of 1” was used for the Water Quality calculations.

The proposed design aims to improve the water quality by installing three new infiltration SCMs. The required water quality volume for the total impervious area is 58,400 CF. The required water quality volume for the net increase in impervious area is 5,060 CF. The required water quality volume for the impervious area that SCM-1, SCM-2, and SCM-3 receives is 1,944 CF, 751 CF, and 1,041 CF, respectively. The combined storage volume of the three proposed SCMs is 6,919 CF, which provides enough volume for the net increase in impervious area, but not the total proposed impervious area. The SCMs also exceed the water quality volume requirement for the area they are designed to hold, by providing 3,511 CF, 955 CF, and 2,453 CF of storage for SCM-1, SCM-2, and SCM-3, respectively. Therefore, this standard will be met to the maximum extent practicable. See the Stormwater Report in Attachment D for required water quality volume calculations.

The project has been designed to include a minimum of 25% TSS removal for areas where SCM's were not feasible. Where SCM's are able to be installed, more than 80% TSS removal will be achieved. Since the project is located within a stormwater critical area, pretreatment of 44% TSS removal is required prior to an infiltration basin. All three SCM's include a combination of deep sump catch basins with either a forebay or isolator row that provide 44% TSS removal before the infiltration basins.

**Standard 5 (Higher Potential Pollutant Loads (HPPL)**
*For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.*

The project site is not considered a Land Use with Higher Potential Pollutant Loads (LUHPPL); therefore, Standard 5 is not applicable to this project.

**Standard 6 (Critical Areas)**
*Stormwater discharges to a Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "stormwater discharge," as defined in 314 CMR 3.04(2)(a)1 or (b), to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.*

This site discharges within a Zone II, which is considered a "critical area." This standard applies and the project must meet the 1" water quality requirement.

Water Quality treatment volume provided for all three SCM's have been sized for the 1". In addition, all three SCM's shall provide at least 44% TSS removal prior to discharge to the infiltration structure. The water quality standards for the proposed stormwater system have been addressed in Standard 4 of the stormwater report. Catch Basins with plastic hoods and 4' sumps are proposed throughout the project. The hoods will provide some volume to capture floatable oil, grease, and petroleum hydrocarbons if a spill occurs.

In addition, MassDOT follows established Best Management Practices (BMPs) and operational procedures and has implemented a range of strategies statewide to reduce the amount of road salt used and minimize its environmental impact. Such strategies include the increased use of liquid deicers to pre-wet dry material in order to reduce bounce and scatter and for pre-treating roadways prior to storms when

conditions allow. Both of these techniques have been shown to reduce the overall application of sodium chloride. In addition, the use of closed loop controllers, pavement sensors and other equipment allows for more efficient operations.

Additional measures required for stormwater management systems in critical areas are the installation of shut-off valves at all outlets to a critical area. For areas where there is a closed drainage system, the risk of potential tampering by the public with the shut-off valves and the required response time by a town officials to operate the valve in case of an emergency outweigh the benefits of installing the shut-off valves; therefore, they are not included in the design. This standard is met to the maximum extent practicable.

**Standard 7: (Redevelopments and Other Projects Subject to the Standards only to the Maximum Extent Practicable)**

*A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*

The improvements to Route 38 are considered a Redevelopment; therefore, Standard 7 is applicable to this project. This project provides an opportunity to improve the quality of stormwater runoff discharged to adjacent wetlands. The proposed stormwater enhancements are summarized below:

- Three infiltration SCMs are proposed as part of this project. A portion of the proposed drainage system has been designed to convey runoff to the SCMs for water quality treatment, and attenuation prior to discharge to the surrounding environment. The proposed SCMs are two subsurface infiltration systems and an aboveground infiltration basin.
- The new drainage system will follow existing drainage patterns by discharging at natural existing discharge points.

Below is a bulleted summary of project compliance to the standards:

- Standard 1 (Untreated Discharges) – Fully Met
- Standard 2 (Peak Rate Control and Flood Prevention) – Maximum Extent Practicable
- Standard 3 (Recharge to Groundwater) – Maximum Extent Practicable
- Standard 4 (80% TSS Removal) – Maximum Extent Practicable
- Standard 5 (Higher Potential Pollutant Loads) – N/A
- Standard 6 (Critical Areas) – Maximum Extent Practicable
- Standard 8 (Erosion Sediment Control) – Fully Met
- Standard 9 (Operations and Maintenance) – Fully Met
- Standard 10 (Illicit Discharges) – Fully Met

**Standard 8: (Erosion, Sediment Control)**

*A plan to control construction-related impacts, including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan), shall be developed and implemented.*

The implementation of erosion and sediment controls (ESC) during construction is considered a standard practice for all MassDOT projects. ESC will be installed before any land disturbance begins for the Project and will remain in place for the duration of the project. Construction period pollution prevention and erosion and sedimentation control measures will be implemented at the project site to control construction related impacts during construction and land disturbance activities. The General Contractor for the project will be responsible for the implementation of the construction period controls.

The project will disturb more than one acre of land during the construction process and will require a NPDES Construction General Permit issued by the Environmental Protection Agency. As a result, the General Contractor will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP document will satisfy the requirements of the Construction General Permit and the construction period erosion, sedimentation and pollution prevention plan requirements outlined in Standard 8 of the Massachusetts Stormwater Handbook. A SWPPP has not been prepared for inclusion with this stormwater report; however, one will be prepared prior to any construction activities at the site by the General Contractor.

Erosion and sedimentation controls will be employed to prevent the erosion and transport of sediment into resource areas during the earthwork and construction phases of the project. Erosion and sedimentation control measures will be installed prior to site excavation or disturbance and will be maintained throughout the construction period. This standard is fully met.

**Standard 9: (Operation and Maintenance)**
*A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

MassDOT O&M plans are addressed at a statewide, programmatic level through the State's highway operation and maintenance program. Each MassDOT district office is responsible for providing operation and maintenance for the MassDOT stormwater management systems within their respective jurisdictions. Attachment D includes the full Stormwater Report as well as the O&M Plan for this project. This standard is fully met.

**Standard 10 (Illicit Discharges)**
*All illicit discharges to the stormwater management system are prohibited.*

Standard 10 of the Massachusetts Stormwater Handbook prohibits illicit discharges to stormwater management systems. As stated in the handbook, "The stormwater management system is the system for conveying, treating, and infiltrating stormwater on-site, including Stormwater Control Measures and any pipes intended to transport stormwater the groundwater, a surface water, or municipal separate storm sewer system. Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater."

An Illicit Discharge Compliance Statement is included in the Stormwater Report in Attachment D. Where a new closed drainage system will be constructed, there will be no connections to sanitary sewer. In other areas, stormwater runoff discharges via overland flow. The design plans submitted with this report have been designed in full compliance with Standard 10. The project area does not have any known illicit connections. Any illicit connections to the stormwater management system found in the project limit of work during construction will be removed and/or resolved through MassDOT's Illicit Discharge Detention

and Elimination (IDDE) Program. The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges. This standard is fully met.

For additional details see Stormwater Report in Appendix E.

# 6.0 CLIMATE CHANGE

This section of the report identifies and describes the project's climate change impacts on the project site in further detail, as well as the associated proposed measures to promote resiliency and mitigate the impacts due to climate change to the maximum extent practicable.

## 6.1 REGULATORY CONTEXT

This project is subject to state regulations related to climate change adaptation and resiliency, as described in greater detail below.

### *6.1.1 MEPA Protocol*

The Massachusetts Environmental Policy Act (MEPA) Interim Protocol on Climate Change Adaptation and Resiliency ("Interim Protocol"), effective October 1, 2021, was issued to coordinate efforts across the Commonwealth to strengthen the resilience of communities, prepare for the impacts of climate change, and proactively plan for and mitigate damage from extreme weather events. Additionally, this protocol complements the 2010 MEPA Greenhouse Gas (GHG) Emissions Policy and Protocol, which requires analysis of a project's contribution to GHG emissions and commitments to increase energy efficiency to reduce emissions.

The Interim Protocol builds on the analysis and recommendations of the 2018 Massachusetts Integrated State Hazard Mitigation and Climate Adaptation Plan (SHMCAP), the Commonwealth's primary risk assessment and risk reduction strategy for natural hazards and climate change. Additionally, it includes the efforts of the Resilient Massachusetts Action Team (RMAT), the inter-agency committee responsible for implementation, monitoring, and maintenance of the SHMCAP.

### *6.1.2 RMAT Climate Resilience Tool*

In accordance with the Interim Protocol, an output report was generated from the RMAT Climate Resilience Design Standards Tool (RMAT Tool) in order to evaluate the climate change impacts on the project. The RMAT Tool provides the ability to automate the Commonwealth's climate change data to project risk and exposure to sea-level rise, increased precipitation, and extreme heat project sites in Massachusetts. Based on the outputs of the report, the RMAT Tool also provides recommendations for projects to help adapt and mitigate the anticipated climate impacts. The following sections summarize and discuss the outputs from the report for the project and the associated design measures implemented to adapt and mitigate the climate risks to the maximum extent practicable. The RMAT Tool output report can also be found in Appendix D to this report.

## 6.2 PROJECTED CLIMATE CONDITIONS AND VULNERABILITY ASSESSMENT

The RMAT Tool was used to evaluate the projected climate conditions and areas of vulnerability of the project site. Overall, the RMAT Tool indicates that the project is at a low risk of impact from sea level rise and storm surge but is at a high risk of extreme precipitation causing urban and riverine flooding, and a high risk of extreme heat. The results from the RMAT Tool are described in more detail below and the full RMAT Output Report can be found in Appendix D. The RMAT Tool outputs an Exposure Score with the purpose of providing a preliminary assessment of whether the overall project site and subsequent assets are exposed to impacts of natural hazard events and/or future impacts of climate change. For each climate parameter, the Tool automatically calculates one of the following exposure ratings: Not Exposed, Low Exposure, Moderate Exposure, or High Exposure.

### *6.2.1 Extreme Precipitation Events*

As shown in Figure 4, portions of the project corridor are located within the 100-year flood plain. Flood Insurance Study, by the Federal Emergency Management Agency and last revised on July 6, 2016, includes a detailed study of the project area, showing the 100-year floodplain elevations in the project vicinity. Maple Meadow Brook has a 100-year flood elevation of 82.9 feet upstream and 81.5 feet downstream of Route 38 crossing (NAVD 88).

Per the RMAT tool, the project received a “High Exposure” rating for extreme precipitation to cause riverine flooding because the project is within a mapped FEMA floodplain (Zone AE) and because portions of the project are within 100 ft of a waterbody (Maple Meadow Brook). The project also received a “High Exposure” rating for extreme participation causing urban flooding since the project is increasing the impervious surface area by 59,623 square-feet and because the maximum annual daily rainfall is anticipated to exceed 10 inches within the overall project’s useful life.

The project has been designed to mitigate the risks of extreme precipitation in the area surrounding the project site to the maximum extent practicable. The project includes drainage improvements, consisting of a modified drainage collection system to address the changes caused by the proposed road improvements as well as to protect the nearby downstream watershed and the environment. The proposed drainage improvements also include the installation of new deep sump catch basins with hoods, new drain manholes, replacement of existing drainage outfalls, as well as three proposed infiltration Stormwater Control Measures (SCMs) to mitigate the increase in peak rates of runoff. Although curbing in some sections will prevent currently existing sheet flow, the new drainage systems will maintain the historic drainage patterns, distributing runoff to the existing discharge points. The RMAT Tool recommends planning for the 25-year, 24-hour event in 2070, which is projected to be 7.3 inches. The current 100 year, 24-hour event is 6.39 inches based on NOAA Atlas 14 precipitation frequency estimates. The SCMs were designed to handle the current 100-year, 24-hour storm which is projected to be 8.23 inches, which would be adequate to handle the 25-year, 24-hour event projections in 2070. Additionally, a compensatory flood storage area of 4,161 cubic feet was designed to mitigate for the project’s net fill of approximately 3,849 cubic feet. The compensatory flood storage has been designed to exceed the project’s net fill in order to provide a net cut across the project which will aid in the project’s flood mitigation. The proposed flood storage compensation area will be located at the southern end of the project (approx. Sta. 257+50) and will comply with the General Performance Standards presented in 310 CMR 10.57 (4)(a). The creation of the proposed wetland replication area and the associated vegetation plantings also have the potential to reduce floodwater velocity during storm events. The above mentioned mitigation measures have been designed in order to mitigate the climate change risks to the project, as projected by the RMAT Tool’s output report (See Attachment H – RMAT REPORT).

### *6.2.2 Extreme Temperature*

The project also received a "High Exposure" score from the RMAT tool for extreme heat since the project is increasing impervious area, is located within 100 feet of an existing water body, will involve vegetation and root removal, and because it is anticipated that there will be a 30+ day increase in the number of days over 90 degrees within the project's useful life. In addition, the project will increase the local impervious area and the existing impervious area of the project site is greater than 50%. Further, existing trees are being removed as part of the proposed project.

Although the project is increasing impervious area within the project site, which can increase local temperatures, the project will incorporate a wetland replication area and wetland restoration across the project site, which will aid in reducing the heat island effect through processes such as evapotranspiration, shading, and heat absorption and storage. A total of 60 deciduous trees will be planted across the upland and wetland portions of the project area, many of which will be planted along the proposed sidewalks, providing pedestrians with refuge from the sun. Further, the planted vegetation will also serve as a local carbon sink, helping combat the greenhouse effect of carbon dioxide in the atmosphere, decreasing the rapidity with which climate change occurs.

## 6.3 ADAPTATION AND RESILIENCY SUMMARY

As indicated in the EEA's RMAT report, the primary threats to the project site include extreme participation, including urban and riverine flooding, as well as extreme heat.

Overall, although the project is increasing impervious area and received "High" exposure scores for flooding and extreme heat, this project received a "Moderate" Project score for its net benefits in the "Ecosystem Service" category since the project will result in a variety of environmental and ecosystem benefits which are intended to have a positive impact on the surrounding area. The factors that contribute to the "Moderate" Project score include that the project provides flood protection through nature-based solutions, protects public water supply, recharges groundwater, filters stormwater using green infrastructure, improves water quality, protects fisheries, wildlife and plant habitat and provides recreation. These mitigation measures have been designed to offset the impacts of the project in order to reduce the risk of climate change, as projected by the RMAT Tool's output report, (See Attachment H – RMAT REPORT).

The following adaptation measures have been designed to mitigate the identified climate change risks of increased precipitation and flooding and extreme temperatures to the maximum extent practicable:

- The project design meets the Stormwater Management Standards to the maximum extent practicable
- 1 compensatory flood storage area designed to exceed the project's net fill in order to provide an overall net cut of 2,007 cubic feet across the project; design will not increase the base flood elevation associated with Maple Meadow Brook
- 3 proposed SCMs: 2 subsurface infiltration systems and 1 aboveground infiltration basin
- New drainage system and drainage system improvements, which will follow existing drainage patterns and will discharge to naturally existing discharge points

- A wetland replication area slightly exceeding the proposed fill will also have the capacity to provide additional flood storage and act as a heat and carbon sink

- Areas of tree restoration will help decrease flood water velocity, act as a carbon sink, provide shade for pedestrians, and will reduce the heat island effect of the surrounding development

The impacts of climate change tend to affect EJ populations to a greater extent than non-EJ populations. EJ populations have reduced choice with regards to housing location and may also lack the means to tolerate higher global temperatures due to prohibitive energy costs. This project has been designed with the previously mentioned mitigation measures in an attempt to lessen the effects of the project on the climate, preventing unwanted adverse impacts on local EJ populations. By implementing measures to reduce the project's contribution to global climate change, addressing the potential for localized warming, and designing the project to efficiently divert, disperse, and sequester flood waters, EJ populations will be able to benefit from the proposed roadway improvements, without suffering from the associated, unintentional adverse impacts. Therefore, it is not anticipated that there will be any adverse impacts to EJ and non-EJ populations alike, and no resulting disproportionate adverse impacts to EJ populations, as a result of this project.

The RMAT Tool recommends a planning horizon of 2070 and a return period associated with a 25-year (4% chance) storm event when designing the culverts; and a planning horizon of 2050 and a return period associated with a 5-year (20% chance) storm event when designing the infiltration basins. It also recommends planning for the 50th percentile for applicable extreme heat parameters for the project. These outputs from the RMAT Tool were carefully evaluated and considered within the context of the replacement of the existing culverts and design of the stormwater management system.

The project hydraulic model for the culvert replacement near Dublin Avenue (approx. Sta 218) indicates that the proposed culvert replacement will safely convey the 50-year design flood event under current conditions. The potential benefits of replacing the existing culverts with culverts with larger openings under the projected 2070 storm conditions were evaluated. However, based on the available flood study, the proposed culvert can safely convey the present day 500-year depth of 11.1 inches (NOAA Atlas 14 present baseline) which is in exceedance of the Tier 2 2070 depth of 7.6 inches, as listed in the RMAT Output Report.

## 6.4 GREENHOUSE GAS (GHG) EMISSIONS AND AIR QUALITY

As previously stated, the project is not subject to a mandatory EIR threshold under 301 CMR 11.03 so the MEPA GHG Policy does not apply. However, the project aims to reduce traffic congestion in the surrounding area and provide new and/or improved opportunities for safe alternative modes of transportation, and therefore is expected to contribute to reduction of vehicle emissions in the area. The project does not include the construction of any buildings, and therefore associated building emissions will not occur as a result of the project. Overall, the emissions benefit will ideally reduce the existing air quality burden on the surrounding populations and therefore the project will not have an adverse impact on EJ or non-EJ populations due to air quality or GHG emissions.

# 7.0 CONSTRUCTION PERIOD IMPACTS

This section of the report provides information related to the construction schedule and the anticipated construction period impacts.

## 7.1 CONSTRUCTION SCHEDULE

Construction phasing will ultimately be determined by the project contractor. The construction phasing is assumed to generally include the following items:

1. Coordination with private utility companies for utility relocations.
2. Installation of sediment and erosion control measures.
3. Tree removal and the pruning and trimming of trees in sections along Route 38.
4. Construction of new catch basins, drainage improvements and culvert replacements/extensions in sections along Route 38.
5. Construction of improvements to the existing water system
6. Traffic Management throughout construction.
7. Clearing and rough grading along Route 38 including areas for wetland replication and flood storage compensation areas.
8. Construction of the stormwater SCMs
9. Construction of the retaining wall south of the Route 38 and Route 62 Intersection.
10. Construction and installation of the sidewalk, curb ramps, and curbing in sections along Route 38.
11. Construction and installation of the proposed traffic signals equipment.
12. Demolition of pavement in sections along Route 38.
13. Milling of pavement where needed.
14. Roadway full depth construction, upgrading signage and pavement markings.
15. Construction of wetland replication area, installation of wetland replication area plantings and maintenance of plantings.
16. Construction of flood storage compensation area.
17. Installation of landscaping and grassed areas.
18. Maintaining wetland replication area: checking for plantings that are damaged or failing to thrive and adjusting/replacing plantings as recommended by Wetland Specialist.
19. Removal of sediment and erosion control measures and dispose of same.

Equipment that is likely to be utilized for this project includes dump trucks, flatbed trucks, front-end loader(s), backhoe(s), skid steer(s), excavator, hoe rams, drilling rigs, concrete pumpers, boom trucks, air hammers, air compressor(s), and a crane. Equipment can be parked on roadway pavements off-limits for construction staging purposes. Staging equipment in Vegetated Wetland or Waterway resource areas shall be prohibited.

## 7.2 STORMWATER RUNOFF/EROSION CONTROL

To protect the resource areas and interests of the WPA during construction, a combination of erosion and sediment control measures will be installed as shown on the attached plan set. Primary erosion control techniques proposed include compost filter tubes, sedimentation fence barriers and floating silt fence. The Contractor will have a stockpile of materials required to control erosion on-site to be used to supplement or repair erosion control devices. These materials will include, but are not limited to, compost filter tubes, sedimentation fence, site bags for catch basins, erosion control matting and crushed stone.

The erosion controls will be maintained in good condition until on-site soils are stabilized. All areas will be permanently stabilized following the completion of construction work. For additional information on erosion and sediment controls, please see the attached Stormwater Management Report in Appendix E of this report.

The project will disturb more than one acre of land during the construction process and will require a NPDES Construction General Permit issued by the Environmental Protection Agency. As a result, the General Contractor will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP document will satisfy the requirements of the Construction General Permit and the construction period erosion, sedimentation and pollution prevention plan requirements outlined in Standard 8 of the Massachusetts Stormwater Handbook.

The following good housekeeping practices will be followed onsite during the construction project:

- An effort will be made to store only enough product required to do the job.
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The site superintendent will inspect daily to ensure proper use and disposal of materials.
- The contractor will be required in the Contract documents to control dust.

## 7.3 HAZARDOUS MATERIALS AND SOLID WASTE

All hazardous waste material will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed.

- All waste materials will be collected and stored in accordance with state and federal law in an appropriately covered container and/or securely lidded metal dumpster.
- All trash and construction debris from the site will be deposited in the dumpster. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal.
- All waste dumpsters and roll-off containers will be located in an area where the likelihood of the containers contributing to storm water discharges is negligible. If required, additional BMPs must be implemented, such as sandbags around the base, to prevent waste from contributing to storm water discharges.
- These practices will be used to reduce the risks associated with hazardous materials. Material Safety Data Sheets (MSDSs) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction office. Since work is located adjacent to wetland resource areas, hazardous fuels or other potential contaminants shall not be stored on site. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific

information in the applicable MSDS for the product they are using, particularly regarding spill control techniques.
- Products will be kept in original containers unless they are not re-sealable.
- Original labels and material safety data will be retained, as they contain important product information.
- Manufacturer, local state, and/or federal recommended methods for proper disposal will be followed if surplus product must be disposed of.

## 7.4 AIR QUALITY

The project has been designed to conform to MassDOT standards and guidelines. The Contractor would be required to abide by the Massachusetts 5-minute idling law for any equipment not actively engaged in construction activities. Furthermore, MassDOT requires that contractors install emission control devices in all off-road vehicles. MassDOT's Revised Diesel Retrofit Specification states emissions control standards must be met, or technology must be used for non-road diesel powered construction equipment in excess of 50 horsepower on MassDOT job sites. Fugitive dust emissions would be limited using industry-best practices, such as watering, sweeping, and wheel-washing.

## 7.5 NOISE

As previously stated, the project is not expected to increase noise levels in the area. The goal of the project is to improve pedestrian and bicyclist accessibility in the area and reduce congestion and traffic. The construction will generate minor temporary noise impacts; however, these impacts are not expected to have disproportionate adverse effects to EJ populations. Additionally, this project is not a Type I action and does not require a noise assessment. Per MassDOT Type I and Type II Noise Abatement Policies and Procedures, § 3.0, it does not involve any of the following:

- The construction of a highway on a new location
- Alteration of an existing highway where there is either a substantial horizontal alteration or a substantial vertical alteration
- The addition of a through traffic lane(s)
- The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane
- The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange
- Restriping existing pavement for the purpose of adding a through traffic lane or an auxiliary lane
- The addition of a new or substantial alteration of a weigh station, rest stop, rideshare lot or toll plaza

Most of the proposed work will take place within the Route 38 corridor and adjacent intersections.

## 7.6 TRANSPORTATION

The anticipated temporary roadway traffic control setups include shoulder closure, lane shifting, and center of road closure setups where sufficient roadway width is available (only at intersections), one-lane alternating traffic setup with police/flagger directing traffic where there is insufficient roadway width to accommodate two travel lanes. The one-lane alternating traffic would only be permitted during midday off-peak hours.

The anticipated temporary intersection traffic control setups include one-quadrant closure setups. The pedestrian and bicycle accommodations are expected to be similar to the existing conditions throughout the construction period.

The proposed traffic mitigation measures to limit impacts to traffic include: night work and staged construction on Route 38; restricting the amount of work during peak hours; and limiting work area/length during a typical work day to ensure the contractor is able to begin and complete a segment of roadway/intersection work so that normal traffic operation can be restored at the end of each work day or work night.

The Temporary Traffic Control Plan (TTCP) for this Project has been developed with a primary goal of preventing unnecessary delays to the motoring public. For the purposes of this Project, regular working hours are expected to be 9:00 AM to 3:30 PM. Any work that is to occur during peak traffic hours (7:00 AM to 9:00 AM and 3:30 PM to 6:00 PM) or during overnight hours (including the locations indicated previously) would require approval by the Town of Wilmington. Work that impacts existing travel lanes would be restricted to off-peak traffic hours. Work would not occur on Saturdays, Sundays or holidays, or on the day before or the day after a long weekend which involves a holiday without prior approval by the Town and MassDOT.

## 7.7 PEDESTRIAN ACCOMODATIONS

There are no pedestrian accommodations along the majority of the corridor. However, there is a sidewalk present on each corner of the Route 38/Route 62 intersection, along the eastern side of Route 38 between the intersections with Route 62 and Route 129, and on the western side of Route 38 near the Route 129 intersection. The sidewalks at the signalized intersections are approximately 5.5 feet wide, in fair condition, and in some cases do not comply with ADA/AAB requirements. The sidewalks are typically not ADA/AAB-compliant elsewhere. The pedestrian signal phase clearance time at the Route 38 and Route 62 intersection is shorter than Manual on Uniform Traffic Control Devices (MUTCD) compliance.

During construction, pedestrian accommodations will be provided or maintained at active work zones per Mass General Laws Chapter 90E Section 2A. Phased construction will be implemented for culvert structure replacement at approx. Sta. 218 near Dublin Avenue to provide continuous safe pedestrian access during construction.

## 7.8 BICYCLE ACCOMODATIONS

There are no bicycle accommodations on the roadway other than bicycle detection at signalized intersections, and limited pedestrian accommodations. Bicyclists currently must ride within the vehicle lanes or on the sidewalks, resulting in safety concerns.

During construction, bicycle accommodations will be provided or maintained at active work zones per Mass General Laws Chapter 90E Section 2A. When existing bicycle facility is unavailable, bikes are expected to ride in the full lane of traffic and obey traffic laws.

# 8.0 PROPOSED MITIGATION AND DRAFT SECTION 61 FINDINGS

This section of the report provides a high-level summary of the proposed measures to avoid, minimize and mitigate environmental impacts. Additionally, this section provides the project's Draft Section 61 Findings.

## 8.1 MITIGATION

The project will avoid, minimize, and mitigate all impacts to the environment to the maximum extent practicable. Listed below are some of the proposed mitigation measures from the project which will protect and/or enhance the existing project site:

- Streambed restoration is proposed within the stream crossing to be replaced
- Construction of wetland replication area and areas of wetland restoration
- Riprap placed for scour countermeasures and bank stabilization will be vegetated with compost and seed mix to mitigate exposed riprap within resource areas
- Protection of wetland resource areas during construction through the implementation of erosion and sedimentation controls.
- Construction of a compensatory flood storage area.
- Implementation of stormwater management practices including three stormwater SCMs, including an infiltration basin, deep sump catch basins with hoods, new drain manholes, and the replacement of existing drainage outfalls
- Areas of tree restoration and control of invasive plants
- Improved bicycle and pedestrian safety through the construction of the proposed shared use path.

Overall, the project expected to have a number of benefits to the Town of Wilmington and the nearby communities as it will promote economic development, reduce traffic congestion on this major connecting Route and in the surrounding area, and provide an alternative means of transportation in this segment of Route 38 in Wilmington through walking or biking.

## 8.2 DRAFT SECTION 61 FINDINGS

**DRAFT ONLY**

**MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION**
**M.G.L CHAPTER 30, SECTION 61**

**PROJECT NAME:** Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn City Line

**PROJECT LOCATION:** Wilmington, Massachusetts

**PROJECT PROPONENT:** Massachusetts Department of Transportation, Highway Division (MassDOT)

**EEA NUMBER:** TBD

**Project Description**

These Findings for the reconstruction of the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line for a total project length of approximately 2.1 miles have been prepared in accordance with the provisions of MGL Chapter 30, Section 61 and 301 CMR 11.00. Town of Wilmington with construction funding from the Massachusetts Department of Transportation, Highway Division (MassDOT).

The project proposes to reconstruct the existing two-lane two-way road to achieve generally two 11-foot lanes and two 5-foot bike lanes along the project corridor. A 5'-6" sidewalk will be added on one, or both sides of the roadway depending on location. There will be two 11-foot southbound travel lanes and a 2-foot shoulder for 900 feet south of the Route 62 and Route 38 intersection. This roadway upgrade will require full-depth reconstruction of the existing Route 38 pavement from Route 62 to Eames Street. Micromilling and resurfacing will be proposed along Route 38 from Eames Street to the Woburn City Line. The project will also incorporate improvements to the existing closed drainage system, including headwall and culvert replacement, and a new water system along Route 38 from Route 62 to Eames Street. The project also proposes to add bicycle accommodations, improve pedestrian accommodations, and install traffic signal improvements along the Route 38 corridor. The project will upgrade the signage and pavement markings to improve driver safety along the project corridor. New signage and pavement markings also will be provided to enhance safety for bicyclists on the widened roadway. Bicycle and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility.

**MEPA Compliance**

The Proponent has completed compliance with the Massachusetts Environmental Policy Act (MEPA) through the filing of an Expanded Environmental Notification Form (EENF) and a Proposed Environmental Impacts Report (EIR) by March 31, 2025. Through the submittal of this dual EENF and Proposed Environmental Impact Report (PEIR), MassDOT Highway Division requests authorization for a rollover EIR.

The Proponent recognizes responsibility for both the identification of appropriate mitigation measures and implementation of proper measures throughout the duration of the project. Accordingly, the Proponent has prepared the table of mitigation measures (Table 8.1) that outline these responsibilities.

**Project Impacts**

There are direct impacts to wetland resource areas associated with the project. The proposed work exceeds the activity thresholds described in *301 CMR 11.03(3)(b)1(d)* for alteration of 5,000 or more sf of bordering or isolated vegetated wetlands and *301 CMR 11.03 (3)(b)(1)(f)* for alteration of ½ or more acres of any other wetland. These impacts are associated with construction activities necessary to achieve the project purpose of improving the roadway infrastructure along Route 38 segment in Wilmington form Route 62 to Woburn City line, reduce traffic back-ups on entering side streets, improve the existing drainage system and provide increased safety for all roadway users. The project activities associated with the proposed roadway, intersections, traffic and drainage improvements were avoided and minimized to the maximum extent practicable; all unavoidable impacts required to achieve the project purpose will be mitigated in accordance with all applicable state and federal requirements as well as incorporation of best management restoration practices.

**Mitigation**

The Project has been designed to minimize environmental impacts. Erosion and sedimentation controls will be installed adjacent to wetland resource areas to minimize potential construction impacts.

A 3,510 square foot wetland replication area will be constructed adjacent to Wetlands "E"- series north of the intersection of Route 38 and the Textron Systems driveway. Additionally, a compensatory flood storage area of 4,161 cubic feet will be located between Sta. 258+00 and Sta. 260+00 on the west side of Route 38 in order to compensate for the lost flood storage that will result from the proposed roadway improvements. The project will result in an overall incremental net cut of 2,007 cubic yards.

The project will provide improvements to the existing drainage system and improve the quality of stormwater runoff discharged to adjacent wetlands. Three infiltration SCMs are proposed to help improve water quality within the project area. Construction of subsurface drainage improvements will extend pavement life spans and will result in improved safety by reducing stormwater ponding on reconstructed roadway pavements. In addition, catch basins will be added to improve runoff. Retrofitting of outfall locations with stone for pipe ends to provide splash pads for stormwater discharges will reduce erosion and movement of sediment into the waterbodies. The proposed stormwater improvements will improve public safety on the roadway, drainage characteristics, help control the flow of stormwater discharged to the adjacent wetlands, and improve the quality of discharged stormwater, to the maximum extent that it is practical.

**Draft Section 61 Findings**

In accordance with MGL Chapter 30, Section 61, each agency of the Commonwealth that is taking an Agency Actions must make a finding that feasible measures have been taken by the Proponent to avoid, minimize, and mitigate damage to the environment to the maximum extent practicable.

These findings for the Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn City Line in Wilmington, MA have been prepared in accordance with the provisions of MGL Chapter 30, Section 61 and 301 CMR 11.00. The proposed mitigation measures for the project are described in the Proposed Environmental Impact Report (EIR).

Measures to mitigate impacts of the Project have been developed throughout the planning and environmental review processes. [Agency] has concluded that there are no significant unmitigated impacts proposed by this Project.

For the reasons stated above, [Agency] hereby finds that pursuant to MGL Chapter 30, Section 61, the construction of the Project as described above, and with the implementation by the Proponent of the noted mitigation measures, all practicable means and measures will be taken to avoid or minimize adverse environmental impacts related to the Project.

*Table 8.1: Summary of Impacts and Mitigation Measures*

| Subject Matter | Potential Impacts | Mitigation Measures | Schedule |
|---|---|---|---|
| **Wetland Resources** | 2,806 SF (perm) and 2,329 SF (temp) of BVW impacts<br><br>262 SF (perm) and 195 SF (temp) of LUW impacts<br><br>64 LF (perm) and 15 LF (temp) of Bank impacts<br><br>2,115 CF of flood storage lost | A 3,510 SF wetland replication area has been designed to mitigate permanent BVW impacts. Temporarily disturbed wetlands will be restored.<br><br>Compensatory flood storage of 4,161 CF is proposed to mitigate the 2,155 CF of fill within the floodplain in excess of the required volume to comply with the WPA regulatory requirements. The 2,007 CF net cut will provide additional flood storage beneficial for the long-term climate adaptation/future flood mitigation Riprap placed for scour countermeasures and bank stabilization will be vegetated with compost and seed mix to mitigate exposed riprap within resource areas.<br><br>Erosion and sediment control (ESC) measures will be installed during construction to protect adjacent resource areas. | During and after construction |
| **Stormwater** | Increase in impervious cover of 60,722 SF | Three (3) stormwater SCMs (1 aboveground infiltration basin, 2 subsurface infiltration systems), deep sump catch basins with hoods, pretreatment with isolator rows in the subsurface systems and a forebay in the infiltration basin, new drain manholes, replacement of existing drainage outfalls proposed to capture and treat runoff and reduce peak rates.<br><br>The proposed drainage systems will maintain the historic drainage patterns, distributing runoff to the existing discharge points.<br><br>The proposed outfalls are located at or near existing outfalls where there is an existing point source discharge. | During and after construction |
| **Environmental Justice** | Increased opportunity for pedestrian and bicycle travel<br><br>Stormwater management improvements will result in improved water quality<br><br>Temporary construction period impacts resulting from increased noise and transport and operation of construction equipment<br><br>Reduced traffic and enhanced pedestrian and bicycle amenities may result in improved air quality<br><br>Increase in impervious cover of 60,722 SF<br><br>Clearing and grubbing of approx. 4 acres | The EJ Maps Viewer was used to identify potential EJ populations and languages that are within the Project's DGA.<br><br>The EJ Screening Form was distributed to the list of CBOs provided by the MEPA Environmental Justice Office on January 23, 2025. Notifications were also distributions to additional CBOs identified by the project applicant.<br><br>The EJ Screening Form was translated into Portuguese, the language spoken by at least 5% of the population who do not speak English fluently.<br><br>The project team will continue to hold meetings with state and local agencies and the communities within DGA as the project progresses.<br><br>The Proponent will continue to notify the public of project updates with translation services being offered to public; the Proponent will advertise legal ads in both languages (English and Portuguese).<br><br>Project coordination with public will continue with information available on MassDOT's website, on MEPA website and through a MEPA site visit available to the public, with option to request interpretation services.<br><br>Wetland replication and restoration, Riverfront Area restoration, Stormwater mitigation, and compensatory flood storage are provided within the scope of this project to minimized environmental impacts to surrounding EJ communities. | Pre-, during, and post-construction |

| | | | |
|---|---|---|---|
| **Land** | Increase in impervious cover of 60,722 SF<br><br>Clearing and grubbing of approx. 4 acres | Erosion and sediment control Stormwater Control Measures (SCMs) will be installed during construction to protect adjacent resource areas.<br><br>Three stormwater SCMs, deep sump catch basins with hoods, new drain manholes, and the replacement of existing drainage outfalls, are proposed to capture and treat runoff and reduce peak rates.<br><br>The existing degraded Riverfront Area and all other disturbed areas will be stabilized and restored upon completion of the project. | Pre-, during, and post-construction |
| **Construction Period** | Temporary construction period impacts resulting from increased noise and transport and operation of construction equipment | Erosion and sediment controls will be utilized throughout the entire construction period to minimize impacts to the surrounding resource area.<br><br>All areas will be permanently stabilized following the completion of construction work.<br><br>All hazardous waste material will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products.<br><br>A Temporary Traffic Control Plan (TTCP) for this Project has been developed with the goal of preventing unnecessary delays<br><br>During construction, pedestrian and bicycle accommodations will be maintained at active work zones per Mass General Laws Chapter 90E Section 2A. | Prior to and during construction |
| **Climate Change Adaptation and Resiliency** | Increase in impervious cover of 60,722 SF<br><br>Clearing and grubbing of approx. 4 acres<br><br>Reduced traffic and enhanced pedestrian and bicycle amenities may result in improved air quality | Implementation of Stormwater Control Measure/Best Management Practices to improve water quality.<br><br>Wetland restoration, wetland replication, and compensatory flood storage to mitigate wetland and flooding impacts. The additional flood storage provided will be advantages for the long-term climate adaptation.<br><br>Riverfront Area restoration to improve surrounding ecosystem. Addition of pedestrian and bicycle facilities to reduce traffic | During construction |
| **Solid and Hazardous Waste** | No AULs on any portion of project site | Materials will be re-used and recycled to the maximum extent practicable.<br><br>Equipment to be refueled at pre-approved, designated area with appropriate spill prevention and control measures.<br><br>MassDEP shall be notified if oil and/or hazardous materials are found during construction in accordance with the Massachusetts Contingency Plan (310 CMR 40.00). | During construction |
| **Historical and Archaeological Resources** | None – Section 106 Cleared with No Effect | Performed historic and archeological assessment of the project corridor. | Completed 10/11/2024 |

# APPENDICES (BOUND SEPARATELY)

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DOCUMENT A00827

# CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS ON THE FINAL ENVIRONMENTAL IMPACT REPORT

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The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
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August 1, 2025

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

| | |
|---|---|
| PROJECT NAME | : Reconstruction of Route 38 |
| PROJECT MUNICIPALITY | : Wilmington |
| PROJECT WATERSHED | : Ipswich |
| EEA NUMBER | : 16942 |
| PROJECT PROPONENT | : Massachusetts Department of Transportation (MassDOT) |
| DATE NOTICED IN MONITOR | : June 25, 2025 |

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61- 62L) and Section 11.06 of the MEPA Regulations (301 CMR 11.00), I have reviewed the Final Environmental Impact Report (FEIR) and hereby determine it **adequately and properly complies** with MEPA and its implementing regulations.

As noted in my Certificate on the Expanded Environmental Notification Form (EENF) and Proposed EIR issued on May 30, 2025, the Proponent was directed to file a response to comments received on the EENF and Proposed EIR (the "EENF/Proposed EIR") and Proposed Section 61 Findings pursuant to 301 CMR 11.06(14)(b). The response to comments and Proposed Section 61 Findings were published for review in the *Environmental Monitor* as a FEIR pursuant to Section 11.06(14)(b) of the MEPA regulations and was subject to a 30-day comment period during which time comments from the Massachusetts Water Resources Authority (MWRA) were received.

Project Description

As described in the FEIR, the Town of Wilmington (the "Town") in conjunction with the Massachusetts Department of Transportation (MassDOT) is proposing to reconstruct the Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line in the Town

of Wilmington, MA. The project will reconstruct the existing two-lane two-way road to achieve generally two 11-foot (ft) lanes and two 5-ft bike lanes along the project corridor. A 5-6 ft sidewalk will be added on one or both sides of the roadway depending on location. South of the Route 62 and Route 38 intersection, there will be a northbound travel lane and two 11-ft southbound travel lanes and a 2-ft shoulder for 900 ft of the project corridor. The project will also incorporate improvements to the existing closed drainage system, including headwall and culvert replacement, and a new water system along Route 38 from Route 62 to Eames Street. The project also proposes to add bicycle accommodations and improved pedestrian accommodations, and to install traffic signal improvements along the Route 38 corridor. The project is also proposing drainage improvements which include the installation of new deep sump catch basins with hoods, new drain manholes, replacement of existing drainage outfalls, as well as three proposed infiltration Stormwater Control Measures (SCMs) to mitigate the increase in peak rates of runoff from new impervious area.

The project will also include the replacement of an existing bridge carrying Route 38 over Maple Meadow Brook. The FEIR indicates that this portion of the project is subject to a statutory exemption from M.G.L. c. 91 and Wetlands Protection Act (M.G.L. c. 131, § 40) permitting under a provision of the 2014 Transportation Bond Bill (St. 2014, c. 79, § 24). That provision states that these permits (and MEPA review) "shall not apply to bridge projects of the Massachusetts Department of Transportation and the Massachusetts Bay Transportation Authority for the repair, reconstruction, replacement or demolition of existing state highway, authority and municipally-owned bridges, including the immediate approaches necessary to connect the bridges to the existing adjacent highway and rail system, in which the design is substantially the functional equivalent of, and in similar alignment to, the structure to be reconstructed or replaced . . . ." The exemption for MEPA review does not apply if a project requires a "mandatory environmental impact report under 301 CMR 11.00." It is unclear whether this phrase refers to the mandatory EIR thresholds under 301 CMR 11.03 (which do not apply to this project), or to any requirement to file an EIR under MEPA regulations. In addition, the bridge replacement cannot be segmented form other components in order to evade MEPA review under anti-segmentation provisions in 301 CMR 11.01(2)(c). Nevertheless, the FEIR provided a copy of the 401 Water Quality Certification (WQC) application and Section 404 Pre-Construction Notification (PCN) application (to U.S. Army Corp of Engineers) which include a description of the bridge replacement work, to provide complete disclosures of all project components. The WQC and PCN applications were filed for the linear and bridge components in early April 2025. As detailed in the WQC application, the bridge replacement work involves the replacement of the existing 36.5 ft single-span three-sided frame bridge with a new single-span structure featuring a curb-to-curb width of 32 ft. The bridge superstructure will be comprised of 9 three-sided precast concrete frame segments. These segments will be constructed with minimal impact to Maple Meadow Brook and will maintain the existing hydraulic opening. Where possible, the existing natural streambed material will be maintained. Any rip rap placed for scour protection will be fully covered in a layer of natural streambed material. The bridge will be supported by new cast-in-place footings on micropiles which will be offset from the existing abutment footprints, increasing the span length from 11.7 ft to approximately 12 ft.

Project Site

The proposed project is located along Route 38 in Wilmington. Route 38 is an Urban Principal Arterial, located west of Interstate I-93 and east of Route 3A, generally providing northwest and southeast movement between the towns of Tewksbury, Wilmington, Woburn, Winchester and Medford.

The Route 38 project segment to be reconstructed and improved runs from Route 62 (Burlington Avenue/Church Street) in Wilmington to the Woburn city line for an approximate project length of 2.1 miles.

State and local wetland resource areas located within and adjacent to the project site include Bank, Bordering Vegetated Wetlands (BVW), Land Under Waterbodies and Waterways (LUWW), Bordering Land Subject to Flooding (BLSF), and Riverfront Area (RA). According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (Panel No. 25017C0291E, effective June 14, 2010), a portion of the project site along Maple Meadow Brook is located within the 100-year floodplain on the current effective FIRM in a Zone AE with a Base Flood Elevation (BFE) of 82.9 ft NAVD88 upstream and 81.5 ft NAVD88 downstream. A portion of the site (where the bridge replacement will occur) is also located within regulatory floodway. The project site does not contain Priority Habitat of Rare Species/Estimated Habitat of Rare Wildlife, Areas of Critical Environmental Concern (ACEC), or Outstanding Resource Waters (ORW).

The project site is located within one mile of five Environmental Justice ("EJ") Populations characterized by Minority and Income. As described below, the FEIR identified the "Designated Geographic Area" (DGA) for the project as one mile around EJ Populations, included a review of potential impacts and benefits to the EJ Populations within this DGA, and described public involvement efforts undertaken to date.

Environmental Impacts and Mitigation

Potential environmental impacts associated with the project (not including bridge replacement activities) include approximately 79 linear feet (lf) of impacts to Bank (65 lf permanent/ 15 lf temporary), 4,829 square feet (sf) of impacts to BVW (2,625 sf permanent/ 2,204 sf temporary), 461 sf and 65 cubic yards (cy) of impacts to LUWW (400 sf permanent/ 61 sf temporary), 6,815 sf of permanent impacts to BLSF, and 71,960 sf of permanent impacts to RA.[1] As shown in the 401 WQC, the bridge replacement will result in permanent and temporary impacts to LUWW (2,118 sf permanent/ 546 sf temporary) as well as 650 cy of dredge and fill volume.

Measures to avoid, minimize, and mitigate project impacts include construction of stormwater management Best Management Practices (BMPs); construction of a 3,510 sf BVW replication area to mitigate permanent impacts BVW; creation of 4,161 cubic feet (cf) of compensatory flood storage capacity[2]; restoration of impacted areas of LUWW and RA, including replanting of native vegetation; and implementation of mitigation measures during construction to minimize noise, air, water, and traffic impacts.

Jurisdiction and Permitting

This project is subject to MEPA review because it requires Agency Action and meets/exceeds the MEPA review threshold at 301 CMR 11.03(3)(b)(1)(f) for the alteration of ½ or more acres of any

[1] In coordination with MassDEP, the Proponent submitted revised impacts for BVW and LUWW during the prior review of the EENF/Proposed EIR.
[2] The lost flood storage volume of 2,155 cf will be compensated by the creation of 4,161 cf of storage.

other wetlands.[3] The project is required to prepare an EIR pursuant to 301 CMR 11.06(7)(b) because it is located within a DGA of one or more EJ Populations. The project will require an Agency Action in the form of a 401 WQC from the Massachusetts Department of Environmental Protection (MassDEP).

The project received an Order of Conditions (OOC) from the Wilmington Conservation Commission (MassDEP File No. 344-1566) on July 17, 2025, which was not appealed.[4] The project will also require a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) from the United States Environmental Protection Agency (EPA.

Because the project is being undertaken by an Agency (MassDOT), MEPA jurisdiction is broad in scope and extends to all aspects of the project that are likely, directly or indirectly, to cause Damage to the Environment as defined in MEPA regulations.[5]

Review of the FEIR

The FEIR included a project description, alternatives analysis, existing and proposed conditions plans, estimates of project-related impacts, a Hydrologic and Hydraulic Analysis (H&H Analysis), a copy of the 401 WQC application, and an identification of measures to avoid, minimize and mitigate environmental impacts. It included a description of measures taken to enhance public involvement by EJ Populations and a baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ Populations. Consistent with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency, the FEIR contained an output report from the Climate Resilience Design Standards Tool prepared by the Resilient Massachusetts Action Team (the "MA Resilience Design Tool"),[6] together with information on climate resilience strategies to be undertaken by the project.

I note that the Proponent did not include the previously submitted Proposed EIR in the filing as part of the FEIR. However, the FEIR incorporates by reference the information previously provided in the Proposed EIR and in the supplemental information provided on May 19, 2025 and May 23, 2025. For purposes of clarity, all information provided in the FEIR, Proposed EIR, and supplemental materials are included in references to the "FEIR" unless otherwise indicated.

*Alternatives Analysis*

As noted above, the project corridor currently does not provide sufficient bicycle and pedestrian facilities. Pedestrian accommodations are limited to specific areas, and existing sidewalks are substandard, often failing to meet ADA/AAB requirements. Cyclists must either share vehicle lanes or use sidewalks, creating safety concerns. According to the FEIR, in order to comply with MassDOT's

[3] As noted, the Proponent provided revised wetland impact calculations during MEPA review which reduced BVW impacts from 5,135 sf to 4,829 sf. Based on this change, the project no longer exceeds the threshold at 301 CMR 11.03(3)(b)(1)(d) for the alteration of 5,000 or more sf of bordering or isolated vegetated wetlands.
[4] Issuance of the OOC confirmed via email from Oxana Fartushnaya (Green Intl) to Nicholas Moreno (MEPA) on July 29, 2025.
[5] According to the FEIR, the project is included in the 2025 Transportation Improvement Program with MassDOT allocating 20% of construction costs, with the remaining 80% being funded by the Federal Highway Administration.
[6] Available at: https://resilientma.mass.gov/rmat_home/designstandards/

Healthy Transportation Policy, the project must include compliant sidewalks and bicycle facilities. The FEIR analyzed several design alternatives to meet MassDOT policy requirements.

A project-wide No-Build Alternative was analyzed, which proposes maintaining the existing roadway configuration. According to the FEIR, this alternative would not meet the project goals for improving roadway conditions and improving bicycle and pedestrian safety. For these reasons, this alternative was dismissed.

The Pedestrian Accommodation Alternative proposes installing 5-ft-wide sidewalks on both sides of the roadway. According to the FEIR, the MassDOT Healthy Transportation Policy requires 5-ft-wide sidewalks on both sides of the roadway in urbanized areas. The FEIR notes while this alternative would meet the design requirements, it would also trigger over 4,000 sf of right-of-way (ROW) impacts, an additional 500 sf of wetland resource impacts, and the relocation of 20 utility poles. This alternative would also result in additional impacts to adjacent property owners. The Preferred Alternative will include sidewalks placed only on the west side of the roadway, serving residential areas and public parks, minimizing impacts on wetlands and utility infrastructure. The east side, which is primarily wooded and industrial areas, will not include sidewalks. The FEIR notes that a design exception was requested and approved by MassDOT for this modification. Due to the increased impacts to wetlands and utility infrastructure, this alternative was dismissed.

The Bicycle Accommodation Alternative would involve the installation of 5-ft shoulders to accommodate bike lanes on both sides of the project corridor. According to the FEIR, the MassDOT Design Guide requires bicycle accommodation using a minimum 5-ft shoulder for projects in urbanized areas. The FEIR notes space constraints as a limitation. Expanding the shoulder to 5 ft would require reconstructing a retaining wall and impacting adjacent properties and businesses. The Preferred Alternative utilizes a 2-ft shoulder width in constrained areas while maintaining a 5-ft shoulder width elsewhere within the project limits to serve as a bicycle lane. The FEIR notes that a design exception was requested and approved by MassDOT for this modification. Due to space constraints, this alternative was dismissed.

The Roadway Lane Configuration Alternative would include the construction of 12-ft travel lanes and 8-ft shoulders, where possible, to meet the MassDOT standard for NHS Non-Freeway roadways. According to the FEIR, in order to accommodate this standard, the project would require an additional 8 ft of roadway widening, 3,565 sf of permanent wetland resource impacts, 16 trees removed, and impacts on MBTA platform retaining walls, utility pole location and electrical towers. The Preferred Alternative utilizes an 11-ft travel lane and 5-ft shoulder approach with additional reductions in shoulder width in constrained areas. The FEIR notes that a design exception was requested and approved by MassDOT for this modification. Due to the potential impacts listed above, this alternative was dismissed.

The Horizontal/Vertical Alignment Alternative would include meeting the minimum length of 15 times the design speed for horizontal curves and specific K values for vertical alignments as outlined by MassDOT. According to the FEIR, meeting the horizontal curve standards would result in land being taken from 11 properties, a 1,300 sf increase in wetland resource impacts, and bridge/retaining wall reconstructions. Additionally, some of the challenges presented from meeting the vertical alignment requirements include:

- Lowering or raising the roadway significantly
- Rebuilding retaining walls
- Hydraulic opening of existing culverts and headwalls
- Introduces new high/low points that may require new retaining walls
- Driveways would be steeper than the existing grade if the profile is raised
- Minimum cover for underground utilities
- Extending the limit of grading.

The FEIR notes that the Preferred Alternative has optimized safety for these two design components without fully meeting the design standard, and that a design exception was requested and approved by MassDOT for this modification. Due to the impacts listed above, this alternative was dismissed.

The Preferred Alternative, as described herein, includes the construction of two 11-ft travel lanes and two 5-ft bike lanes along the project corridor, as well as a 5-6 ft sidewalk on the west side of the roadway. This Alternative was selected as it minimizes impacts to environmental resource areas while providing an adequate level of pedestrian and bicycle accommodations throughout the urbanized section of the corridor. It also requires the least amount of utility relocations to support these facilities, thereby limiting wetland impacts.

As discussed above, the project also includes bridge replacement work, which the Proponent has indicated is exempt from permitting under M.G.L. c. 91 and the Wetlands Protection Act (WPA). In the FEIR, the Proponent provided a copy of WQC application, which includes a description of the proposed work. The WQC application notes that the replacement of the existing bridge, which carries Route 38 over Maple Meadow Brook, is needed due to its structural deficiency, age and due to scour making it difficult to locate the bridge abutments. The application notes that the bridge replacement is the functional equivalent and in similar alignment to the existing bridge.

*Environmental Justice (EJ) / Public Health*

As noted above, the project is located within one mile of five EJ Populations characterized by Minority criteria. The FEIR identified the DGA for the project as one mile. Portuguese and Portuguese Creole were identified as languages spoken by 5% or more of Limited English Proficiency ("LEP") residents within one mile of the project site. According to the FEIR, EJ neighborhoods are located within the adjacent Towns of Burlington and Woburn.

*Community Engagement*

The Proponent prepared an EJ Screening Form, which was translated into the languages identified above, and distributed to a list of community-based organizations (CBOs) and tribes/indigenous organizations (the "EJ Reference List") developed by the Proponent from a list provided by the MEPA Office. The EJ Screening Form included contact information to request information about the project and/or translation services. Notice of the MEPA remote consultation session was also distributed to the EJ Reference List, and the meeting was held during the evening to accommodate residents who may be unable to attend meetings during working hours. The notice of the

MEPA remote consultation session was translated into Portuguese. Interpretation services in Portuguese were offered upon request (no requests were received). As previously indicated in the EENF/Proposed EIR, several public meetings and outreach efforts were held throughout the design phase for the project, as listed in the table below:

*Table 2.2: Public Outreach and Coordination Meetings*

| Outreach Type | Date |
|---|---|
| Board of Selectmen Meeting | July 12, 2017 |
| Abutters Meeting | January 9, 2017 |
| 25% Design Public Hearing | June 12, 2020 |
| Translated EJ Screening Form to EJ Reference List/CBOS | January 23, 2025 |
| Distributed EENF and EIR to EJ Reference List/CBOS | October 6, 2025 |
| Environmental Justice Strategy meeting with project team | January 3, 2025 |
| Pre-Filing 401/404 Application site walk with MassDEP and ACOE | January 10, 2025 |
| Public Notice for EENF Filing | The week of April 21, 2025 |
| Distribution of Project Fact Sheet with the communities (Wilmington, Woburn and Burlington) | April 3, 2025 and April 14, 2025 |

The FEIR confirms that project coordination with the public will continue with information made available on the MassDOT website.[7] In addition, the project team has developed a project fact sheet with project details, which will be posted on the municipal websites (for the Towns of Wilmington, Woburn, and Burlington). A hard copy of the FEIR will be available for review in the Wilmington Public Library. The Proponent has committed to continuing to inform the public about the project and its status during the review of the FEIR and after the review is completed. The Proponent confirms that the project will continue to provide any necessary translation services.

*Baseline Assessment and Project Impacts*

The FEIR contained a baseline assessment of any existing unfair or inequitable Environmental Burden and related public health consequences impacting EJ Populations in accordance with 301 CMR 11.07(6)(n)1. and the MEPA Interim Protocol for Analysis of EJ Impacts. As noted above, there are no EJ neighborhoods located within the Town of Wilmington. According to the FEIR, the data surveyed showed some indication an existing "unfair or inequitable" burden impacting the identified EJ Populations. Specifically, the filing notes that the DPH EJ Tool identifies the Town of Burlington in which the EJ Populations are located as exhibiting "vulnerable health EJ criteria"; this term is defined in the DPH EJ Tool to include any one of four environmentally related health indicators that are measured to be 110% above statewide rates based on a five-year rolling average. The DPH EJ Tool identifies one census tract (2230) in Burlington that meets the vulnerable health EJ criteria for Low Birth Weight.

In addition, the FEIR indicates that the following sources of potential pollution exist within the DGA based on the mapping layers available in the DPH EJ Tool:

- MassDEP Major Air and Waste Facilities: 21

[7] See: https://www.mass.gov/wilmington-reconstruction-of-route-38-main-street-from-route-62-intersection-to-woburn-city-line

- M.G.L. c. 21E Sites: 4
- Massachusetts (Tier II) Toxics Use Reporting Facilities: 26
- MassDEP sites with AULs: 11
- MassDEP groundwater discharge permits: 1
- MassDEP public water suppliers: 1
- Wastewater treatment plants: 2
- Underground storage tanks: 15
- EPA facilities: 34
- Road infrastructure: 3 State Routes (Route 129, Route 38 and Route 62), Interstate, 0 US Highway
- MBTA bus and rapid transit: 42
- Other transportation infrastructure: 14
- Regional transit agencies: 2 - Lowell Regional Transit Authority (LRTA) & Massport
- Energy generation and supply: 2

The FEIR states that while the EJ Populations within the DGA may exhibit some existing unfair or inequitable environmental burden, the project is not expected to materially exacerbate such existing conditions. The FEIR asserted that the project will implement measures that will minimize construction period impacts and mitigate impacts to wetlands and flood storage. According to the FEIR, the project will promote healthy modes of transportation. The project will provide safe crossings of Route 38, which currently serve as barriers to cyclists and pedestrians. The project is expected to have a number of benefits to the EJ Populations in the area, as it will promote economic development, reduce traffic congestion in the surrounding area, and improve the existing drainage system.

According to the output report from the MA Resilience Design Tool included in the FEIR, the project site has a high exposure to urban and riverine flooding due to extreme precipitation and extreme heat. EJ Populations in close proximity to the site, including in areas adjacent to Proctor Brook, are likely also exposed to these climate risks. According to the FEIR, the project includes measures to minimize potential off-site flooding, including construction of a new stormwater management system and provision of compensatory flood storage volume to mitigate impacts to the floodplain.

*Stormwater*

According to the FEIR, the project will result in an increase of 1.4 acres of impervious area due to roadway widening. The width of the disturbance will include slope grading along the shoulders of the roadway. Currently, a majority of the existing stormwater management along the project corridor is classified as “country drainage.” The project is proposing the installation of new deep sump catch basins with hoods, new drain manholes, replacement of existing drainage outfalls, as well as three proposed infiltration Stormwater Control Measures (SCMs) to mitigate the increase in peak rates of runoff. The proposed outfalls are located at or near existing outfalls where there is an existing point source discharge. The FEIR notes that these improvements are necessary to mitigate for the construction of additional impervious areas and to provide stormwater management where none presently exists. The deep sump catch basins will capture sediment within and provide up to 25% total suspended solids (TSS) removal. The project utilized NOAA Atlas 14 Precipitation Data to model current precipitation intensities. The FEIR indicates that the project will fully meet the Massachusetts Stormwater

Management Standards (SMS) Standard 1, which includes no new untreated discharges. All new outfalls are designed with flared end sections and rip rap protection to prevent erosion to the existing wetland systems. There are no new untreated point source discharges created as a result of this project. The project intends to comply with standards 2, 3, 4 and 6 to the maximum extent practicable. The peak flow rates were calculated for the 2-, 10-, and 100-year storm events under proposed conditions and compared to the existing peak flow rates. Peak volumes for the 100-year storm showed negligible increases at different design points, with all peak flow rates indicating an increase of less than 1-inch or 1 cubic foot per second (cfs).

Comments provided by MassDEP on the EENF/Proposed EIR stated that it appeared that Standard 3 was being met using a "macro" approach, rather than to the maximum extent practicable.[8] Comments stated that installing a SCM within the proposed compensatory flood storage area to better meet the SMS to the maximum extent practicable should be further evaluated. In response to comments, the FEIR states that the proposed design for the compensatory flood storage area is to protect/retain the existing mature trees to the extent feasible, which is why the limit of work is irregular. The FEIR states that the compensatory flood storage area was designed to provide flood storage at each incremental as well as to minimize impacts adjacent to wetland areas. While the flood storage area will be located within a 0 to 100-ft segment of the vegetated RA, the mature vegetation within the RA is known to provide a natural buffer for stormwater discharges prior to reaching surface waters. According to the FEIR, estimated seasonal high groundwater was determined through observations of the moisture content in soil borings. The FEIR states that groundwater is particularly high in close proximity to Wetland "G;" therefore, surface and subsurface SCMs at this location would not be feasible and would require removal of trees. Therefore, the incorporation of other SCMs was not deemed feasible.

Comments provided by the MWRA on the EENF/Proposed EIR stated that the discharge of groundwater or stormwater to the MWRA sewer system from construction dewatering or draining activities is prohibited in the project area, pursuant to 360 C.M.R. 10.023(1), except in a combined area when permitted by the Authority and the Municipality. The project site will have access to a storm drain and is not located in a combined sewer area; therefore, the discharge of groundwater to the sanitary sewer system associated with the project is prohibited. In response to comments, the FEIR states that any dewatering of groundwater or stormwater required for the implementation of the project will not be discharged to sanitary sewer system. Comments provided by the MWRA on the FEIR acknowledge this response.

*Wetlands and Water Quality*

As noted above, the project will result in temporary and permanent impacts to approximately 79 lf of Bank, 4,829 sf of BVW, 461 sf and 65 cy of LUWW, 6,815 sf of BLSF, and 71,960 sf of RA. Impacts to Bank, BVW, LUWW, and RA will result from roadway widening, installation of erosion and sedimentation controls, culvert replacement, and the installation of stormwater infrastructure. To compensate for impacts to BVW, the project will include a 1:1 wetland replication area totaling approximately 3,510 sf. Replication measures have been designed and sited to replace the lost functions and values of the impacted wetland. Tree and shrub plantings are included as appropriate at wetland

[8] Standard 3 requires the annual recharge from the post-development site to approximate the annual recharge from pre-development conditions.

replication area locations including a total of 24 deciduous trees. In addition, the mitigation plan includes invasive species control measures to reduce the spread of the invasive species existing at the site. Construction specifications have been prepared for invasive species control to protect and minimize impacts to resource areas during construction.

The Wilmington Conservation Commissions reviewed the project for its consistency with the WPA, the Wetland Regulations (310 CMR 10.00) and associated performance standards including the SMS, the Massachusetts Stream Crossing Standards (SCS), and local bylaws. An OOC (MassDEP File No. 344-1566) was issued by the Wilmington Conservation Commission on July 17, 2025, which was not appealed to MassDEP. According to the FEIR, the project encompasses the reconstruction of roads and structures owned by state highway agencies prior to August 7, 1996, meaning activities to maintain these facilities are exempt from requirements of the Massachusetts Rivers Protection Act.[9] Comments provided by MassDEP on the EENF/Proposed EIR stated that it did not appear that all work within the RA is grandfathered or exempted per 10.58(6)(a) as portions will occur within other wetland resource areas (BLSF) and the 100-foot Buffer Zone. Similarly, the minor activity exemption at 310 CMR 10.02(2)(b)2.p. would not apply to portions of the project where the roadway will be slightly widened in the RFA and a new drainage system will be installed, as the exemption is only applicable to adjustments and/or repairs to respective structures within the roadway. According to the FEIR, the Proponent acknowledges that the proposed work is not exempt from requirements for the RA under provision of 310 CMR 10.58(6) due to the RA overlapping with other protected wetland resource areas, namely BLSF and BVW. The FEIR also confirms that due to BLSF and BVW impacts within the RA where work is proposed, any minor activities would not be exempt per 310 CMR 10.02(2)(b)2. Therefore, the FEIR details how the project is intended to comply with the performance standards for the RA, as set forth in 310 CMR 10.58(4) as follows:

- RA associated with Maple Meadow Brook extends over 86,013 sf of the project area on Route 38. However, the work within WPA jurisdiction will occur within approximately 68,532 sf of RA.
- The RA within the project area consists of existing paved roadway and adjacent shoulders. Majority of the proposed work within this area is located within the limits of existing pavement, which is considered to be “degraded” RA, therefore, the majority of the proposed work is considered Redevelopment.
- Minor portion of the proposed box widening to accommodate roadway improvements required to provide safety accommodations for all roadway users as well as the drainage improvements (proposed outfall on the east side of Route 38 north of the bridge are located within the non-degraded RA and, therefore, is not considered Redevelopment, therefore alternatives were evaluated for this work per 310 CMR 10.58(4).

The FEIR notes that tree restoration/replanting is proposed within the 200-ft RA of Maple Meadow Brook. All proposed trees and plantings will be within the public ROW. There are a total of 36 deciduous trees being planted in upland areas, and 24 deciduous trees being planted inside the Wetland Replication Area. The areas of proposed restoration within RA on site exceed the amount of impacted undeveloped RA at a ratio greater than 1:1.

[9] See here: https://www.mass.gov/guides/rivers-protection-act-questions-answers.

As noted above, the project is proposing 6,815 sf and 18 cy of impacts to BLSF associated with the proposed full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and new drainage outfalls in select locations, which will be mitigated through construction of compensatory flood storage area. The compensatory flood storage area will provide 4,161 cubic feet (cf) of flood storage. The project is able to compensate the entire project's flood storage loss between elevations 80-92.9 ft. The constructed compensatory storage area will be restored with an application of loam and a native seed mix.

According to the FEIR, an existing box culvert conveys an unnamed Intermittent Stream under Route 38. The EENF/Proposed EIR stated that the culvert was proposed to be replaced with a 3ft-by-3ft precast concrete box culvert in order to help prevent future obstructions. Comments provided by MassDEP on the EENF/Proposed EIR stated that the culvert at the unnamed Intermittent Stream is 3.5 ft wide and the proposed culvert is 3.0 ft wide. Comments indicated that additional evaluation as to whether the culvert may be further widened and how the project could be designed to meet the SCS, should be conducted. According to the FEIR, the dimensions of the existing culvert were incorrectly reported in the H&H analysis provided with the EENF/Proposed EIR. Based on field measurements, the existing culvert is 3.0 ft wide by 1.5 ft tall. The Proponent also reevaluated opportunities to improve the proposed culvert to meet the SCS. The project is now proposing a 4 ft wide by 3 ft tall precast concrete box culvert, which slightly exceeds the 1.2 times bankfull width measurement required by the SCS. However, the replacement culvert will only meet Standards 1, 2, 6 to the maximum extent practicable as the replacement culvert will not be an open bottom structure, will be embedded less than 2 ft into the substrate, and will only provide a minimum level of openness of 0.82 ft.

As noted, the EENF/Proposed EIR did not provide disclosures related to the Route 38 bridge replacement, including whether the bridge under current or proposed conditions will meet SCS. During the MEPA review period, the Proponent provided a copy of the WQC application, dated April 10, 2025, in response to an inquiry from the Ipswich River Watershed Association (IRWA); the WQC application is also included in the FEIR. The WQC application notes that the replacement of the existing bridge, which carries Route 38 over Maple Meadow Brook, is needed due to its structural deficiency, age and due to scour making it difficult to locate the bridge abutments. The application notes that the bridge replacement is the functional equivalent and in similar alignment to the existing bridge. The bridge replacement will have permanent and temporary impacts to LUWW (2,118 sf permanent/ 546 sf temporary) as well as 650 cy of dredge and fill volume. The proposed replacement will achieve partial compliance with the SCS by conforming with Standards 1, 4 and 5. Full compliance with Standard 3 requiring a minimum opening of 1.2 times bankfull width, is deemed infeasible, and Standard 2 does not apply. Comments provided by the Massachusetts Water Resources Commission (WRC) on the EENF/Proposed EIR stated that Wilmington's Flood Plain District prohibits any encroachment in the regulatory floodway that would result in any increase in flood levels during the occurrence of the base flood discharge. Comments from the WRC noted that as described in the supplemental WQC application, it appears this requirement has been met. The FEIR states that the proposed bridge replacement will not encroach into the regulatory floodway and will provide the same hydraulic capacity as the existing bridge. Therefore, the FEIR states that there will be no rise in BFE.

*Climate Change*

*Adaptation and Resiliency*

Effective October 1, 2021, all MEPA projects are required to submit an output report from the MA Resilience Design Tool to assess the climate risks of the project. Based on the revised output report submitted as supplemental information, the project has a "High" exposure rating based on the project's location for the following climate parameters: extreme precipitation (urban flooding), extreme precipitation (riverine flooding) and extreme heat. Based on the 75-year useful life and the self-assessed criticality of the project, the MA Resilience Design Tool recommends a planning horizon of 2070 and a return period associated with a 50-year (2% chance) storm event for the roadway reconstruction, and a planning horizon of 2070 with a return period associated with a 25-year (4%) chance storm event for the culvert replacement. The Tool recommends planning for the 50th percentile with respect to extreme heat (which indicates an increase in extremely hot days as compared to a historical baseline).

The MA Resilience Design Tool output indicates that the site has a maximum annual daily rainfall exceeding 10 inches within the overall project's useful life. This factor is indicated in the Tool as contributing to the "High" exposure for the extreme precipitation (urban flooding) parameter. According to the MA Resilience Design Tool output, the projected 24-hour precipitation depth associated with a 2070 50-year storm event is 8.9 inches. Based on the NOAA Atlas 14 Data that was used for the project design, it appears that the stormwater system, which is designed to convey and provide recharge for the current 100-year storm (8.11 inches) would be resilient to the future (2070) 50-year storm event as recommended by the Tool (8.9 inches). The FEIR notes that while the project will result in an increase in impervious area, the project plans include significant improvement to the existing stormwater management infrastructure, including new deep-sump catch basins with hoods, stormwater swales and SCMs. The Proponent has committed to complying with MassDEP's SMS to the maximum extent practicable, and the system upgrades will be an improvement over existing conditions.

The Tool also indicates a "High" exposure for the extreme precipitation (riverine flooding) parameter. According to available MassGIS data, Maple Meadow Brook is within a mapped 100-year floodplain on the current effective FIRM in a Zone AE with a BFE of 82.9 ft upstream and 81.5 ft downstream. As discussed above, the project proposes to construct a compensatory flood storage area. The compensatory flood storage area will provide 4,161 cf of flood storage. The compensatory flood storage has been designed to exceed the project's net fill in order to provide a net cut of approximately 2,007 cf across the project which will aid in the project's ability to mitigate flood waters. Compensatory flood storage was designed to meet the Performance Standards at 310 CMR 10.57(4)(a) as required by MassDEP. The constructed compensatory storage area will be planted with native species commonly found within the adjacent floodplain. The impacts to BLSF will not change floodwater flow paths or velocities, or the function of the floodplain, as the compensatory storage area has been designed in close proximity to the fill area and will receive any floodwaters displaced by the project. According to the FEIR, the compensatory flood storage has been designed to exceed the 1:1 cut to fill requirement and will therefore provide additional storage in the event of a flood event. As noted above, the design of the box culvert has been redesigned and will now consist of a 4 ft wide by 3 ft tall precast concrete box culvert which slightly exceeds the 1.2 times bankfull width measurement required by the SCS. in response to MassDEP comments, the design of the box culvert was modified to slightly exceed SCS requirement for bankfull width measurement.

The MA Resilience Design Tool output indicates that the project site is anticipated to have a 30+ day increase in days over 90 degrees Fahrenheit within project's useful life and the project is removing trees. In addition, the existing impervious area of the site is greater than 50%. These series of factors, respectively, are indicated in the Tool as contributing to the "High" exposures for the extreme heat climate parameter. While the project is increasing impervious area within the project site, which can increase local temperatures, the project will be proposing a wetland replication area, wetland restoration and creation of additional flood storage area across the project site, which will aid in reducing the heat island effect through processes such as evapotranspiration, shading, and heat absorption and storage. The FEIR also states that a total of 60 deciduous trees will be planted across the upland and wetland portions of the project area, many of which will be planted along the proposed sidewalks, providing pedestrians with refuge from the sun.

*Greenhouse Gas Emissions (GHG)*

This project is subject to review under the May 2010 MEPA GHG Policy and Protocol (GHG Policy) because it exceeds thresholds for a mandatory EIR. The GHG Policy includes a de minimis exemption for projects that are expected to produce minimal GHG emissions. GHG emissions associated with this project will be limited to the construction period and are de minimis. Therefore, the Proponent was not required to submit a GHG analysis in conjunction with the FEIR.

*Construction Period*

Construction on the project is expected to commence in Fall of 2026 and be completed in Winter of 2030. All construction and demolition activities should be managed in accordance with applicable MassDEP's regulations regarding Air Pollution Control (310 CMR 7.01, 7.09-7.10), and Solid Waste Facilities (310 CMR 16.00 and 310 CMR 19.00, including the waste ban provision at 310 CMR 19.017). The project should include measures to reduce construction period impacts (e.g., noise, dust, odor, solid waste management) and emissions of air pollutants from equipment, including anti-idling measures in accordance with the Air Quality regulations (310 CMR 7.11. If a piece of equipment is not available in the Tier 4 configuration, then the Proponent should use construction equipment that has been retrofitted with appropriate emissions reduction equipment. Emission reduction equipment includes EPA-verified, CARB-verified, or MassDEP approved diesel oxidation catalysts (DOCs) or Diesel Particulate Filters (DPFs). The Proponent should maintain a list of the engines, their emission tiers, and, if applicable, the best available control technology installed on each piece of equipment on file for Departmental review. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD). Comments go on to state that a spills contingency plan addressing prevention and management of potential releases of oil and/or hazardous materials from pre- and post-construction activities should be presented to workers at the site and enforced. The plan should include but not be limited to, refueling of machinery, storage of fuels, and potential on-site activity releases. All construction activities should be undertaken in compliance with the conditions of all State and local permits. I encourage the Proponent to reuse or recycle construction and demolition (C&D) debris to the maximum extent.

Mitigation & Section 61 Findings

The FEIR includes a separate chapter summarizing proposed mitigation measures and includes draft Section 61 Findings. It contains commitments to implement these mitigation measures, identifies the parties responsible for implementation, and includes a schedule for implementation. As described in the FEIR, the Proponent has committed to implement the following measures to avoid, minimize and mitigate Damage to the Environment:

*Environmental Justice*

- Traffic control measures will be implemented throughout the corridor for construction activity.
- Reduction of congestion along the roadway resulting in enhanced safety and accessibility of roadway for all roadway users including bicyclists, pedestrians, and vehicles.
- Wetland replication and restoration, Riverfront Area restoration, stormwater mitigation, and compensatory flood storage are provided within the scope of this project to minimize environmental impacts to surrounding EJ communities.

*Wetland/Stormwater*

- A 3,150 sf wetland replication area will be implemented to mitigate permanent BVW impacts. Temporarily disturbed wetlands will be restored.
- Compensatory flood storage of 4,161 cf is proposed to mitigate impacts to BLSF. This will provide additional flood storage beneficial for the long-term climate adaptation/future flood mitigation.
- Riprap placed for scour countermeasures and bank stabilization will be vegetated with compost and seed mix to mitigate exposed riprap within resource areas.
- Erosion and sediment control (ESC) measures will be installed during construction to protect adjacent resource areas.
- Stormwater SCMs, infiltration basins, subsurface infiltration systems, deep sump catch basins with hoods, pretreatment with isolator rows in the subsurface systems and a forebay in the infiltration basin, new drain manholes, replacement of existing drainage outfalls proposed to capture and treat runoff and reduce peak rates.
- The proposed drainage systems will maintain the historic drainage patterns, distributing runoff to the existing discharge points.
- The proposed outfalls are located at or near existing outfalls where there is an existing point source discharge.
- Box culvert will consist of a 4 ft wide by 3 ft tall precast concrete box culvert which slightly exceeds the 1.2 times bankfull width.

*Climate Change Adaptation and Resiliency*

- Wetland restoration, wetland replication, and compensatory flood storage to mitigate wetland and flooding impacts. The additional flood storage provided will be advantages for the long-term climate adaptation.
- Riverfront Area restoration and tree planting to improve the surrounding ecosystem.

- Addition of pedestrian and bicycle facilities to reduce traffic and minimize GHG emissions.
- Planting 60 deciduous trees along the ROW.

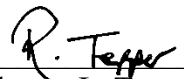
*Construction Period*

- Erosion and sediment controls will be utilized throughout the entire construction period to minimize impacts to the surrounding resource area.
- All areas will be permanently stabilized following the completion of construction work.
- All hazardous waste material will be disposed of by the Contractor in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products.
- A Temporary Traffic Control Plan (TTCP) for this Project has been developed with the goal of preventing unnecessary delays.
- During construction, pedestrian and bicycle accommodations will be maintained at active work zones per Mass General Laws Chapter 90E Section 2A.

Conclusion

Based on a review of the FEIR and consultation with Agencies, I find that the FEIR adequately and properly complies with MEPA and its implementing regulations. No further MEPA review is required, and the project may proceed to permitting. Participating Agencies should forward copies of the final Section 61 Findings to the MEPA Office for publication in accordance with 301 CMR 11.12.

August 1, 2025
Date



Rebecca L. Tepper

Comments received on the EENF/Proposed EIR:

5/20/2025 Massachusetts Water Resources Authority (MWRA)
5/23/2025 Massachusetts Department of Environmental Protection (MassDEP)
5/23/2025 Massachusetts Water Resources Commission (WRC)

Comments received on the FEIR:

7/25/2025 Massachusetts Water Resources Authority (MWRA)

RLT/NJM/njm

MASSACHUSETTS WATER RESOURCES AUTHORITY
Deer Island
33 Tafts Avenue
Boston, MA 02128

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
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TTY: (617) 788-4971

July 25, 2025

Rebecca Tepper, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge St, Suite 900
MEPA Office, Nicholas Moreno
Boston, MA 02114

Subject: EOEEA #16942 – Final Environmental Impact Report
Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn City Line, Wilmington, MA

Dear Secretary Tepper,

The Massachusetts Water Resources Authority (MWRA) appreciates the opportunity to comment on the Final Environmental Impact Report (FEIR) submitted by The Massachusetts Department of Transportation, Highway Division (MassDOT) (the "Proponent") for the Reconstruction of Route 38 (Main Street) Project, from Route 62 to the Woburn city line, in Wilmington, Massachusetts. The Project proposes to reconstruct the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line for a total project length of approximately 2.1 miles. The purpose of the Project is to improve roadway infrastructure, reduce traffic back-ups on entering side streets, improve the existing drainage system, and provide increased safety for roadway users.

MWRA previously commented on the Project Expanded Environmental Notification Form (EENF) on May 21, 2025. MWRA's comments on this FEIR continue to relate to Toxic Reduction and Control (TRAC) discharge permitting.

TRAC Discharge Permitting

The MWRA prohibits the discharge of groundwater to the sanitary sewer system, pursuant to 360 C.M.R. 10.023(1) except in a combined sewer area when permitted by the Authority and the Municipality. The proposed Project is not located in a combined sewer area; therefore, the discharge of groundwater to the sanitary sewer system associated with the Project is prohibited. The Project must secure a USEPA-NPDES General Permit for Storm Water Discharges from its construction activities. The FEIR acknowledges this comment, further noting that the dewatering (groundwater/stormwater) will not be connected to the sanitary sewer

system; it will be connected to the storm drain. The FEIR notes that the language under the NPDES section prohibits the discharge of groundwater and/or stormwater to the sanitary sewer system.

On behalf of the MWRA, thank you for the opportunity to provide comments on this Project. Please do not hesitate to contact Hillary Monahan of my staff at (857) 324-0554 or Hillary.Monahan@mwra.com with any questions or concerns.

Sincerely,

Colleen Rizzi, P.E.
Director
Environmental and Regulatory Affairs

cc: John Viola, MassDEP

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# MEPA EXPANDED ENVIRONMENTAL NOTIFICATION FORM

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MEPA EXPANDED ENVIRONMENTAL NOTIFICATION FORM

# Reconstruction of Route 38 (Main Street)
# From Route 62 to the Woburn City Line
# Wilmington, Massachusetts

MassDOT Contract No. 608051




Prepared for

Massachusetts Department of Transportation

April 15, 2025

Prepared by

GREEN
A Lochner Company

Building Strong Client Relationships Through Engineering Excellence

April 15, 2025

Secretary Rebecca Tepper
Executive Office of Energy and Environmental Affairs MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

**Subject:** **Reconstruction on Route 38 (Main Street),**
**From Route 62 to the Woburn City Line**
**Wilmington, MA**
**EENF Submittal**

Dear Secretary Tepper:

On behalf of the Massachusetts Department of Transportation, Highway Division (MassDOT), Green International Affiliates is pleased to submit the enclosed Expanded Environmental Notification Form (ExENF) for the above referenced Reconstruction on Route 38 (Main Street) Project in Wilmington, Massachusetts. The purpose of the project is to improve the roadway infrastructure, reduce traffic back-ups on entering side streets, improve the existing drainage system and provide increased safety for roadway users.

The subject project proposes to reconstruct the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line for a total project length of approximately 2.1 miles (MassDOT Project No. 608051).

This project is subject to MEPA review and preparation of an ENF pursuant to the following regulations because it requires a State Agency Action:

- 301 CMR 11.03(3)(b)1(d): alteration of 5,000 or more sf of bordering or isolated vegetated wetlands
- 301 CMR 11.03(3)(b)1(f): alteration of ½ or more acres of any other wetlands

The project exceeds the above MEPA thresholds and is within 1 mile of EJ populations, thereby requiring enhanced public involvement efforts. Although there are impacts associated with the proposed work, the project will result in a net benefit to public safety and access to the surrounding EJ communities.

Enclosed are the following items included with this electronic submission sent to MEPA@mass.gov:

- PDF of the Environmental Notification Form (ENF) Report
- PDF of the Plans (full sized)

This EENF is being submitted for publication in the upcoming Environmental Monitor. Public Notices in English and Portuguese will also be published in the Wilmington Town Crier the week of 4/21/2025.

Should you have any questions or require any additional information during your review of this ENF, please do not hesitate to contact me at ofartushnaya@greenintl.com or (978) 923-0400.

Sincerely,
***Green International Affiliates, Inc.***



Oxana Fartushnaya
Client Manager II | Water Resources Group[

cc: Eamon Kernan (MassDOT)
Project File: 21058.16XX

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ATTACHMENT C: FIGURES

- FIGURE 1: USGS MAP
- FIGURE 2: AERIAL MAP
- FIGURE 3: ENVIRONMENTAL CONSTRAINTS MAP
- FIGURE 4: FEMA MAP
- FIGURE 5: SOILS MAP
- FIGURE 6: ENVIRONMENTAL JUSTICE MAP

ATTACHMENT D: STORMWATER MANAGEMENT REPORT

ATTACHMENT E: HISTORIC RESOURCES SUPPORTING DOCUMENTATION

- SECTION 106 CLEARANCE
- PROJECT NOTIFICATION FORM

ATTACHMENT F: ENVIRONMENTAL JUSTICE SUPPORTING DOCUMENTATION

- MEPA EJ REFERENCE LIST
- MEPA ENVIRONMENTAL JUSTICE SCREENING FORM
- ENVIRONMENTAL JUSTICE MAPS
- MEPA PROJECT FACT SHEET

ATTACHMENT G: HYDRAULIC MEMO

ATTACHMENT H: RMAT CLIMATE RESILIENCE DESIGN STANDARDS TOOL (THE "RMAT TOOL") REPORT

ATTACHMENT I: WETLAND SUMMARY REPORT

ATTACHMENT J: MEPA SUBMISSION PLAN SET (BOUND SEPARATELY)

# EXPANDED ENVIRONMENTAL NOTIFICATION FORM

# Environmental Notification Form

***For Office Use Only***

EEA#: _____

MEPA Analyst: _____

*The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.*

| | | |
|---|---|---|
| Project Name: **Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn C.L.** | | |
| Street Address: **Route 38 (Main Street), from Route 62 to Woburn City Line** | | |
| Municipality: **Wilmington** | Watershed: **Ipswich, Mystic** | |
| Universal Transverse Mercator Coordinates: **19T 321509mE 4712795mN** | Latitude: **42°32'49" N - 42°31'13" N**<br>Longitude: **71°10'26" W - 71°09'29" N** | |
| Estimated commencement date: **Fall 2026** | Estimated completion date: **December 2030** | |
| Project Type: **Transportation** | Status of project design: **100** %complete | |
| Proponent: **Massachusetts Department of Transportation - Highway Division** | | |
| Street Address: **10 Park Plaza, Suite 7360** | | |
| Municipality: **Boston** | State: **MA** | Zip Code: **02116** |
| Name of Contact Person: **Noah Boland, MassDOT Highway Division, Environmental Analyst; Oxana Fartushnaya, Green International Affiliates, Inc. (Applicant's Consultant Representative)** | | |
| Firm/Agency: **Green International Affiliates** | Street Address: **100 Ames Pond Drive, Suite 200** | |
| Municipality: **Tewksbury** | State: **MA** | Zip Code: **01876** |
| Phone: **(978) 923-0400** | Fax: **N/A** | E-mail: **ofartushnaya@greenintl.com** |

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
☐Yes ☒No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

| | |
|---|---|
| a Single EIR? (see 301 CMR 11.06(8)) | ☒Yes ☐No |
| a Rollover EIR? (see 301 CMR 11.06(13)) | ☒Yes ☐No |
| a Special Review Procedure? (see 301CMR 11.09) | ☐Yes ☒No |
| a Waiver of mandatory EIR? (see 301 CMR 11.11) | ☐Yes ☒No |
| a Phase I Waiver? (see 301 CMR 11.11) | ☐Yes ☒No |

*(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)*

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?

**301 CMR 11.03(3)(b)1(d): alteration of 5,000 or more sf of bordering or isolated vegetated wetlands;**

**301 CMR 11.03(3)(b)1(f): alteration of ½ or more acres of any other wetlands;**

Which State Agency Permits will the project require?

**Section 401 Dredging, Fill/Excavation Water Quality Certification (MassDEP)**

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres:

**This project is planned to be funded through the 2025 Transportation Improvement Program for the Boston Metropolitan Planning Organization. The Town of Wilmington will fund water and sewer system improvements. The total project cost is currently $37,544,045.73. MassDOT will fund 20% of the project construction cost and Federal Highway Administration will fund 80% of the project construction cost. No land transfer from an Agency of the Commonwealth will be required for the project.**

| Summary of Project Size & Environmental Impacts | Existing | Change | Total |
|---|---|---|---|
| **LAND** | | | |
| Total site acreage | 16.02 | | |
| New acres of land altered | | 16.02 | |
| Acres of impervious area | 11.65 | 1.40 | 13.05 |
| Square feet of new bordering vegetated wetlands alteration | | 2,806 (P); 2,329(T) | |
| Square feet of new other wetland alteration:<br>Bank (LF)<br>LUW<br>BLSF<br>Riverfront Area | | <br>64 (P); 15 (T)<br>262 (P); 195 (T)<br>6,815 (P)<br>71,960 (P) | |
| Acres of new non-water dependent use of tidelands or waterways | | 0 | |
| **STRUCTURES** | | | |
| Gross square footage | N/A | N/A | N/A |
| Number of housing units | N/A | N/A | N/A |
| Maximum height (feet) | N/A | N/A | N/A |
| **TRANSPORTATION** | | | |
| Vehicle trips per day | 21,383 | 0 | 21,383 |
| Parking spaces | N/A | N/A | N/A |
| **WASTEWATER** | | | |
| Water Use (Gallons per day) | N/A | N/A | N/A |
| Water withdrawal (GPD) | N/A | N/A | N/A |
| Wastewater generation/treatment (GPD) | N/A | N/A | N/A |
| Length of water mains (miles) | N/A | N/A | N/A |
| Length of sewer mains (miles) | N/A | N/A | N/A |

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

Has any project on this site been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

## GENERAL PROJECT INFORMATION

**PROJECT DESCRIPTION:**

**The Massachusetts Department of Transportation – Highway Division (MassDOT) in conjunction with the Town of Wilmington propose to reconstruct the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line for a total project length of approximately 2.1 miles (MassDOT Project No. 608051). The purpose of the project is to improve the roadway infrastructure, reduce traffic back-ups on entering side streets, improve the existing drainage system and provide increased safety for roadway users. As part of the project, a new water system is proposed along a portion of the project corridor. The Town of Wilmington will fund water system improvements, while the rest of the project is being funded by MassDOT.**

**On behalf of the Massachusetts Department of Transportation (MassDOT), this Expanded Environmental Notification Form (EENF) application (301 CMR 11.00) is being filed under the Executive Office of Energy and the Environment (EOEEA) Massachusetts Environmental Policy Act (MEPA) for the Route 38 roadway reconstruction project.**

**The project proposes to reconstruct the existing two-lane two-way road to achieve generally two 11-foot lanes and two 5-foot bike lanes along the project corridor. A 5'-6" sidewalk will be added on one, or both sides of the roadway depending on location. There will be two 11-foot southbound travel lanes and a 2-foot shoulder for 900 feet south of the Route 62 and Route 38 intersection. The project will also incorporate improvements to the existing closed drainage system, including headwall and culvert replacement, and a new water system along Route 38 from Route 62 to Eames Street. The project also proposes to add bicycle accommodations, improve pedestrian accommodations, and install traffic signal improvements along the Route 38 corridor. The project will upgrade the signage and pavement markings to improve driver safety along the project corridor. New signage and pavement markings also will be provided to enhance safety for bicyclists on the widened roadway. Bicycle and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility. This roadway upgrade will require full-depth reconstruction of the existing Route 38 pavement from Route 62 to Eames Street. Micromilling and resurfacing will be proposed along Route 38 from Eames Street to the Woburn City Line.**

**Improvements at the intersection of Route 38 and Route 62 (Burlington Avenue and Church Street) will include re-striping to provide additional turning lanes for the northern, southern, and western legs of the intersection, adding bicycle detection, and reconstructing the traffic signal, as well as a new retaining wall along the MBTA tracks south of this intersection. These improvements will result in less congestion along the corridor, and significantly lower delays and queues at the intersection. The project will only include pavement resurfacing and minor pavement widening and drainage improvements at the intersection of Route 129 (Lowell Street) because this section of Route 38 was reconstructed recently. The project will also include a traffic signal at the intersection of Route 38 with Cross Street and Butters Row. This signalization will provide more orderly traffic control for vehicles, pedestrians, and bicyclists. The side street approaches at this intersection are proposed to be realigned to provide improved sight distances and geometry. The improvements will add a left turn lane from northbound Route 38 to Butters Row. Realignments of Eames Street and Old Main Street are also proposed to improve safety. In all, these improvements will result in enhanced safety for all roadway users including bicyclists, pedestrians, and vehicles.**

**The project impacts are subject to the Massachusetts Wetlands Protection Act (WPA) and its implementing regulations 310 CMR 10.00 for work within Bordering Vegetated Wetlands (BVWs), Land Under Water (LUW), Inland Bank, Bordering Land Subject to Flooding (BLSF), the 200-foot Riverfront Area, and the 100-foot Buffer Zones. The entire project meets the criteria of the Limited Project provisions of the WPA listed in the 310 CMR 10.53(3)(f): *Maintenance and improvement of existing public roadways, but limited to widening less than a single lane, adding shoulders, correcting substandard intersections, and improving***

***inadequate drainage systems*. An Order of Conditions (OOC) for the project (DEP File No. 344-1566) will be forthcoming by the Wilmington Conservation Commission.**

**The proposed work within Waters of the United States requires a Clean Water Act Section 401 Water Quality Certification pursuant to 314 CMR 9.04(1) since the project will result in cumulative permanent and temporary impacts to Bordering Vegetated Wetlands (BVW) and Waterways/Land Under Water (LUW) in excess of 5,000 square feet as well as dredging in waterways in excess of 100 cubic yards. Therefore, a Joint Application for 401 Water Quality Certification for Minor Dredging and Major Fill/Excavation (WQC Application No. 25-WW26-0013-APP) and Section 404 Pre-Construction Notification (PCN) was submitted to the Department of Environmental Protection (DEP) and the United States Army Corps of engineers in association with this project on April 10, 2025.**

**This project consists of maintenance and improvement of an existing roadway (including widening of less than a single lane, improvements to existing drainage systems and repaving). As the proposed project is a roadway project, which is increasing impervious area by less than one lane, it is therefore categorized as a "*Redevelopment Project*" under the Massachusetts Stormwater Management Standards. The project is therefore designed to meet the Standards to the maximum extent practicable. A Stormwater Management Report demonstrating the compliance of the project with the ten state stormwater standards is attached as Attachment D to this ENF.**

Describe the existing conditions and land uses on the project site:

**Route 38 is an Urban Principal Arterial, located west of Interstate 93 and east of Route 3A, generally providing northwest and southeast movement between the towns of Tewksbury, Wilmington, Woburn, Winchester and Medford. The proposed section of Route 38 to be reconstructed and improved runs from Route 62 (Burlington Avenue/Church Street) in Wilmington, MA to the Woburn city line for an approximate project length of 2.1 miles.**

**Main Street is located within a public right-of-way which is generally around 46 feet wide but widens around curves at the intersections. Pavement widths generally vary from approximately 30 to 34 feet. There is a sidewalk present on each corner of the Route 38/Route 62 intersection, along the eastern side of Route 38 between the intersections with Route 62 and Route 129, and on the western side of Route 38 near the Route 129 intersection. The sidewalks at the signalized intersections are approximately 5.5 feet wide, in fair condition, and in some cases do not comply with ADA/AAB requirements. The sidewalks are typically not ADA/AAB-compliant elsewhere, and there are no pedestrian accommodations along the majority of the corridor. The pedestrian signal phase clearance time at the Route 38 and Route 62 intersection is shorter than MUTCD-compliance. The travel lanes are generally 12-14 feet wide with shoulders between 2 and 5 feet. The pavement is in fair condition, and there is moderate pavement cracking throughout the project length. There are no bicycle accommodations on the roadway other than bicycle detection at signalized intersections, and limited pedestrian accommodations. Bicyclists currently must ride within the vehicle lanes or on the sidewalks, resulting in safety concerns.**

**There are several existing underground utilities at the project site, including gas, water, sewer, and drainage. In addition, there are a number of above ground utilities present at the project site which include many overhead wires and utilities poles throughout the project.**

**The existing site can be analyzed as 27 watershed areas that contribute runoff to 21 discharge points. The existing drainage system on the roadways within the project limits includes "country drainage" (i.e. no curb), where the runoff sheet flows off the pavement into the pervious shoulder, roadside ditches, or private front yards. There are lengths of bituminous berm gutter, where the road runoff flows as concentrated flow to catch basins, or to a point where the berm discontinues, and the runoff flows onto adjacent wetland or wooded areas as shallow concentrated flow.**

**There are no Environmental Justice (EJ) populations located within the project area, however, based on the 2020 Environmental Justice Block Group Criteria, minority populations exist within 1 mile of the proposed limit of work. A detailed description of nearby EJ populations is included below.**

**Wetland Resources Areas:**

**There are protected wetland resource areas that exist directly adjacent to Route 38 along the project corridor. Most vegetated wetlands and streams on site belong to the Ipswich River headwaters, a subwatershed of the Ipswich River watershed. Approximately 200 feet of the southernmost limit of the project is located within the Aberjona River watershed, a subwatershed of the Mystic River watershed.**

**A delineation of the wetland boundaries in the vicinity of the Route 38 project site was completed by Lucas Environmental on May 21- 22, 2020 and December 3, 2020. The site was revisited on June 6, 2023, to review and update the wetland delineation based on current site conditions at that time. The wetland resource area boundary delineations were conducted in accordance with the methodology outlined in the Regulations 310 CMR 10.55 and the DEP handbook *Delineating Bordering Vegetated Wetlands Under Massachusetts Wetlands Protection Act*. Hydrophytic vegetation identification/documentation was based upon the *US Fish and Wildlife Service National List of Plant Species That Occur in Wetlands*, as well as all plant species listed in the Act. See attachment I for the Wetland Summary Report. Wetland hydrology includes hydric soils, which were determined based upon the interagency document *Field Indicators for Identifying Hydric Soils in New England*. This methodology is consistent with the three-parameter approach required for the delineation of federal wetlands as outlined in the Corps of Engineers *Wetland Delineation Manual*. There is one (1) perennial stream (Maple Meadow Brook) and one (1) Unnamed Intermittent Stream crossing Route 38 within the project segment between Route 62 and the Woburn City Line. The wetlands are identified as Wetlands "A" through "J" series as depicted on Figure 3, Protected Resource Areas Map in Attachment C, as well as shown below.**

**Wetland resource areas identified within the study area include Inland Bank, Bordering Vegetated Wetland (BVW), Land Under Waterbodies and Waterways (LUWW), Bordering Land Subject to Flooding (BLSF), and Riverfront Area. The 100-foot Buffer Zone extends from the BVW and Bank boundaries. Maple Meadow Brook is a perennial stream that flows in the southwest to northeast direction and has a 200-foot Riverfront Area associated with it. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Town of Wilmington (Map No. 25017C0291E, Effective June 4, 2010), a Flood Zone AE is located within and adjacent to the project limits. U.S. Geological Survey (USGS) gage data was used to establish the Base Flood Elevation (BFE) at elevation 82 feet.**

**The project will also result in permanent impacts to 2,806 square feet and temporary impact to 2,329 square feet of Bordering Vegetated Wetlands (BVW). The proposed project will permanently impact approximately 262 square feet, and temporary impacts to 195 square feet of Land Under Water (LUW); dredging of 65 Cubic Yards is required for the proposed work within the channel of the Unnamed Intermittent Stream (approx. Sta. 218).**

**The project will also result in permanent impacts to 64 liner feet (lf) and temporary impact to 15 lf of Bank. The proposed work will occur within 6,815 sf of Bordering Land Subject to Flooding (BLSF) where 18 cubic yard of fill is proposed. The proposed work will also occur within approximately 71,960 sf of the 200-ft Riverfront area, All impacts to the affected resource areas will be mitigated in accordance with regulatory requirement. Best management practices are proposed to protect adjacent resource areas during construction. (see the WETLANDS, WATERWAYS, AND TIDELANDS SECTION of this ENF for more details on project impacts and proposed mitigati0on measures).**

**Open Space:**

**Several parks and/or conservation areas abut the project route, and are as follows:**

- **Legacy Park, located adjacent to the commuter rail tracks**
- **The Yentile Farm Recreational Facility**
- **The Town Park Pumping Station water supply land, a portion of which abuts Route 38 and is used by the Town of Wilmington as a dog park (823 Main Street). This is part of the larger protected area surrounding the pumping station and the historic route of the Middlesex Canal**
- **The Middlesex Canal Historic and Archaeological District is listed in the National Register of Historic Places.**

**These properties are subject to protection under Section 4(f) of the DOT Act of 1966. MassDOT reviewed the project pursuant to Section 4(f) of the DOT Act of 1966 and issued a "de minimis" impact determination on Section 4(f) resources, including the Wilmington Dog Park and Yentile Farm Recreational Facility. Both facilities do not overlap the land subject to Article 97 of the Amendments to the Constitution of the Commonwealth (further Article 97). There will be no impacts to a Legacy Park property. Project impacts on the portion of the 823 Main Street Town Park Pumping Station water supply parcel subject to Article 97 will be temporary in nature and will only require temporary easements. Therefore, the project will not trigger Article 97 Land Disposition, nor will it be converted to other inconsistent uses.**

**Land Use:**

**This project does not trigger any review thresholds related to land listed in 301 CMR 11.03(1). The project will result in an overall increase of approximately 60,722 square feet in impervious area within the project limits. This is due to the realignment and minor widening of the roadway in select areas, and construction of approximately 14,500 linear feet of new sidewalks. These additions will improve driver, bicyclist, and pedestrian safety on Route 38 (Main Street). Although the project is increasing the impervious area within the project limits, the project also includes drainage system improvements, including proposing three infiltration Stormwater Control Measures (SCMs) to treat runoff and mitigate impacts from the increase in impervious area. The land use surrounding the project site consists of a combination of commercial, impervious, developed open space, deciduous forest, evergreen forest, palustrine forested wetland and some bare land.**

**Environmental Justice Populations:**

**Figure 6 in Attachment C identifies EJ populations within a 1- and 5-mile radius of the Project Site. As the Project does not exceed thresholds related to air quality, the "Designated Geographic Area" (DGA) includes a 1-mile radius from the project.**

**There are no Environmental Justice populations located within the project area.**

**The project's DGA includes 5 EJ block groups with minority populations. These are listed in Table 1 below and shown in Figure 6 – Environmental Justice Map.**

**Table 1: EJ Populations within 1 mile of the Project (see Figure 6 in Attachment C):**

| Block Group | Census Tract | EJ Community Type | Total % Minority Population | Median Household Income | % of Households with English Isolation | Languages (At census tract level)* |
|---|---|---|---|---|---|---|
| 1 | 3336.01 | Minority | 42 | $121,924 | 0.0 | Portuguese or Portuguese Creole (5.35%) |
| 3 | 3336.02 | Minority | 28 | $113,409 | 2.0 | Portuguese or Portuguese Creole (5.35%) |
| 4 | 3336.02 | Minority | 30 | $93,345 | 7.0 | Portuguese or Portuguese Creole (5.35%) |
| 4 | 3322.02 | Minority | 26 | $103,788 | 0.0 | - |
| 1 | 3322.02 | Minority | 30 | $118,528 | 9 | - |

Source: EJ Maps Viewer, 2020 https://mass-eoeea.maps.arcgis.com/apps/webappviewer/index.html?id=dffdbf9c109647fc9601f7524c1fd9f4

*Data is from 2015 ACS: "Languages Spoken in Massachusetts" tab of the EJ Maps Viewer to determine languages spoken by at least 5% of population in the census tract who do not speak English very well

Describe the proposed project and its programmatic and physical elements:

**The project proposes to reconstruct the existing two-lane two-way road to achieve generally two 11-foot lanes and two 5-foot bike lanes along the project corridor. A 5'-6" sidewalk will be added on one, or both sides of the roadway depending on location. There will be two 11-foot southbound travel lanes and a 2-foot shoulder for 900 feet south of the Route 62 and Route 38 intersection. The project will also incorporate improvements to the existing closed drainage system, including headwall and culvert replacement, a new water system along Route 38 from Route 62 to Eames Street. The project also proposes to add bicycle accommodations, improve pedestrian accommodations, and install traffic signal improvements along the Route 38 (Main Street) corridor. The project will upgrade the signage and pavement markings to improve driver safety along the project corridor. New signage and pavement markings also will be provided to enhance safety for bicyclists on the widened roadway. Bicycle access and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility. This roadway upgrade will require full-depth reconstruction of the existing Route 38 pavement from Route 62 to Eames Street. Micromilling and resurfacing will be proposed along Route 38 from Eames Street to the Woburn City Line.**

**Improvements at the intersection of Route 38 and Route 62 (Burlington Avenue and Church Street) will include re-striping to provide additional turning lanes for the northern, southern, and western legs of the intersection, adding bicycle detection, and reconstructing the traffic signal, as well as a new retaining wall along the MBTA tracks south of this intersection. These improvements will result in less congestion along the corridor, and significantly lower delays and queues at the intersection. The project will only include pavement resurfacing and minor pavement widening and drainage improvements at the intersection of Route 129 (Lowell Street) because this section of Route 38 was reconstructed recently. The project will also include a traffic signal at the intersection of Route 38 with Cross Street and Butters Row. This signalization will provide more orderly traffic control for vehicles, pedestrians, and bicyclists. The side street approaches at this intersection are proposed to be realigned to provide improved sight distances and geometry. The improvements will add a left turn lane from northbound Route 38 to Butters Row. Realignments of Eames Street and Old Main Street are also proposed to improve safety. In all, these improvements will result in enhanced safety of roadway for all roadway users including bicyclists, pedestrians, and vehicles.**

**The project will not result in any impacts to the sewer or water utilities present throughout the**

**site; however, the project will include a variety of drainage improvements. In order to install the proposed sidewalk and other ADA compliant pedestrian improvements throughout the project, several utility poles and overhead wires will be relocated.**

**The proposed stormwater management analysis can be analyzed as 29 watershed areas contributing runoff to 21 discharge points, which are the same under existing conditions. The limits of the overall watershed and discharge points of analysis are the same in proposed and existing conditions. The proposed drainage improvements include installation of new deep sump catch basins with hoods, new drain manholes, replacement of existing drainage outfalls, as well as three proposed infiltration Stormwater Control Measures (SCMs) to mitigate the increase in peak rates of runoff. While curbing will be added in sections of the roadway that used to sheet flow away from the project, the new drainage systems will maintain the historic drainage patterns, distributing runoff to the existing discharge points. The project also provides a modified drainage collection system to address the changes caused by the proposed road improvements as well as protecting the nearby downstream watershed and the environment.**

**Clearing and grabbing will be required for this project. The overall Route 38 project area of clearing and grubbing is approximately 66,500 SF±. As part of the subject project's tree restoration efforts, several locations within the project limits have been designated for replanting to mitigate the removal of trees affected by construction. All proposed trees and plantings will be within the public right of way.**

**Control of invasive plants is proposed to begin immediately with the initiation of construction activities and prior to any anticipated clearing or site disturbance. This work will be performed in accordance with MassDOT specifications for Invasive Plants Management.**

**The anticipated duration of construction is approximately 64 months.**

*NOTE: The project description should summarize both the project's direct and indirect impacts (including construction period impacts) in terms of their magnitude, geographic extent, duration and frequency, and reversibility, as applicable. It should also discuss the infrastructure requirements of the project and the capacity of the municipal and/or regional infrastructure to sustain these requirements into the future.*

**The project has been designed to avoid wetland resource area impacts to the maximum extent practicable and will mitigate unavoidable resource area impacts in accordance with state regulations.**

**There are direct impacts to wetland resource areas associated with the project. These impacts resulting from the project are associated with the full depth pavement reconstruction and minor widening of the roadway, the construction of new sidewalks in select areas, raising the profile of Route 38 to tie into the realigned Butters Row, culvert replacement/extension work, replacement of the existing highway guardrails, as well as construction of new drainage outfalls at multiple discharge points, discharging into the resource areas. The activities within the resource areas and their buffer zones include proposed minor widening of the roadway to achieve two 11-foot travel lanes, a sidewalk and 5.5-foot-wide shoulders/bicycle lanes. Based on this proposed layout, the limit of pavement will be closer to the wetland resource areas than compared to the existing conditions. Impacts to wetland resource areas are summarized in detail in the WETLANDS, WATERWAYS, AND TIDELANDS SECTION of this ENF.**

**Replication of the impacted resource areas and restoration of the areas temporarily impacted during construction period are provided to contribute to the protection of the interests identified in M.G.L. c. 131, § 40. The proposed mitigation areas will be constructed to meet the requirements of permits and certifications including relevant performance standards of the Massachusetts Wetlands Protection Act (MGL C. 131, s40) and U.S. Army Corps of Engineers. To minimize the impact to the wetland area buffer zones, proper erosion and sediment controls will be installed during construction. Proposed erosion and sediment controls include**

**compost filter tube and silt fence.**

**In addition to the minimum control measures included in the plan set, a Stormwater Pollution Prevention Plan (SWPPP) for construction activities will be prepared by the Contractor for the site in compliance with the EPA's Construction General Permit. It will include measures to minimize exposed soil areas through sequencing and temporary stabilization and establish a permanent vegetative cover or other forms of stabilization as soon as practicable.**

Describe the on-site project alternatives (and alternative off-site locations, if applicable), considered by the proponent, including at least one feasible alternative that is allowed under current zoning, and the reasons(s) that they were not selected as the preferred alternative:

**NOTE***: The purpose of the alternatives analysis is to consider what effect changing the parameters and/or siting of a project, or components thereof, will have on the environment, keeping in mind that the objective of the MEPA review process is to avoid or minimize damage to the environment to the greatest extent feasible. Examples of alternative projects include alternative site locations, alternative site uses, and alternative site configurations.*

**Alternatives Analysis:**

**The purpose of this project is to provide safety enhancements along the Route 38 corridor in Wilmington for drivers and bicyclists, to promote improved flow of traffic, and to address drainage issues at various locations within a project segment. The corridor currently does not provide sufficient bicycle and pedestrian facilities. Pedestrian accommodations are limited to specific areas, and existing sidewalks are substandard, often failing to meet ADA/AAB requirements. Cyclists must either share vehicle lanes or use sidewalks, creating safety concerns. To comply with MassDOT's Healthy Transportation Policy, the project must include compliant sidewalks and bicycle facilities.**

**A Road Safety Audit (RSA) conducted on January 26, 2017, highlighted key safety concerns, including:**

- **Faded or improper pavement markings.**
- **Substandard pedestrian and bicycle accommodations.**
- **Intersection geometry deficiencies.**
- **Inefficient signage and signal equipment.**
- **Access management issues.**
- **Ineffective drainage.**

**The crash rate along Route 38 exceeds the Massachusetts statewide average. Angle crashes dominate at several intersections, including:**

- **Route 38 at Butters Row/Cross Street: 69% angle crashes.**
- **Route 38 at Route 62: 48% angle crashes.**
- **Route 38 at Route 129: 46% angle crashes.**
- **Route 38 at Eames Street: 29% angle and 29% rear-end crashes.**

**The project aims to:**

- **Enhance roadway infrastructure.**
- **Reduce traffic congestion on entering side streets.**
- **Improve drainage systems.**
- **Increase safety for all roadway users.**
- **Provide adequate multimodal accommodations along the Route 38 corridor in Wilmington.**

**The "No-Build Alternative" was dismissed as it fails to meet the project's purpose and need by not improving safety, operations, or multimodal accommodations.**

**The following section describes the alternatives for the major design alternative along the proposed Route 38 improvements that were analyzed and considered during the design process.**

**Two alternatives were evaluated for each design alternative: meet the policy requirements and compromised option. Many of the features evaluated impact multiple locations throughout the entire corridor and a preferred/compromised alternative was selected to reduce impacts on private properties and environmentally sensitive areas.**

**<u>Design Alternative – Pedestrian Accommodation</u>**

**Policy Requirements: MassDOT's Healthy Transportation Policy requires 5-foot-wide sidewalks on both sides in urbanized areas.**

**Challenges: Installing sidewalks on both sides would:**

- **Significantly impact right-of-way (ROW), wetlands, and utilities.**
- **Increase costs and affect adjacent property owners.**
- **Trigger increased project impacts including over 4,000 sq. ft. of ROW impact, 500 sq. ft. of wetland impacts, and the relocation of 20 utility poles.**

**Preferred Design: Sidewalks will be placed only on the west side between Station 248+25 to Station 314+25 serving residential areas and public parks, minimizing impacts on wetlands and utility infrastructure. The east side, which is primarily wooded and industrial areas, will not include sidewalks. A design exception was requested and approved by MassDOT for this modification.**

**<u>Design Alternative – Bicycle Accommodation</u>**

**Policy Requirements: MassDOT Design Guide requires bicycle accommodation for projects in urbanized areas and provides a separated bicycle facility.**

**Challenges: Installing bicycle lanes on both sides would trigger:**

**Two locations within the project limits that cannot meet the minimum bicycle accommodation using a 5-foot shoulder due to space constraints.**

1. **West Side of Route 38 (Northern Project Limits to Route 62):**
- **A 2-foot shoulder is proposed to reduce congestion and accommodate a new left-turn lane.**
- **Expanding to 5 feet would require reconstructing a retaining wall, impacting businesses and properties.**

2. **West Side of Route 38 (1,200 Feet South of Route 62):**
- **A 2-foot shoulder is proposed to maintain MBTA track clearance and minimize impacts on utility infrastructure.**

**Preferred Design: Shoulder width is reduced to 2 feet in constrained areas while maintaining a 5-foot width shoulder elsewhere within the project limits to serve as a bicycle lane. A design exception was requested and approved by MassDOT for this modification.**

**<u>Design Alternative – Roadway Lane Configuration</u>**

**Policy Requirements: MassDOT's standard for NHS Non-Freeway roadways is 12-foot travel lanes and 8-foot shoulders.**

**Challenges: Meeting this standard 12-foot travel lane and 8-foot shoulders would require:**

- **Additional 8 feet of roadway widening.**
- **Additional 200 sq. ft. of wetland impact.**
- **Additional 16 tree removal.**
- **Eliminate the flat bench under the guardrail and require deep posts.**
- **Stone/Riprap embankment required to achieve 1H:1.5V slope at Station 237+25 RT to Station 241+00 RT and Station 248+25 LT to Station 255+00 LT to tie in with existing ground.**
- **Requires additional permanent wetland impacts of 3,565 square feet and temporary**

**impacts from erosion and sediment controls of 2,653 square feet.**
- **Impacts on MBTA platforms, retaining walls, utility pole relocations, and electrical towers.**

**Preferred Design: Reduced travel lane width to 11-foot travel lanes and 5-foot shoulders. Additional reductions in shoulder widths in constrained areas to also required to minimize ROW impacts. A design exception request was submitted and approved, confirming that the proposed design meets all applicable MassDOT criteria for similar roadways.**

**Design Alternative – Horizontal Alignment**

**Policy Requirements: Horizontal curves must meet a minimum length of 15 times the design speed.**

**Challenges: Eight curves within the project do not meet these requirements. Lengthening curves to meet policy requirements would require:**
- **Land taken from 11 properties.**
- **Increase wetland impacts by 1,300 sq. ft.**
- **Bridge and retaining wall reconstructions from shifted roadway alignment.**

**Preferred Design: Horizontal curves were optimized for safety without fully meeting the design standard. A design exception was requested and approved by MassDOT to use optimized horizontal curves that do not meet minimum length requirements given the lack of crash history and constrained by existing features.**

**Design Alternative – Vertical Alignment**

**Policy Requirements: MassDOT requires crest and sag curves to meet specific K values to meet sight distance requirements.**

**Challenges: Meeting K values would require:**
- **Lowering or raising the roadway significantly.**
- **Rebuilding retaining walls.**
- **Hydraulic opening of existing culverts and headwalls.**
- **Introduces new high/low points that may require new retaining walls.**
- **Driveways would be steeper than the existing grade if the profile is raised.**
- **Minimum cover for underground utilities.**
- **Extending the limit of grading.**

**Preferred Design: Vertical curves were optimized for safety without fully meeting the design standard. A design exception was requested and approved by MassDOT to use optimized vertical curves that do not meet minimum K value requirements without major impacts on private properties.**

Summarize the mitigation measures proposed to offset the impacts of the preferred alternative:

**Several mitigation measures are proposed as a part of this project in order to offset the impacts of the preferred alternative to the maximum extent practicable. The proposed mitigation measures are summarized below.**

**Stormwater Alternatives Analysis:**

**The entire project corridor was analyzed for potential SCMs. The SCM alternatives and feasibility analysis was focused at each of discharge points, including the system that discharges to Maple Meadow Brook. The SCMs considered along the project corridor include water quality swales, infiltration trenches, subsurface chamber systems, qualified pervious areas, and leaching basins. The following is a summary of all the areas and SCMs that were considered, as well as a description of whether an SCM was feasible or not:**

- **Gutter flow away from project site at DP-1, Sta. 203: No SCM feasible due to limited ROW and adjacent private properties.**
- **Gutter flow away from project site at DP-2, Sta. 11: No SCM feasible due to limited ROW and adjacent private properties.**
- **Closed drainage system outfall to DP-4 at Wetland A near an existing outfall and the outlet of the 3.5'x1.5' box culvert, Sta. 217+75 (L): No SCM feasible due to presence of existing resource areas, limited ROW, and adjacent private properties.**
- **Closed drainage system outfall at DP-5 to the Wetland southwest of the tracks beyond the project limits, Sta. 104 (R): This area consists mostly of woodland area alongside the train tracks on the western side of Route 38. No SCM feasible due to limited ROW and presence of existing train tracks.**
- **ce of existing train tracks.**
- **Overland flow to upstream end of existing box culvert at DP-6, Sta. 218 (R): No SCM feasible due to limited ROW and presence of existing train tracks.**
- **Gutter flow and closed drainage system to DP-7 at Wetland D, Sta. 238+50 (L): No SCM feasible due to Wetland D directly abutting the roadway and adjacent private property.**
- **Closed drainage system outfall to DP-8 at Wetland C, Sta. 238+50 (R): No SCM feasible due to Wetland C directly abutting the roadway.**
- **Closed drainage system at DP-9 to Wetland E, Sta. 250 (L): No SCM feasible due to Wetland E directly abutting the roadway.**
- **Overland flow to DP-10 at Wetland G, Sta. 253+75 (R): No SCM feasible due to Wetland G directly abutting the roadway.**
- **Overland flow to DP-11 at Wetland I, Sta. 258 (L): No SCM feasible due to limited ROW and adjacent private properties.**
- **Overland flow to DP-13, Sta. 275+75 (L): No SCM feasible due to limited ROW and adjacent private properties.**
- **Closed drainage system outfall at DP-14, Sta. 275+75 (R): One SCM is feasible in this location, a subsurface infiltration basin (SCM-1). Stormwater runoff from this area travels via gutter flow, which enters a closed drainage system that is pretreated by isolator rows, then captured and treated by the subsurface infiltration system.**
- **Country drainage to wooded depression area at DP-15, Sta. 285+70 (L): No SCM feasible due to limited ROW and adjacent private properties.**
- **Country drainage to wooded depression area at DP-16, Sta. 290+30 (L): No SCM feasible due to limited ROW and adjacent private properties.**
- **Overland flow to DP-17, Sta. 285+60 (R): No SCM feasible due to limited ROW and adjacent private properties.**
- **Closed drainage system outfall at DP-18, Sta. 304 (R): One SCM is feasible in this location. The closed drainage system discharges to an infiltration basin (SCM-2) that has a sediment forebay for pretreatment. The infiltration basin has an outlet control structure that connects back into the closed drainage system within Route 38.**
- **Closed drainage system outfall at DP-20, Sta. 318 +75 (L): One SCM is feasible in this location, a subsurface infiltration system (SCM-3). Stormwater runoff from this area travels via a combination of overland flow and gutter flow into a closed drainage system. The closed drainage system outlets to a subsurface infiltration system (SCM-3) that is pretreated by isolator rows.**
- **via a combination of overland flow and gutter flow into a closed drainage system. The closed drainage system outlets to a subsurface infiltration system (SCM-3) that is pretreated by isolator rows.**
- **Overland flow to vegetated area at DP-21, Sta. 316+50 (L): No SCM feasible due to limited ROW and adjacent private properties.**

**<u>Wetland Restoration and Replication:</u>**

**A wetland replication area totaling approximately 3,510 square feet is proposed and will be located adjacent to Wetland E. Additional temporary impacts associated with the erosion and sediment controls near BVWs will be restored in place.**

**Wetland Replication Area Sedimentation and Erosion Control Notes:**

- **Prior to starting any work on the site, the contractor shall notify appropriate agencies and shall install erosion and sedimentation control measures as shown on the plans.**
- **Periodic inspection and maintenance of all sediment control structures shall be provided to ensure that the intended purpose is accomplished.**

**Wetland Replication Area Planting Notes and Construction Sequence:**

- **Erosion controls will be installed along the existing wetland boundary.**
- **Under the direction of the wetland specialist, the contractor shall provide rough grading within the replicated wetland.**
- **Prior to soil additions/plantings, project surveyors will verify grades to make sure of correct elevation.**
- **Trees planted in the replication area shall be located on areas of higher elevation (located by the wetland specialist).**
- **Wetland seed mix will be applied to the wetland replication area via hand broadcast or hydromulch.**
- **Loam and seed mix will be spread throughout the graded upland slopes and in all other areas disturbed by the contractors. Seeding limits for different seed mixes shall be determined by the Wetland Specialist.**

**Temporary disturbance to BVW (2,329 square feet) will be required for installation of Erosion & Sediment Control (ESC) Best Management Practices (BMPs) in project areas directly adjacent to or within the BVW itself for areas where project limits directly adjoin or overlap with BVWs. Additional minor temporary impacts to BVW include the installation of utility pole guy wire anchors at select locations. After the erosion controls have been removed, the BVWs will be restored to preexisting conditions in accordance with the MassDOT Specification 755.45, Wetland Restoration.**

**<u>Compensatory Flood Storage and Flood Mitigation:</u>**

**The proposed project design aims to mitigate flooding risks at the project location through the implementation of stormwater best managements practices, drainage improvements, and with the construction of a compensatory flood storage area.**

**Fill within the floodplain that is subject to MEPA review is proposed from approximately Sta. 251+50 to Sta. 252+50, Sta. 255+00 to Sta. 256+50, and a small portion of the roadway from Sta. 262+50 to Sta. 263+00. The fill is predominantly associated with the addition of a sidewalk on the west side of the roadway. There is also some negligible fill on the east side of the roadway below the elevation of 81.5 feet (18 cubic feet/47 square feet of BLSF). The rest of the proposed work within BLSF will not involve fill and will be limited to reconstruction of the roadway; existing grades will be reestablished at the end of construction within BLSF in this area, therefore, there will be no change in grades in compliance with the BLSF Performance Standards.**

**The project is not changing the FEMA delineated 100-year floodplain. The proposed flood storage compensation area will be located between Sta. 258+00 and Sta. 260+00 on the west side of Route 38 and must comply with the General Performance Standards presented in 310 CMR 10.57 (4)(a). These call for the provision of compensatory flood storage volume for existing flood storage that will be made unavailable by the proposed work. These storage areas must be incrementally equal per foot of elevation to storage volume lost. They also must have an unrestricted hydraulic connection to the same waterway segment is the lost storage volumes. Work within BLSF cannot restrict flows in any manner that would increase flood stages or flow velocities.**

**The proposed flood storage area is hydrologically connected to the affected floodplain and will provide flood storage compensation on a foot-by-foot basis, as shown in Table 2 below. In order to protect the large trees on the site, the cut will be predominantly excavated at the 82-foot contour, which still results in an overall incremental net cut. The project is able to compensate for the entire project's flood storage loss and will result in an overall net cut of -2,007 CF. Table 2 below provides a summary of cut, fill, and flood storage compensation**

**provided:**

**Table 2: Compensatory Flood Storage**

| Elevation (FT) | Volume of Cut (CF) | Volume of Fill (CF) | Incremental Net Cut/Fill Volume (CF) |
|---|---|---|---|
| 79.0 | 0 | 0 | 0 |
| 80.0 | 147 | 7 | -140 |
| 81.0 | 1,804 | 925 | -879 |
| 82.0 | 2,210 | 1,222 | -988 |
| 82.9 | | | |
| TOTAL | 4,161 | 2,155 | -2,007 |

**Stormwater Mitigation:**

**As stated above, the proposed drainage improvements include installation of new deep sump catch basins with hoods, new drain manholes, replacement of existing drainage outfalls, as well as three proposed infiltration Stormwater Control Measures (SCMs) to mitigate the increase in peak rates of runoff. The proposed SCMs include the installation of one aboveground infiltration basin as well as two subsurface infiltration systems. While curbing will be added in sections of the roadway that used to sheet flow away from the project, the new drainage systems will maintain the historic drainage patterns, distributing runoff to the existing discharge points.**

**This project provides an opportunity to improve the existing drainage system and improve the quality of stormwater runoff discharged to adjacent wetlands. This project will incorporate the installation of practical Stormwater Control Measures (SCMs). Retrofitting of outfall locations with stone for pipe ends to provide splash pads for stormwater discharges will reduce erosion and movement of sediment into the waterbodies. Sediment filters (silt sacks) will be installed at all existing and proposed drainage structures and maintained and cleaned as required to maintain their effectiveness. Catch basins, drain manholes and storm drainpipes will be cleaned of sediment and debris after the completion of construction. Sediment collected in structures will be disposed of properly and covered, if stored on-site. Three SCMs will be installed to help with peak rate attenuation and improve water quality. All proposed drainage improvements will maintain historic drainage patterns, distributing runoff to the existing discharge points, and will be done in a manner that will limit the impacts to adjacent resource areas.**

**The existing 3.5'x1.5' box culvert at approximate Sta. 218+00, conveying the Unnamed Intermittent Stream under Route 38, is proposed to be replaced with a 3'x3' precast concrete box culvert in order to help prevent future obstructions and achieve greater compliance with the Stream Crossing General Standards (SCGS). Placing a 6-inch layer of natural streambed material at the bottom of the proposed culvert, at the same elevation as the existing streambed, will ensure that the new culvert complies with SCGS #4 and #5, unlike the existing culvert. Therefore, the proposed design results in an improvement upon the existing conditions at this stream crossing by replacing the existing box culvert, which increases the width of the crossing at this location. A substantial enlargement of the structure is not feasible due to constructability constraints posed by nearby utilities and the MBTA railroad tracks, as well as the potential for additional impacts to adjacent protected resource areas (VW A-series). The proposed culvert replacement at Sta. 218+00, conveying the Unnamed Intermittent Stream under Route 38, will achieve partial compliance with the Massachusetts River and Stream Crossing Standards (revised March 2011) by conforming with SCGS #4, #5. However, SCGS #2,**

**#3 and #6 cannot be complied with, and #1 does not apply.**

**Riverfront Area Mitigation:**

**Riverfront Area associated with Maple Meadow Brook extends over 71,960 square feet of the project area. Of the total project impacts to Riverfront Area, approximately 8.8% of the impacts will occur as a result of road widening. The majority of this widening will occur within the previously disturbed and filled areas adjoining the existing roadway. The work proposed in the Riverfront Area subject to MEPA review includes full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and drainage improvements including new drainage outfalls in select locations. This work will take place in existing developed areas, and as such, should be considered "redevelopment".**

**This project encompasses the reconstruction of roads and structures owned by state highway agencies prior to August 7, 1996, meaning activities to maintain these facilities are grandfathered from requirements of the Massachusetts Rivers Protection Act. Although Riverfront Area mitigation is not required, mitigation for Riverfront Areas was considered for this project, but determined to be infeasible due to limited space within the Right of Way. The Riverfront Area is a mix of already impacted urban and natural areas. Specifically, mitigation including the replication or restoration of Riverfront Area elsewhere in the project or nearby was considered; however, due to limited area within the Right of Way, and the adjacent commercial areas, this is not feasible.**

**Tree restoration/replanting is proposed within the 200-ft Riverfront Area of Maple Meadow Brook (270 SF± and 11,000 SF± at the wetland replication site). The proposed restoration area restores more than double the Riverfront Area, which is being impacted by road widening.**

**Tree Restoration**

**Clearing and grabbing will be required for this project. The overall Route 38 project area of clearing and grubbing is approximately 66,500 SF±. As part of the subject project's tree restoration efforts, several locations within the project limits have been designated for replanting to mitigate the removal of trees affected by construction. All proposed trees and plantings will be within the public right of way, with the most notable areas being from STA. 233+00 – STA. 235+00 RT, STA. 248+00 STA. 249+00 RT, and at the proposed MBTA bus stop on Old Main Street. There is a total of 36 Deciduous trees being planted in Upland Areas, and 24 Deciduous trees being planted inside the Wetland Replication Area. Additionally, trees and shrubs will be planted at the wetland replication site at 201 Lowell Street and the drainage basin on Old Main Street to help restore green spaces impacted by the project.**

If the project is proposed to be constructed in phases, please describe each phase:

## Construction Phasing:

**Construction phasing for the Route 38 (Main Street) project will ultimately be determined by the project contractor. The construction phasing is assumed to generally include the following items:**

1. **Coordination with private utility companies for utility relocations.**
2. **Installation of sediment and erosion control measures.**
3. **Tree removal and the pruning and trimming of trees in sections along Route 38.**
4. **Construction of new catch basins, drainage improvements and culvert replacements/extensions in sections along Route 38.**
5. **Construction of improvements to the existing water system**
6. **Traffic Management throughout construction.**

7. **Clearing and rough grading along Route 38 including areas for wetland replication and flood storage compensation areas.**
8. **Construction of the stormwater SCMs**
9. **Construction of the retaining wall south of the Route 38 and Route 62 Intersection.**
10. **Construction and installation of the sidewalk, curb ramps, and curbing in sections along Route 38.**
11. **Construction and installation of the proposed traffic signals equipment.**
12. **Demolition of pavement in sections along Route 38.**
13. **Milling of pavement where needed.**
14. **Roadway full depth construction, upgrading signage and pavement markings.**
15. **Construction of wetland replication area, installation of wetland replication area plantings and maintenance of plantings.**
16. **Construction of flood storage compensation area.**
17. **Installation of landscaping and grassed areas.**
18. **Maintaining wetland replication area: checking for plantings that are damaged or failing to thrive and adjusting/replacing plantings as recommended by Wetland Specialist.**
19. **Removal of sediment and erosion control measures and dispose of same.**

**Equipment that is likely to be utilized for this project includes dump trucks, flatbed trucks, front-end loader(s), backhoe(s), skid steer(s), excavator, hoe rams, drilling rigs, concrete pumpers, boom trucks, air hammers, air compressor(s), and a crane. Equipment can be parked on roadway pavements off-limits for construction staging purposes. Staging equipment in Vegetated Wetland or Land Under Water resource areas shall be prohibited.**

**The anticipated duration of construction is a period of 64 months.**

**AREAS OF CRITICAL ENVIRONMENTAL CONCERN:**

Is the project within or adjacent to an Area of Critical Environmental Concern?

☐ Yes (Specify_____)

☒ No

if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No;
If yes, describe how the project complies with this plan.

_____

Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes **__X__** No;
If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.

_____

**RARE SPECIES:**

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)

☐ Yes (Specify_____ ) ☒ No

**HISTORICAL /ARCHAEOLOGICAL RESOURCES**:

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒ Yes (Specify_____ ) ☐ No

**The Middlesex Canal Historic and Archaeological District (WMG.H), which runs west of the project corridor, is on the National Register of Historic Places. There are two properties within this district, which are abutting the southwestern limit of the project. These properties, located at 967 Main Street (WMG.306) and 959 Main Street (WMG.305), appear to be privately owned residences.**

**Several other properties adjacent to the project corridor are identified in the state MACRIS (Massachusetts Cultural Resource Information System) database as properties of local historical significance, however none of them are eligible for inclusion in the National Register: Bridge W-38-02 crossing the Boston & Maine Railroad (WMG.909), 668 Main Street (WMG.41), Dublin Street**

**Signal Bridge (WMG.906), B & M Railroad New Hampshire Main Line Bridge (WMG.911) and 668 Main Street (WMG.41, demolished).**

**There are three conservation/recreation areas adjacent to the project corridor:**

- **Town Park Pumping Station water supply land, portion of which abuts Route 38 and is used by the Town of Wilmington as a dog park (823 Main Street)**
- **Yentile Farm Recreational Facility, located northeast of the Route 38/Cross Street intersection**
- **Legacy Park Conservation Restriction area, located west of the Route 38/Dublin Avenue intersection across the railroad tracks**

**Project impacts on the properties above listed are expected to be temporary in nature and will not affect any permanent changes in their uses. It may be necessary to utilize temporary entrances or temporary excavation areas for site access/site work at select locations on these properties to maintain the current uses for these areas, but they will all be restored to pre-existing conditions following completion of construction.**

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐Yes (Specify_____) ☒No

**WATER RESOURCES:**

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site? ___Yes **_X_** No;
if yes, identify the ORW and its location. _____

*(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)*

Are there any impaired water bodies on or within a half-mile radius of the project site? **_X__**Yes ___No; if yes, identify the water body and pollutant(s) causing the impairment:

**Maple Meadow Brook, MA92-04, low flow alterations – impairment is not caused by a pollutant. The impairment was related to the presence of one or more "pollutants", and the source of those pollutants was not considered to be natural. The causes of impairment in Maple Meadow Brook have been identified as dewatering* (*TMDL not required), and dissolved oxygen (no EPA TMDL Number).**

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? **_X__** Yes ___No **(high stress basin)**

**STORMWATER MANAGEMENT:**

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

**This project consists of maintenance and improvement of an existing roadway (including widening of less than a single lane, improvements to existing drainage systems and repaving). As the proposed project is a roadway project, which is increasing in impervious area by less than one lane, it is therefore categorized as a "Redevelopment Project" under the Massachusetts Stormwater Management Standards. A Stormwater Management Report is attached in Attachment D to this Application demonstrating the compliance of the project with the ten state stormwater standards and a summary of the project's compliance with each of the standards can be found below:**

**Standard 1: (Untreated discharges)**
***No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.***

**The project has been designed to comply with Standard 1. All new outfalls are designed with flared end sections and rip rap protection to prevent erosion to the existing wetland systems. Stormwater runoff will be treated by deep sump hooded catch basins, and the project includes two subsurface infiltration systems with isolator rows for pretreatment and an infiltration basin with a forebay to provide additional treatment. Drainage patterns are being maintained throughout the project area to the extent practicable. The majority of outfalls will be reconstructed adjacent to existing outfall locations. Closed drainage systems will be constructed and located where new sidewalks will obstruct existing country drainage. All new inlet structures will have deep sumps and hoods. There are no new untreated point source discharges created as a result of this project. Additional information describing the changes to the drainage systems is included in the Stormwater Report included in Attachment D. This standard is fully met.**

**Standard 2: (Peak rate control and flood prevention)**
***Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as designed in 310 CMR 10.04.***

**Standard 2 requires that the rates of flow be attenuated for the proposed development condition. This project is a redevelopment project and is required to meet Standard 2 to the maximum extent practicable. The peak flow rates were calculated for the 2-, 10-, and 100-year storm events under proposed conditions and compared to the existing peak flow rates. The realignment of the roadway and construction of a typical 32-foot pavement width results in an overall increase of 60,700 square feet in impervious area within the project limits. While there is a net increase in impervious area, the proposed project will implement three proposed SCMs to help mitigate the increase in peak rates. Though there is an increase in peak flow rates for DP-4, DP-7, DP-9, DP-11, DP-14, DP-15, DP-16, DP-18, DP-19, and DP-20 for some or all storm events, the corresponding increase in peak volume translates to a small impact to the corresponding downstream wetland or waterbody. See attached Stormwater Report for detailed explanation on peak rate analysis at each discharge point. The proposed project meets this requirement to the maximum extent practicable.**

**Area from DP-3 has been rerouted to DP-4 under proposed conditions, which discharges to Wetland A and has an approximate area of 55.33 acres. While there is an increase in peak rates for all storm events at DP-4 (Wetland A), the total peak volume for the 100-year storm event will result in a net increase of 0.586 acre-feet (af), which results in a net rise of approximately 0.13 inches, which is negligible.**

**DP-7 discharges to Wetland D, which has an approximate area of 2.80 acres and will see an increase in peak rates for all storm events. The total peak volume for the 100-year storm event will result in a net increase of 0.341 af, which results in an increased depth of approximately 1.46 inches within the wetland. The increase in peak rates is mainly due to rerouting of the roadway runoff from the upstream area (DP-8) to the downstream area (DP-7). Wetland D (DP-7) is hydraulically connected to Wetland C (DP-8) though a 36" culvert and has a total area of 4.78 acres. Since Wetland D and C are hydraulically connected, when combining volumes for DP-7 (Wetland D) and DP-8 (Wetland C), Wetland C/D will see an increase of 0.241 af, resulting in a net rise of approximately 0.60 inches, which is negligible.**

**DP-9 discharges to Wetland E, which has an approximate area of 14.72 acres and will see an increase in peak rates for all storm events. The total peak volume for the 100-year storm event will result in a net increase of 0.693 af, which results in an increased depth of approximately 0.57 inches, which is negligible.**

**DP-11 discharges to Wetland I, which has an approximate area of 1.35 acres and will see an increase in peak rates for all storm events. The total peak volume for the 100-year storm event will result in a net increase of 0.029 af, which results in an increased depth of approximately 0.26 inches, which is negligible.**

**DP-14 discharges at an existing outfall that will be replaced as part of this project and stormwater travels via overland flow to the west into wooded property. There is an increase in peak rates for 2-, 10- and 100-year storm events at DP-14. The increase in peak rates is due to site constraints along the roadway corridor that limit where a proposed Stormwater Control Measure (SCM) can be**

**constructed. The proposed project includes a new subsurface infiltration system (SCM-1) within a parking lot owned by the Town; however, it is in a location that only captures the upstream stormwater runoff from this area (PDA-14A). Runoff downstream from this SCM (PDA-14B) is not able to be captured and treated with a SCM. The proposed SCM will provide significant mitigation; however, this discharge point will have a minor increase in peak rates consisting of 0.48 cfs, 0.05 cfs, and 0.10 cfs for the 2-, 10-, and 100-year storm events respectively, which are negligible.**

**DP-15 discharges overland flow to the east and will see an increase in peak rates for all storm events. The increase in peak rates are 0.23 cfs, 0.23 cfs, and 0.19 cfs for the 2-, 10-, and 100-year storm events respectively, which are negligible.**

**DP-16 discharges overland flow to the east and will see an increase in peak rates for 2- and 10-year storm events. The increase in peak rates are 0.04 cfs and 0.03 cfs for the 2- and 10-year storm events respectively, which are negligible.**

**DP-18 discharges to Wetland H, which has an approximate area of 2.42 acres and will see an increase in peak rates for all storm events. An aboveground infiltration basin (SCM-2) is proposed to treat a portion of the watershed area (PDA-18D1) to help mitigate peak rates; however, due to site constraints it is not feasible to treat the entire area discharging to DP-18. The total peak volume for the 100-year storm event will result in a net increase of 0.161 af, which results in an increased depth of approximately 0.80 inches, which is negligible.**

**DP-19 discharges overland flow and gutter flow to the east and will see an increase in peak rates for for all storm events. The increase in peak rates are 0.18 cfs, 0.18 cfs, and 0.14 cfs for the 2-, 10-, and 100-year storm events respectively, which are negligible.**

**Per MassDOT Requirements, a proposed stormwater SCM must hold peak volumes up to the 10-year storm event. The proposed SCMs meet this requirement to the maximum extent practicable. Therefore, this standard is met to the maximum extent practicable.**

**Standard 3: (Recharge to Ground water)**

***Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures, including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post development site shall approximate the annual recharge from the predevelopment conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.***

**As stated previously, this project is a redevelopment project and is required to meet Standard 3 to the maximum extent practicable. This project has 506,700 square feet of total existing impervious area and 567,400 square feet of total proposed area within the limit of work. The required recharge volume for the total proposed impervious and the net increase in impervious area is 28,175 cubic feet (CF) and 2,990 CF, respectively. There is a net increase in impervious area of 60,700 square feet under proposed conditions, so there is a recharge volume requirement. The project has implemented three SCMs to maximize recharge at feasible locations within the project limits. These SCMs will provide an improvement to existing conditions as there are presently no stormwater mitigation practices within the project limits.**

**The contributing impervious areas and underlying Hydrologic Soil Group were used to estimate the recharge volume lost by development, which was used to calculate the required recharge volume for each SCM. The required recharge volume is 1,167 CF, 462 CF, and 260 CF for SCM-1, -2, and -3, respectively. The recharge storage volume provided is 3,511 CF, 955 CF, and 2453 CF for SCM-1, -2, and -3, respectively. Therefore, each SCM provides adequate volume for the impervious area that is routed to them. In addition, the combination of recharge volume provided by all three SCMs provides adequate storage for the required net increase of proposed impervious area for the project, but not for the required total proposed impervious area within the site. Therefore, Standard 3 is met to the maximum extent practicable.**

**Standard 4: (80% TSS Removal)**

***Stormwater management systems shall be designed to remove 80% of the average annual postconstruction load of Total Suspended Solids (TSS). This standard is met when:***

***a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan and thereafter are implemented and maintained;***
***b. Stormwater BMPs are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and***
***c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.***

**As stated previously, this project is a redevelopment project and is required to meet Standard 3 to the maximum extent practicable. As mentioned in Standard 3, there is a net increase in impervious area and three SCMs are proposed as part of this project. It has been designed to provide water quality treatment for the area of impervious surface that it captures. The treatment practices are:**

- **(1) Aboveground Infiltration Basin**
- **(2) Subsurface infiltration chambers**

**This standard is met to the maximum extent practicable.**

**Massachusetts Stormwater Regulations require a "Water Quality Depth" of 1 inch when the project site is located within a "critical area". This project is located within a Zone II, which is considered a critical area; therefore, a depth of 1" was used for the Water Quality calculations.**

**The proposed design aims to improve the water quality by installing three new infiltration SCMs. The required water quality volume for the total impervious area is 58,400 CF. The required water quality volume for the net increase in impervious area is 5,060 CF. The required water quality volume for the impervious area that SCM-1, SCM-2, and SCM-3 receives is 1,944 CF, 751 CF, and 1,041 CF, respectively. The combined storage volume of the three proposed SCMs is 6,919 CF, which provides enough volume for the net increase in impervious area, but not the total proposed impervious area. The SCMs also exceed the water quality volume requirement for the area they are designed to hold, by providing 3,511 CF, 955 CF, and 2,453 CF of storage for SCM-1, SCM-2, and SCM-3, respectively. Therefore, this standard will be met to the maximum extent practicable. See the Stormwater Report in Attachment D for required water quality volume calculations.**

**The project has been designed to include a minimum of 25% TSS removal for areas where SCM's were not feasible. Where SCM's are able to be installed, more than 80% TSS removal will be achieved. Since the project is located within a stormwater critical area, pretreatment of 44% TSS removal is required prior to an infiltration basin. All three SCM's include a combination of deep sump catch basins with either a forebay or isolator row that provide 44% TSS removal before the infiltration basins.**

**<u>Standard 5 (Higher Potential Pollutant Loads (HPPL)</u>**
***For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.***

**The project site is not considered a Land Use with Higher Potential Pollutant Loads (LUHPPL); therefore, Standard 5 is not applicable to this project.**

**<u>Standard 6 (Critical Areas)</u>**
***Stormwater discharges to a Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source***

***control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "stormwater discharge," as defined in 314 CMR 3.04(2)(a)1 or (b), to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.***

**This site discharges within a Zone II, which is considered a "critical area." This standard applies and the project must meet the 1" water quality requirement.**

**Water Quality treatment volume provided for all three SCM's have been sized for the 1". In addition, all three SCM's shall provide at least 44% TSS removal prior to discharge to the infiltration structure. The water quality standards for the proposed stormwater system have been addressed in Standard 4 of the stormwater report. Catch Basins with plastic hoods and 4' sumps are proposed throughout the project. The hoods will provide some volume to capture floatable oil, grease, and petroleum hydrocarbons if a spill occurs.**

**In addition, MassDOT follows established Best Management Practices (BMPs) and operational procedures and has implemented a range of strategies statewide to reduce the amount of road salt used and minimize its environmental impact. Such strategies include the increased use of liquid deicers to pre-wet dry material in order to reduce bounce and scatter and for pre-treating roadways prior to storms when conditions allow. Both of these techniques have been shown to reduce the overall application of sodium chloride. In addition, the use of closed loop controllers, pavement sensors and other equipment allows for more efficient operations.**

**<u>Standard 7: (Redevelopments and Other Projects Subject to the Standards only to the Maximum Extent Practicable)</u>**
***A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.***

**The improvements to Route 38 are considered a Redevelopment; therefore, Standard 7 is applicable to this project. This project provides an opportunity to improve the quality of stormwater runoff discharged to adjacent wetlands. The proposed stormwater enhancements are summarized below:**

- **Three infiltration SCMs are proposed as part of this project. A portion of the proposed drainage system has been designed to convey runoff to the SCMs for water quality treatment, and attenuation prior to discharge to the surrounding environment. The proposed SCMs are two subsurface infiltration systems and an aboveground infiltration basin.**

- **The new drainage system will follow existing drainage patterns by discharging at natural existing discharge points.**

**Below is a bulleted summary of project compliance to the standards:**
- **Standard 1 (Untreated Discharges) – Fully Met**
- **Standard 2 (Peak Rate Control and Flood Prevention) – Maximum Extent Practicable**
- **Standard 3 (Recharge to Groundwater) – Maximum Extent Practicable**
- **Standard 4 (80% TSS Removal) – Maximum Extent Practicable**
- **Standard 5 (Higher Potential Pollutant Loads) – N/A**
- **Standard 6 (Critical Areas) – Maximum Extent Practicable**
- **Standard 8 (Erosion Sediment Control) – Fully Met**
- **Standard 9 (Operations and Maintenance) – Fully Met**

**• Standard 10 (Illicit Discharges) – Fully Met**

**Standard 8: (Erosion, Sediment Control)**
***A plan to control construction-related impacts, including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan), shall be developed and implemented.***

**The implementation of erosion and sediment controls (ESC) during construction is considered a standard practice for all MassDOT projects. ESC will be installed before any land disturbance begins for the Project and will remain in place for the duration of the project. Construction period pollution prevention and erosion and sedimentation control measures will be implemented at the project site to control construction related impacts during construction and land disturbance activities. The General Contractor for the project will be responsible for the implementation of the construction period controls.**

**The project will disturb more than one acre of land during the construction process and will require a NPDES Construction General Permit issued by the Environmental Protection Agency. As a result, the General Contractor will be required to prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP document will satisfy the requirements of the Construction General Permit and the construction period erosion, sedimentation and pollution prevention plan requirements outlined in Standard 8 of the Massachusetts Stormwater Handbook. A SWPPP has not been prepared for inclusion with this stormwater report; however, one will be prepared prior to any construction activities at the site by the General Contractor.**

**Erosion and sedimentation controls will be employed to prevent the erosion and transport of sediment into resource areas during the earthwork and construction phases of the project. Erosion and sedimentation control measures will be installed prior to site excavation or disturbance and will be maintained throughout the construction period.**

**Standard 9: (Operation and Maintenance)**
***A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.***

**MassDOT O&M plans are addressed at a statewide, programmatic level through the State's highway operation and maintenance program. Each MassDOT district office is responsible for providing operation and maintenance for the MassDOT stormwater management systems within their respective jurisdictions. Attachment D includes the full Stormwater Report as well as the O&M Plan for this project.**

**Standard 10 (Illicit Discharges)**
***All illicit discharges to the stormwater management system are prohibited.***

**Standard 10 of the Massachusetts Stormwater Handbook prohibits illicit discharges to stormwater management systems. As stated in the handbook, "The stormwater management system is the system for conveying, treating, and infiltrating stormwater on-site, including Stormwater Control Measures and any pipes intended to transport stormwater the groundwater, a surface water, or municipal separate storm sewer system. Illicit discharges to the stormwater management system are discharges that are not entirely comprised of stormwater."**

**An Illicit Discharge Compliance Statement is included in the Stormwater Report in Attachment D. Where a new closed drainage system will be constructed, there will be no connections to sanitary sewer. In other areas, stormwater runoff discharges via overland flow. The design plans submitted with this report have been designed in full compliance with Standard 10. The project area does not have any known illicit connections. Any illicit connections to the stormwater management system found in the project limit of work during construction will be removed and/or resolved through MassDOT's Illicit Discharge Detention and Elimination (IDDE) Program. The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges. The Stormwater Report in Attachment D includes the LTPPP for this project.**

**MASSACHUSETTS CONTINGENCY PLAN:**
Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes _X_ No ___ ; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification):_____

**There is one closed site that is within the project limits and is currently being regulated under M.G.L.c.21E. The site, RTN-3929, is the Tennessee Gas Fee Property located at 685-687 Main Street. The site is a closed site with an AUL and RAO Class A3 for petroleum release.**

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes _**X**__ No ___; if yes, describe which portion of the site and how the project will be consistent with the AUL: _____.

**As stated above, RTN-3929 is a closed site with an AUL for petroleum release located at 685-687 Main Street. The project will be consistent with the AUL and is not anticipated to impact this site.**

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN? Yes ___ No _**X**__ ; if yes, please describe:_____

**SOLID AND HAZARDOUS WASTE:**

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood: **ABC, if present, will remain onsite, crushed, and used as fill.**

*(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)*

Will your project disturb asbestos containing materials? Yes ___ No _**X**__; if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Describe anti-idling and other measures to limit emissions from construction equipment:
**Construction equipment will not be left idling when not in use for more than one (1) hour.**

**DESIGNATED WILD AND SCENIC RIVER:**
Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes ___ No _**X**__ ; if yes, specify name of river and designation:

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River? Yes ___ No ___ ; if yes, specify name of river and designation: _____;
if yes, will the project will result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River.
Yes ___ No ___ ;
if yes, describe the potential impacts to one or more of the "outstandingly remarkable" resources or stated purposes and mitigation measures proposed.

## ATTACHMENTS:

1. List of all attachments to this document.
2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.
3.. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
4 Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.
5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase).
6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
7. List of municipal and federal permits and reviews required by the project, as applicable.
8. Printout of output report from RMAT Climate Resilience Design Standards Tool, available here.
9. Printout from the EEA EJ Maps Viewer showing the project location relative to Environmental Justice (EJ) Populations located in whole or in part within a 1-mile and 5-mile radius of the project site.

## See ATTACHMENTS in the end of the report (bound separately):

Attachment A: Public Notice
Attachment B: MEPA Distribution List
Attachment C: Figures

- Figure 1: USGS Map
- Figure 2: Aerial Map
- Figure 3: Environmental Constraints Map
- Figure 4: FEMA Map
- Figure 5: Soils Map

Attachment D: Stormwater Management Report
Attachment E: Historic Resources Supporting Documentation
Attachment F: Environmental Justice Supporting Documentation
Attachment G: Hydraulic Report
Attachment H: RMAT Climate Resilience Design Standards Tool (the “RMAT Tool”) Report
Attachment I: ENF Submission Plan Set (bound separately)

## LAND SECTION

**I. Thresholds / Permits**

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1) ___ Yes **_X_** No; if yes, specify each threshold:

**II. Impacts and Permits**

A. Describe, in acres, the current and proposed character of the project site, as follows:

| | Existing | Change | Total |
|---|---|---|---|
| Footprint of buildings | **N/A** | **N/A** | **N/A** |
| Internal roadways | **11.65** | **1.40** | **13.05** |
| Parking and other paved areas | **N/A** | **N/A** | **N/A** |
| Other altered areas* | **4.00** | **-1.05** | **2.95** |
| Undeveloped areas** | **0.35** | **-0.35** | **0.0** |
| **TOTAL: Project Site Acreage** | **16.02** | **0.0** | **16.02** |

*Change in "Other altered areas" includes all impacted areas other than the existing impervious areas and the undeveloped areas. This number subtracts the net increase of **1.40** acres of impervious area and adds the increase of **0.35** acres for the wetland replication area, compensatory storage, and impacts to resource areas for a net alteration of other altered areas of **1.05** acres.

**Change in "Undeveloped areas" includes the impacts to wetland resource areas (including replication and compensatory flood storage) for a net change of **0.35 acres**.

B. Has any part of the project site been in active agricultural use in the last five years? ___ Yes **_X__** No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

C. Is any part of the project site currently or proposed to be in active forestry use? ___ Yes **_X__** No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

D. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___ Yes **_X__** No; if yes, describe:

E. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ___ Yes **_X_** No; if yes, does the project involve the release or modification of such restriction? ___ Yes ___ No; if yes, describe:

F. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes **_X__** No; if yes, describe:

G. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ No **_X__**; if yes, describe:

**III. Consistency**

A. Identify the current municipal comprehensive land use plan
Title: **Town of Wilmington Master Plan** Date: **2001**
Title: **Town of Wilmington Open Space and Recreation Plan** Date: **2021**

B. Describe the project's consistency with that plan with regard to:
1) economic development
**The goals of the Master Plan include encouraging appropriate and desirable economic development by promoting a mix of compatible land uses, promoting the development of vibrant activity centers while maintaining a small-town feel as well as improving internal vehicle circulation and pedestrian and bicycle mobility. Protection of water resources and preserving open space are also key community goals. One of the goals of the Wilmington Open Space and Recreation Plan (OSRP) is to provide opportunities for mobility locally and regionally with walking and biking trails. The project proposes roadway, safety, and drainage improvements in order to provide safe multi-modal accommodations for all types of roadway users by taking a Complete Streets approach while minimizing the impacts to water resources and providing drainage improvements that will enhance the quality of the stormwater runoff.**

2) adequacy of infrastructure
**Commercial, industrial, and population growth estimated in the near future can be accommodated by the improved Route 38, which includes what is considered to be the Town's shopping area. The new sidewalks, bicycle lanes/shoulders and improvements to intersections will enhance the safety of pedestrians and bicyclists, making this development consistent with the commitments in the Town's comprehensive land use plans.**

3) open space impacts
**No protected or recreational areas of open space will be impacted by the proposed roadway reconstruction and improvements.**

4) compatibility with adjacent land uses
**The proposed roadway reconstruction is anticipated to improve the movements and safety of motorized vehicles, bicyclists, and pedestrians in this developed area of Wilmington. Bicycle access and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility. In addition, the proposed improvements will enhance the aesthetics of the Route 38 corridor, as such, promoting economic development for the Town of Wilmington.**

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: **Boston Region Metropolitan Planning Organization/Metropolitan Area Planning Council**

Title: **Destination 2040/MetroFuture** Date: **October 2019/May 2008**

D. Describe the project's consistency with that plan with regard to:
1) economic development
**MetroFuture includes goals and objectives related to smart growth, preservation of natural landscapes, economic development, and general health. MetroFuture plan includes commitments to improve safety of the regional transportation network, and to promote economic vitality. The Long-Range Transportation Plan of the Boston Region MPO (Destination 2040) envisions a modern, well-**

**maintained transportation system that supports a sustainable, healthy, livable, and economically vibrant region. The proposed roadway reconstruction project is anticipated to improve the movements, and safety, of motorized vehicles, bicyclists, pedestrians in this area, and to enhance the esthetics of the Route 38 corridor, as such, promoting economic development for the Town of Wilmington.**

2) adequacy of infrastructure
**Commercial, industrial, and population growth estimated in the near future can be accommodated by the improved Route 38, which includes what is considered the Town's shopping area. The new sidewalks, bicycle lanes/shoulders and improvements to intersections will enhance the safety of pedestrians and bicyclists, making this development consistent with the commitments in the regional plan.**

3) open space impacts
**No protected or recreational areas of open space will be permanently impacted by the proposed roadway reconstruction and improvements. There will be temporary impacts to the Wilmington Dog Park located at 823 Main Street as a result of the installation of one of the SCMs. However, these impacts will be temporary in nature and will not result in a loss of open space.**

## RARE SPECIES SECTION

**I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ___ Yes **_X_** No; if yes, specify, in quantitative terms:

*(NOTE: If you are uncertain, it is recommended that you consult with the Natural Heritage and Endangered Species Program (NHESP) prior to submitting the ENF.)*

B. Does the project require any state permits related to **rare species or habitat**? ___ Yes **_X_** No

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat?) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes **_X_** No.

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

**II. Impacts and Permits**

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes ___ No. If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? ___Yes ___No; if yes, have you received a determination as to whether the project will result in the "take" of a rare species? ___ Yes ___ No; if yes, attach the letter of determination to this submission.

2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes ___ No; if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts

3. Which rare species are known to occur within the Priority or Estimated Habitat?

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ___ Yes ___ No

4. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes ___ No; if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes ___ No; if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

# WETLANDS, WATERWAYS, AND TIDELANDS SECTION

**I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? **_X_** Yes ___ No; if yes, specify, in quantitative terms:

**301 CMR 11.03(3)(b)1(d) alteration of 5,000 or more sf of bordering or isolated vegetated wetlands;**
**301 CMR 11.03(3)(b)1(f) alteration of ½ or more acres of any other wetlands;**

B. Does the project require any state permits (or a local Order of Conditions) related to **wetlands, waterways, or tidelands**? **__X__** Yes ___ No; if yes, specify which permit:

**Order of Conditions, Section 401 Water Quality Certification**

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

**II. Wetlands Impacts and Permits**

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? **_X_** Yes ___ No; if yes, has a Notice of Intent been filed? **_X_** Yes __No; if yes, list the date and MassDEP file number: **__344-1566___**; if yes, has a local Order of Conditions been issued? ___ Yes **_X (Pending – ETA May 7, 2025)_** No; Was the Order of Conditions appealed? ___ Yes **_X_** No. Will the project require a Variance from the Wetlands regulations? __Yes **_X_** No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

**The proposed work will occur within the Bordering Vegetated Wetlands (BVWs), Land Under Water Bodies (LUW), Bank, Bordering Land Subject to Flooding (BLSF), Buffer Zones, and the Riverfront Area associated with Maple Meadow Brook. The proposed Environmental Impact Report (EIR) section 5.1.4 Regulatory Compliance discusses the impacts and mitigation measures proposed at each impacted resource area in more details.**

**BVW: The direct impacts to 2,806 square feet of BVWs cannot be avoided due to the roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, replacement of the culvert at Sta. 218+00 and extension of the culvert at Sta. 238+50, new drainage outfalls in select locations, raising the profile of Route 38 to tie into the realigned Butters Row, and associated regrading in the vicinity of the wetland areas. These permanent impact to BVWs within the project area cannot be avoided and will be mitigated through a replication area on a greater than 1:1 basis in accordance with state regulations. Temporary disturbance to BVW (2,329 square feet) will be required for installation of Erosion & Sediment Control BMPs in project areas directly adjacent to or within the BVW itself where the project limits directly adjoin or overlap with BVWs. Additional minor temporary impacts to BVW include the installation of utility pole guy wire anchors at select locations. After the erosion controls have been removed, the BVWs will be restored to preexisting conditions in accordance with the MassDOT Specification 755.45, Wetland Restoration. The proposed improvements to the drainage system will result in enhanced quality of the runoff that will, in turn, result in improved water quality (surface and ground), prevention of pollution and storm damage.**

**LUW: The proposed project activities will permanently impact 262 square feet of LUW and temporarily impact 164 square feet of LUW associated with the Unnamed Intermittent Stream crossing the project limits at approximate Sta. 218+00. These impacts are due to the**

**replacement of the culvert at Sta. 218+00 (Culvert No. 1) which includes the installation of natural streambed material as well as rip rap at the culvert inlet and outlet for scour protection. Additionally, the placement of rip rap at a new drainage outfall will result in minor temporary impacts (31 square feet) to LUW at Maple Meadow Brook at approximate Sta. 252+40. Impacts at Sta. 252+40 are primarily for access as well as the installation of Erosion & Sediment Controls (ESCs).**

**Bank: The proposed project activities will permanently impact 64 linear feet of bank associated with the Unnamed Intermittent Stream crossing the project limits at approximate Sta. 218+00. These activities consist of the replacement of the culvert at Sta. 218+00 which includes construction of the concrete headwalls, as well as the placement of rip rap at the culvert inlet and outlet for scour protection. Rip rap gaps will be filled with compost and seed mix to mitigate exposed riprap within resource areas. Riprap placed for scour countermeasures and bank stabilization will be vegetated with compost and seed mix to mitigate exposed riprap within resource areas as shown on the plans. Approximately 15 linear feet of temporary impacts to the bank are associated with the placement of riprap at a new drainage outfall located at approximately Sta. 252+40.**

**BLSF and Compensatory Flood Storage: A portion of the project that includes the Route 38 crossing over Maple Meadow Brook is located within a 100-year floodplain. The proposed project activities will occur within approximately 6,815 square feet of BLSF area, due to the proposed full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and new drainage outfalls in select locations. The fill is predominantly associated with the addition of a sidewalk on the west side of the roadway. A compensatory flood storage area is proposed on the west side of the roadway between Sta. 258+00 and Sta. 260+00; this area is hydrologically connected to the affected floodplain and will provide flood storage compensation on a foot-by-foot basis. The project is able to compensate the entire project's flood storage loss between elevations 80-92.9 feet. The lost flood storage volume of 2,155 cubic feet is more than balanced by the creation of 4,161 cubic feet of storage as demonstrated in the table below.**

**Table 3: Compensatory Flood Storage**

| Elevation (FT) | Volume of Cut (CF) | Volume of Fill (CF) | Incremental Net Cut/Fill Volume (CF) |
|---|---|---|---|
| 79.0 | | | |
| | 0 | 0 | 0 |
| 80.0 | | | |
| | 147 | 7 | -140 |
| 81.0 | | | |
| | 1,804 | 925 | -879 |
| 82.0 | | | |
| | 2,210 | 1,222 | -988 |
| 82.9 | | | |
| TOTAL | 4,161 | 2,155 | -2,007 |

**The project is not changing the FEMA delineated 100-year floodplain. The proposed flood storage compensation area will be located between Sta. 258+00 and Sta. 260+00 on the west side of Route 38 and will comply with the General Performance Standards presented in 310 CMR 10.57 (4)(a).**

**Riverfront Area: A portion of the project is located within the 200-foot Riverfront area associated with Maple Meadow Brook (71,960 square feet). The majority of the Riverfront Area within the project corridor consists of the existing roadway and is degraded; therefore, the project will meet requirements of 310 CMR 10.58(5). The work within small undeveloped portions of the Riverfront Area is unavoidable due to culvert replacements, associated regrading and placement of the erosion and sediments controls to protect nearby BVWs. Where possible, disturbed areas will be loamed and seeded. Portions of the Riverfront Area within the project corridor will be improved as a result of this project. Tree restoration, control of invasive species and loam and seed of disturbed areas are proposed where feasible. Tree restoration/replanting is proposed within the 200-ft Riverfront Area of Maple Meadow Brook (approx. from Sta 248+50 to 261+50) (270 SF± and 11,000 SF± at the wetland replication site).**

**Buffer Zones: Approximately 189,596 square feet of the project is located within the 100-foot Buffer Zones to BVWs, vernal pools, and intermittent streams. The proposed work within the 100-foot buffer zones includes clearing and grubbing, regrading, mill and overlay, full depth reconstruction, and box widening. To minimize the impact to the adjacent wetland resource areas and their buffer zones, proper erosion and sediment controls will be installed as shown on the plans and will remain in place for the duration of construction.**

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

| Coastal Wetlands | Area (square feet) or Length (linear feet) | Temporary or Permanent Impact? |
|---|---|---|
| Land Under the Ocean | N/A | N/A |
| Designated Port Areas | N/A | N/A |
| Coastal Beaches | N/A | N/A |
| Coastal Dunes | N/A | N/A |
| Barrier Beaches | N/A | N/A |
| Coastal Banks | N/A | N/A |
| Rocky Intertidal Shores | N/A | N/A |
| Salt Marshes | N/A | N/A |
| Land Under Salt Ponds | N/A | N/A |
| Land Containing Shellfish | N/A | N/A |
| Fish Runs | N/A | N/A |
| Land Subject to Coastal Storm Flowage | N/A | N/A |

| Inland Wetlands | | |
|---|---|---|
| Bank (lf) | 64 (P) and 15 (T) | Permanent and Temporary |
| Bordering Vegetated Wetlands | 2,806 (P) and 2,329 (T) | Permanent and Temporary |
| Isolated Vegetated Wetlands | N/A | N/A |
| Land under Water | 262 (P) and 195 (T) | Permanent and Temporary |
| Isolated Land Subject to Flooding | N/A | N/A |
| Bordering Land Subject to Flooding | 6,815 | Permanent |
| Riverfront Area | 71,960 | Permanent |

D. Is any part of the project:

1. proposed as a **limited project**? **X** Yes _ No; if yes, what is the area (in sf)? **697,629 (entire project)**

**The entire project, approximately 697,629 square feet or 16.02 acres, falls under the criteria of the Limited Project provision of the WPA listed under 310 CMR 10.53(3)(f): *Maintenance and improvement of existing public roadways, but limited to widening less than a single lane, adding shoulders, correcting substandard intersections, and improving inadequate drainage systems*.**

2. the construction or alteration of a **dam**? ___ Yes **_X_** No; if yes, describe:
3. fill or structure in a **velocity zone** or **regulatory floodway**? ___ Yes **_X_** No
4. dredging or disposal of dredged material? **_X_** Yes **____** No; if yes, describe the volume of dredged material and the proposed disposal site: **The replacement of culvert at Sta. 218+00 will result with dredging of 65 cubic yards in the Unnamed Intermittent Stream**
Volume of dredged material: **65 CY**
Proposed disposal site**: N/A – When suitable, dredged materials will be reused as structural fill on site to the maximum extent practicable. Excess material will be disposed of at the State designated disposal upland site as needed. There will be no ocean disposal.**

5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? ___ Yes **_X_** No
6. subject to a wetlands restriction order? ___ Yes **_X_** No; if yes, identify the area (in sf):
7. located in buffer zones? **_X_**Yes ___No; if yes, how much (in sf) **_189,596_**

E. Will the project:
1. be subject to a local wetlands ordinance or bylaw? ___ Yes **_X_** No
2. alter any federally-protected wetlands not regulated under state law? ___ Yes **_X_** No; if yes, what is the area (sf)?

**III. Waterways and Tidelands Impacts and Permits**

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? ____Yes **_X_** No; if yes, is there a current Chapter 91 License or Permit affecting the project site? ___ Yes ___ No; if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:

B. Does the project require a new or modified license or permit under M.G.L.c.91? ___ Yes **_X_** No; if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use?
Current ___ Change ___ Total ___
If yes, how many square feet of solid fill or pile-supported structures (in sf)?

C. For non-water-dependent use projects, indicate the following:
Area of filled tidelands on the site: _____**N/A**_____
Area of filled tidelands covered by buildings: ___**N/A**_____
For portions of site on filled tidelands, list ground floor uses and area of each use:
_____
Does the project include new non-water-dependent uses located over flowed tidelands?
Yes ___ No **_X_**
Height of building on filled tidelands_____

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands? __ Yes **_X_** No; if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? ___Yes **_X_** No; if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or

tidelands subject to the Waterways Act **and** subject to a mandatory EIR? ___ Yes _**X**_ No;
*(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)*

G. Does the project include dredging? _X_ Yes ___ No; if yes, answer the following questions:
What type of dredging? Improvement____Maintenance_X_____
What is the proposed dredge volume, in cubic yards (cys) 65
What is the proposed dredge footprint__70__length (ft)__7__width (ft)__3__depth (ft);
Will dredging impact the following resource areas?
Intertidal Yes__ No_**X**_; if yes, ___ sq ft
Outstanding Resource Waters Yes__ No_**X**_; if yes, ___ sq ft
Other resource area (i.e. shellfish beds, eel grass beds) Yes__ No_X_; if yes __ sq ft
If yes to any of the above, have you evaluated appropriate and practicable steps to: 1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?
If no to any of the above, what information or documentation was used to support this determination?
**The work within the LUW and associated dredging is for a culvert replacement at Sta. 218+00.**

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.
Sediment Characterization
Existing gradation analysis results? ___Yes _**X**__No: if yes, provide results.
Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ___Yes _**X**__No; if yes, provide results.

**N/A**

Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment? If yes, check the appropriate option.
Beach Nourishment ___
Unconfined Ocean Disposal ___
Confined Disposal:
Confined Aquatic Disposal (CAD) ___
Confined Disposal Facility (CDF) ___
Landfill Reuse in accordance with COMM-97-001 ___
Shoreline Placement ___
Upland Material Reuse____
In-State landfill disposal____
Out-of-state landfill disposal ____
*(NOTE: This information is required for a 401 Water Quality Certification.)*

**IV. Consistency**:
A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? ____Yes _**X**__ No; if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

B. Is the project located within an area subject to a Municipal Harbor Plan? ___ Yes _**X**__ No; if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

# WATER SUPPLY SECTION

## I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ___ Yes **_X__** No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to water supply? ___ Yes _**X**__ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

## II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

| | Existing | Change | Total |
|---|---|---|---|
| Municipal or regional water supply | _____ | _____ | _____ |
| Withdrawal from groundwater | _____ | _____ | _____ |
| Withdrawal from surface water | _____ | _____ | _____ |
| Interbasin transfer | _____ | _____ | _____ |

*(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)*

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ___ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ___ Yes ___ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results. _____

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)? Will the project require an increase in that withdrawal? ___Yes ___No; if yes, then how much of an increase (gpd)? _____

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ___ Yes ___No. If yes, describe existing and proposed water supply facilities at the project site:

| | Permitted Flow | Existing Avg Daily Flow | Project Flow | Total |
|---|---|---|---|---|
| Capacity of water supply well(s) (gpd) | _____ | _____ | _____ | _____ |
| Capacity of water treatment plant (gpd) | _____ | _____ | _____ | _____ |

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:

1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___Yes ___No
2. a Watershed Protection Act variance? ___ Yes ___ No; if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ___Yes ___ No

## III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

## WASTEWATER SECTION

### I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ___ Yes _**X**_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? ___ Yes _**X**_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

### II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

| | Existing | Change | Total |
|---|---|---|---|
| Discharge of sanitary wastewater | _____ | _____ | _____ |
| Discharge of industrial wastewater | _____ | _____ | _____ |
| TOTAL | _____ | _____ | _____ |

| | Existing | Change | Total |
|---|---|---|---|
| Discharge to groundwater | _____ | _____ | _____ |
| Discharge to outstanding resource water | _____ | _____ | _____ |
| Discharge to surface water | _____ | _____ | _____ |
| Discharge to municipal or regional wastewater facility | _____ | _____ | _____ |
| TOTAL | _____ | _____ | _____ |

B. Is the existing collection system at or near its capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ___ Yes ___ No; if yes, describe as follows:

| | Permitted | Existing Avg Daily Flow | Project Flow | Total |
|---|---|---|---|---|
| Wastewater treatment plant capacity (in gallons per day) | _____ | _____ | _____ | _____ |

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

*(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of water supply is located.)*

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? ___ Yes ___ No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials? ___ Yes ___ No; if yes, what is the capacity (tons per day):

| | Existing | Change | Total |
|---|---|---|---|
| Storage | _____ | _____ | _____ |
| Treatment | _____ | _____ | _____ |
| Processing | _____ | _____ | _____ |
| Combustion | _____ | _____ | _____ |
| Disposal | _____ | _____ | _____ |

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

**III. Consistency**

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes ___ No; if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

# TRANSPORTATION SECTION (TRAFFIC GENERATION)

## I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? ____Yes _**X**__ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **state-controlled roadways**? ___ Yes _**X**__ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

## II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

| | Existing | Change | Total |
|---|---|---|---|
| Number of parking spaces | _____ | _____ | _____ |
| Number of vehicle trips per day | _____ | _____ | _____ |
| ITE Land Use Code(s): | _____ | _____ | _____ |

B. What is the estimated average daily traffic on roadways serving the site?

| Roadway | Existing | Change | Total |
|---|---|---|---|
| 1. _____ | _____ | _____ | _____ |
| 2. _____ | _____ | _____ | _____ |
| 3. _____ | _____ | _____ | _____ |

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement:

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

C. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? _____Yes _____No; if yes, describe if and how will the project will participate in the TMA:

D. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? _____Yes _____No; if yes, generally describe:

E. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?

## III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

## TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

**I. Thresholds**

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? ___ Yes _**X**__ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ___ Yes __**X**_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

**II. Transportation Facility Impacts**

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

B. Will the project involve any

1. Alteration of bank or terrain (in linear feet)? _____
2. Cutting of living public shade trees (number)? _____
3. Elimination of stone wall (in linear feet)? _____

**III. Consistency --** Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

# ENERGY SECTION

## I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ___ Yes __**X**__ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ___ Yes __**X**__ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

## II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

| | Existing | Change | Total |
|---|---|---|---|
| Capacity of electric generating facility (megawatts) | _____ | _____ | _____ |
| Length of fuel line (in miles) | _____ | _____ | _____ |
| Length of transmission lines (in miles) | _____ | _____ | _____ |
| Capacity of transmission lines (in kilovolts) | _____ | _____ | _____ |

B. If the project involves construction or expansion of an electric generating facility, what are:

1. the facility's current and proposed fuel source(s)?
2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ___Yes ___No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

## III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

# AIR QUALITY SECTION

**I. Thresholds**

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___ Yes _**X**__ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___ Yes _**X**__ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

**II. Impacts and Permits**

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ___ Yes ___ No; if yes, describe existing and proposed emissions (in tons per day) of:

| | Existing | Change | Total |
|---|---|---|---|
| Particulate matter | _____ | _____ | _____ |
| Carbon monoxide | _____ | _____ | _____ |
| Sulfur dioxide | _____ | _____ | _____ |
| Volatile organic compounds | _____ | _____ | _____ |
| Oxides of nitrogen | _____ | _____ | _____ |
| Lead | _____ | _____ | _____ |
| Any hazardous air pollutant | _____ | _____ | _____ |
| Carbon dioxide | _____ | _____ | _____ |

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

**III. Consistency**

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

## SOLID AND HAZARDOUS WASTE SECTION

**I. Thresholds / Permits**

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___ Yes _**X**__ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? ___ Yes _**X**__ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

**II. Impacts and Permits**

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ___ Yes ___ No; if yes, what is the volume (in tons per day) of the capacity:

| | Existing | Change | Total |
|---|---|---|---|
| Storage | _____ | _____ | _____ |
| Treatment, processing | _____ | _____ | _____ |
| Combustion | _____ | _____ | _____ |
| Disposal | _____ | _____ | _____ |

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ___ Yes ___ No; if yes, what is the volume (in tons or gallons per day) of the capacity:

| | Existing | Change | Total |
|---|---|---|---|
| Storage | _____ | _____ | _____ |
| Recycling | _____ | _____ | _____ |
| Treatment | _____ | _____ | _____ |
| Disposal | _____ | _____ | _____ |

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos? ___ Yes ___ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

**III. Consistency**

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

# HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

**I. Thresholds / Impacts**

A. Have you consulted with the Massachusetts Historical Commission? _**X**__ Yes ___ No; if yes, attach correspondence. For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? _**X**___ Yes ____ No; if yes, attach correspondence

**MassDOT Highway Division's Cultural Resources Unit (CRU) has reviewed the proposed project to assess impacts to cultural, historical, and archaeological resources in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended. On 10/11/2023, in accordance with Stipulation V.B. of the Programmatic Agreement, MassDOT completed review of the Project. The proposed reconstruction work on Route 38 (Main Street) is expected to receive a Determination of No Adverse Effect on properties that are listed or eligible for listing in the National Register of Historic Places (see Attachment E).**

**The Middlesex Canal Historic and Archaeological District (WMG.H), which runs west of the project corridor, is on the National Register of Historic Places. There are two properties within this district, which are abutting the southwestern limit of the project. These properties, located at 967 Main Street (WMG.306) and 959 Main Street (WMG.305), appear to be privately owned residences.**

**Several other properties adjacent to the project corridor are identified in the state MACRIS (Massachusetts Cultural Resource Information System) database as properties of local historical significance, however none of them are eligible for inclusion in the National Register: Bridge W-38-02 crossing the Boston & Maine Railroad (WMG.909), 668 Main Street (WMG.41), Dublin Street Signal Bridge (WMG.906), B & M Railroad New Hampshire Main Line Bridge (WMG.911) and 668 Main Street (WMG.41, demolished).**

**There are three conservation/recreation areas adjacent to the project corridor:**

- **Town Park Pumping Station water supply land, portion of which abuts Route 38 and is used by the Town of Wilmington as a dog park (823 Main Street).**
- **Yentile Farm Recreational Facility, located northeast of the Route 38/Cross Street intersection.**
- **Legacy Park Conservation Restriction area, located west of the Route 38/Dublin Avenue intersection across the railroad tracks.**

**Project impacts on the properties above listed are expected to be temporary in nature and will not effect any permanent changes in their uses. It may be necessary to utilize temporary entrances or temporary excavation areas for site access/site work at select locations on these properties to maintain the current uses for these areas, but they will all be restored to pre-existing conditions following completion of construction.**

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes _**X**__ No; if yes, does the project involve the demolition of all or any exterior part of such historic structure? ___ Yes ___ No; if yes, please describe:

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? ___ Yes _**X**__ No; if yes, does the project involve the destruction of all or any part of such archaeological site? ___ Yes ___ No; if yes, please describe:

D. If you answered "No" to <u>all parts of both</u> questions A, B and C, proceed to the **Attachments and**

**Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

**II. Impacts**

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

**N/A - The Project does not involve demolishing historic structures and will not impact any archaeological sites. Please see answers to B and C.**

**III. Consistency**

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

**N/A - The Project does not involve demolishing historic structures and will not impact any archaeological sites. Please see answers to B and C.**

## CLIMATE CHANGE ADAPTATION AND RESILIENCY SECTION

This section of the Environmental Notification Form (ENF) solicits information and disclosures related to climate change adaptation and resiliency, in accordance with the MEPA Interim Protocol on Climate Change Adaptation and Resiliency (the "MEPA Interim Protocol"), effective October 1, 2021. The Interim Protocol builds on the analysis and recommendations of the 2018 Massachusetts Integrated State Hazard Mitigation and Climate Adaptation Plan (SHMCAP), and incorporates the efforts of the Resilient Massachusetts Action Team (RMAT), the inter-agency steering committee responsible for implementation, monitoring, and maintenance of the SHMCAP, including the "Climate Resilience Design Standards and Guidelines" project. The RMAT team recently released the RMAT Climate Resilience Design Standards Tool, which is available here.

The MEPA Interim Protocol is intended to gather project-level data in a standardized manner that will both inform the MEPA review process and assist the RMAT team in evaluating the accuracy and effectiveness of the RMAT Climate Resilience Design Standards Tool. Once this testing process is completed, the MEPA Office anticipates developing a formal Climate Change Adaptation and Resiliency Policy through a public stakeholder process. Questions about the RMAT Climate Resilience Design Standards Tool can be directed to rmat@mass.gov.

**All Proponents must complete the following section, referencing as appropriate the results of the output report generated by the RMAT Climate Resilience Design Standards Tool and attached to the ENF**. In completing this section, Proponents are encouraged, but not required at this time, to utilize the recommended design standards and associated Tier 1/2/3 methodologies outlined in the RMAT Climate Resilience Design Standards Tool to analyze the project design. However, Proponents are requested to respond to a respond to a user feedback survey on the RMAT website or to provide feedback to rmat@mass.gov, which will be used by the RMAT team to further refine the tool. Proponents are also encouraged to consult general guidance and best practices as described in the RMAT Climate Resilience Design Guidelines.

Climate Change Adaptation and Resiliency Strategies

I. Has the project taken measures to adapt to climate change for all of the climate parameters analyzed in the RMAT Climate Resilience Design Standards Tool (sea level rise/storm surge, extreme precipitation (urban or riverine flooding), extreme heat)? **_X_** Yes **__** No

*Note: Climate adaptation and resiliency strategies include actions that seek to reduce vulnerability to anticipated climate risks and improve resiliency for future climate conditions. Examples of climate adaptation and resiliency strategies include flood barriers, increased stormwater infiltration, living shorelines, elevated infrastructure, increased tree canopy, etc. Projects should address any planning priorities identified by the affected municipality through the Municipal Vulnerability Preparedness (MVP) program or other planning efforts, and should consider a flexible adaptive pathways approach, an adaptation best practice that encourages design strategies that adapt over time to respond to changing climate conditions. General guidance and best practices for designing for climate risk are described in the* RMAT Climate Resilience Design Guidelines*.*

A. If no, explain why.

**N/A, see B below for explanation of how project has taken measures to adapt to climate change for the parameters analyzed in the RMAT Report.**

B. If yes, describe the measures the project will take, including identifying the planning horizon and climate data used in designing project components. If applicable, specify the return period and design storm used (e.g., 100-year, 24-hour storm).

**The RMAT Tool Project Report (refer to Appendix H) identified the project as being at "High Exposure" for Extreme Precipitation (Urban Flooding), "High Exposure" for Extreme**

**Heat, and "High Exposure" for Extreme Precipitation (Riverine Flooding).**

**According to the RMAT report, the project received a "High Risk" rating for Extreme Precipitation because the project is within a mapped FEMA floodplain (Zone AE) within the established BFE. In addition, portions of the project are within 100 ft of Maple Meadow Brook which has a 100-year flood elevation of 82.9 feet upstream and 81.5 feet downstream of Route 38 (NAVD 88). The project also received a "High Exposure" rating for extreme participation causing urban flooding since the project results in approximate increase of impervious surface area of 59,623 square feet and because the maximum annual daily rainfall is anticipated to exceed 10 inches within the overall project's useful life.**

**The RMAT Tool recommends planning for the 25-year, 24-hour event in 2070, which is projected to be 7.3 inches. The current 100 year, 24-hour event is 6.39 inches based on NOAA Atlas 14 precipitation frequency estimates. The proposed stormwater control measures (SCMs) will be designed to handle the current 100-year, 24-hour storm which is projected to be 8.23 inches. Although curbing in some sections will prevent sheet flow that currently exists, the new drainage systems will maintain the historic drainage patterns, distributing runoff to the existing discharge points. The project also proposes a compensatory flood storage area of 4,161 cubic feet (cf) in order to mitigate for the net fill from the project. The compensatory flood storage has been designed to exceed the project's net fill in order to provide a net cut of approximately 2,007 cf across the project which will aid in the project's ability to mitigate flood waters. The proposed flood storage compensation area will be located at the southern end of the project (approx. Sta. 257+50) and will comply with the General Performance Standards presented in 310 CMR 10.57 (4)(a). The project will comply with the Massachusetts Stormwater Management Standards and MassDOT's Stormwater Design Guide, which includes evaluating the impact of peak discharge from the 25-year, 24-hour event. Furthermore, the stormwater system is designed to mimic the natural hydrology of the corridor, maintaining existing drainage patterns to the maximum extent practicable, reducing runoff velocities and volumes, and sustaining groundwater recharge.**

**The RMAT Tool also identified the project as "High Exposure" for extreme heat due to its urban location and since the project is increasing impervious area, and because it is anticipated that there will be a 30+ day increase in the number of days over 90 degrees within the project's useful life. In addition, the project will have increased impervious area and existing impervious area of the project site is greater than 50%. Further, existing trees are being removed as part of the proposed project. Although the project is increasing impervious area within the project site, which can increase local temperatures, the project will incorporate a wetland replication area, wetland restoration and creation of additional flood storage area across the project site, which will aid in reducing the heat island effect through processes such as evapotranspiration, shading, and heat absorption and storage. A total of 60 deciduous trees will be planted across the upland and wetland portions of the project area, many of which will be planted along the proposed sidewalks, providing pedestrians with refuge from the sun. Further, the planted vegetation will also serve as a local carbon sink, helping combat the greenhouse effect of carbon dioxide in the atmosphere, decreasing the rapidity with which climate change occurs.**

**Overall, although the project is increasing impervious area and received "High" exposure scores for flooding and extreme heat, this project received a "Moderate" Project score for its net benefits in the "Ecosystem Service" category since the project will result in a variety of environmental and ecosystem benefits which are intended to have a positive impact on the surrounding area. The factors that contribute to the "Moderate" Project score include that the project provides flood protection through nature-based solutions, protects public water supply, recharges groundwater, filters stormwater using green**

**infrastructure, improves water quality, protects fisheries, wildlife and plant habitat and provides recreation. These mitigation measures have been designed to offset the impacts of the project in order to reduce the risk of climate change, as projected by the RMAT Tool's output report, (See Attachment H – RMAT REPORT).**

C. Is the project contributing to regional adaptation strategies? _**X**_ Yes __ No; If yes, describe.

**Wilmington is a part of the North Suburban Planning Council (NSPC) sub-region of the Metropolitan Area Planning Council (MAPC). NSPC meets regularly to discuss and work cooperatively on sub-regional issues and opportunities, such as transportation and open space. MetroFuture, MAPC's regional development plan for the Boston Metropolitan Area, includes goals and objectives related to smart growth, preservation of natural landscapes, economic development, general health through 2030 and climate change. The goals related to climate change include that more cities and towns would take actions to mitigate the effects of increasing global temperatures and to prevent damage from natural disasters. The region would put fewer new buildings in harm's way and will make strategic investments to protect vulnerable areas. Well-maintained infrastructure would be more resilient to disasters. In order to achieve these goals all municipalities will have up-to date and fully implanted Pre-Disaster Mitigation plans. As well as the region will have no structurally deficient dams and will have limited new growth in flood zones.**

II. Has the Proponent considered alternative locations for the project in light of climate change risks?
___ Yes _**X**_ No

A. If no, explain why.

**The purpose of the project is to improve the existing infrastructure, reduce traffic back-ups on entering side streets, improve the existing drainage system, provide increased safety for roadway users and construct adequate multimodal accommodations along the length of Route 38 corridor in Wilmington and therefore alternative locations were not considered.**

B. If yes, describe alternatives considered.

III. Is the project located in Land Subject to Coastal Storm Flowage (LSCSF) or Bordering Land Subject to Flooding (BLSF) as defined in the Wetlands Protection Act? __**X**__Yes ____No

If yes, describe how/whether proposed changes to the site's topography (including the addition of fill) will result in changes to floodwater flow paths and/or velocities that could impact adjacent properties or the functioning of the floodplain. General guidance on providing this analysis can be found in the CZM/MassDEP Coastal Wetlands Manual, available here.

**A portion of the project in the vicinity of Maple Meadow Brook is located within a 100-year floodplain with an established elevation of 82.9 feet upstream and 81.5 feet downstream.**

**The proposed work within the BLSF is a result of the redevelopment of the existing paved area currently located within BLSF and activities associated with construction of the sidewalk on the west side of the roadway. The proposed project activities will occur within approximately 6,815 square feet of BLSF area, due to the proposed full-depth roadway reconstruction, minor roadway widening in select areas to accommodate consistent shoulder/bike lanes and construction of new sidewalks, and new drainage outfalls in select locations (see Figure 8A-8F for details). Drainage patterns are being maintained throughout the project area to the extent practicable. The majority of outfalls will be**

**reconstructed adjacent to existing outfall locations. Closed drainage systems will be constructed where new sidewalks will obstruct existing country drainage. All new inlet structures will have deep sumps and hoods. Additional information describing the changes to the drainage systems is included in the Stormwater Report (Attachment D). The project will not result in any increase to the base flood elevation, will not restrict flows so as to cause an increase in flood stages or flow velocities associated with Maple Meadow Brook.**

# ENVIRONMENTAL JUSTICE SECTION

## I. Identifying Characteristics of EJ Populations

A. If an Environmental Justice (EJ) population has been identified as located in whole or in part within 5 miles of the project site, describe the characteristics of each EJ populations as identified in the EJ Maps Viewer (i.e., the census block group identification number and EJ characteristics of "Minority," "Minority and Income," etc.). Provide a breakdown of those EJ populations within 1 mile of the project site, and those within 5 miles of the site.

**There are no Environmental Justice populations located within the project area.**

**There are multiple EJ Populations block groups identified within a 5-mile Designated Geographic Area (DGA) of the project site. However, this project does not exceed any Air threshold at 301 CMR 11.03(8), nor will the project generate 150 or more New adt of diesel vehicle traffic over a duration of 1 year or more, therefore, only 1-mile DGA for public involvement and EJ impact analysis is required (see Attachment F for EJ support documentation).**

**EJ populations in Massachusetts are defined as neighborhoods (i.e. census block groups) that meet at least one of the following criteria:**

- **The annual median household income is not more than 65 percent of the statewide annual median household income;**
- **Minorities (i.e., individuals who identify themselves Latino/Hispanic, Black/African American, Asian, Indigenous people, and people who otherwise identify as non-white) comprise 40 percent or more of the population;**
- **25 percent or more of households lack English language proficiency;**
- **Minorities comprise 25 percent or more of the population and the annual median household income (MHHI) of the municipality in which the neighborhood is located does not exceed 150 percent of the statewide annual median household income; or**
- **A geographic portion of a neighborhood designated by the Secretary as an environmental justice population in accordance with law.**

**The project's DGA includes 5 EJ block groups with minority populations. These are listed in Table 4 below and shown in Figure 6 – Environmental Justice Map.**

**The following EJ Populations were identified within 1 mile of the project site:**

**Table 4: EJ Populations within 1 mile of the Project (see Figure 6):**

| Block Group | Census Tract | EJ Community Type | Total % Minority Population | Median Household Income | % of Households with English Isolation | Languages (At census tract level)* |
|---|---|---|---|---|---|---|
| 1 | 3336.01 | Minority | 42 | $121,924 | 0.0 | Portuguese or Portuguese Creole (5.35%) |
| 3 | 3336.02 | Minority | 28 | $113,409 | 2.0 | Portuguese or Portuguese Creole (5.35%) |
| 4 | 3336.02 | Minority | 30 | $93,345 | 7.0 | Portuguese or Portuguese Creole (5.35%) |
| 4 | 3322.02 | Minority | 26 | $103,788 | 0.0 | - |
| 1 | 3322.02 | Minority | 30 | $118,528 | 9 | - |

**The following EJ populations were identified within 1 mile of the project site:**

- **Block Group 1, Census Tract 3336.01, based on "Minority" criteria, located southeast of the project in Woburn.**
- **Block Group 4, Census Tract 3336.02, based on "Minority" criteria, located south of the project in Woburn.**
- **Block Group 3, Census Tract 3336.02, based on "Minority" criteria, located at the project's southern terminus in Woburn.**
- **Block Group 1, Census Tract 3322.02, based on "Minority" criteria located southwest of the project in Burlington.**
- **Block Group 4, Census Tract 3322.02, based on "Minority" criteria, located southwest of the project in Burlington.**

**These data were obtained from https://www.mass.gov/info-details/massgis-data-2020-us-census-environmental-justice-populations.**

B. Identify all languages identified in the "Languages Spoken in Massachusetts" tab of the EJ Maps Viewer as spoken by 5 percent or more of the EJ population who also identify as not speaking English "very well." The languages should be identified for each census tract located in whole or in part within 1 mile and 5 miles of the project site, regardless of whether such census tract contains any designated EJ populations.

**Within 1 mile of the project area, the languages spoken by 5 percent or more of the EJ population who also identify as not speaking English "very well" are Portuguese or Portuguese Creole (5.4%). Within 5 miles of the project site, the languages spoken also include Chinese (5.6%).**

C. If the list of languages identified under Section I.B. has been modified with approval of the EEA EJ Director, provide a list of approved languages that the project will use to provide public involvement opportunities during the course of MEPA review. If the list has been expanded by the Proponent (without input from the EEA EJ Director), provide a list of the additional languages that will be used to provide public involvement opportunities during the course of MEPA review as required by Part II of the MEPA Public Involvement Protocol for

Environmental Justice Populations (“MEPA EJ Public Involvement Protocol”). If the project is exempt from Part II of the protocol, please specify.

**This list has not been modified.**

## II. Potential Effects on EJ Populations

A. If an EJ population has been identified using the EJ Maps Viewer within 1 mile of the project site, describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

**This project is not likely to have adverse effects on the EJ population in the project area. All impacts to the surrounding environment and public health will be avoided to the maximum extent practicable. There will be no adverse impacts to bus routes during construction due to detours. As a whole, the project will have beneficial impacts to the surrounding community including improved roadway infrastructure, reduced traffic back-ups on entering side streets, and an improved drainage system. The project may also reduce congestion along the roadway and will result in enhanced safety and accessibility of roadway for all roadway users including bicyclists, pedestrians, and vehicles.**

**The proposed project will incorporate improvements to the existing closed drainage system, including headwall and culvert replacement, a new water system along Route 38 from Route 62 to Eames Street. The project also proposes to add bicycle accommodations, improve pedestrian accommodations, and install traffic signal improvements along the Route 38 (Main Street) corridor. The project will upgrade the signage and pavement markings to improve driver safety along the project corridor. New signage and pavement markings also will be provided to enhance safety for bicyclists on the widened roadway. Bicycle access and pedestrian access will be improved along the entire project corridor to and from the MBTA Wilmington commuter rail station and the recently constructed Yentile Farm recreational facility. This roadway upgrade will require full-depth reconstruction of the existing Route 38 pavement from Route 62 to Eames Street.**

**Improvements at the intersection of Route 38 and Route 62 (Burlington Avenue and Church Street) will include re-striping to provide additional turning lanes for the northern, southern, and western legs of the intersection, adding bicycle detection, and reconstructing the traffic signal, as well as a new retaining wall along the MBTA tracks south of this intersection. These improvements will result in less congestion along the corridor, and significantly lower delays and queues at the intersection. The project will also include a traffic signal at the intersection of Route 38 with Cross Street and Butters Row. This signalization will provide more orderly traffic control for vehicles, pedestrians, and bicyclists. The side street approaches at this intersection are proposed to be realigned to provide improved sight distances and geometry. The improvements will add a left turn lane from northbound Route 38 to Butters Row. Realignments of Eames Street and Old Main Street are also proposed to improve safety. In all, these improvements will result in enhanced safety of roadway for all roadway users including bicyclists, pedestrians, and vehicles.**

**Traffic control measures will be implemented throughout the corridor for construction activity. Existing signal timing at intersections will be adjusted to minimize delay as much as possible. Site-specific temporary traffic control setup will be implemented at critical locations where one-way alternating traffic is necessary to provide a safe work zone at the culvert replacement near Dublin Avenue, and other utility relocations within the project limits. Flaggers and police**

**officers are expected to be on-site directing traffic at active work zones. A temporary signal installed from an ongoing MassDOT project (#607327) at the intersection of Eames Street is expected to stay in place to implement any traffic detour as needed.**

**Overall, the project is anticipated to provide benefits to the surrounding EJ populations through increasing safety in the area and reducing traffic back-ups. Furthermore, the numerous project benefits including improved pedestrian and bicycle accessibility, safety, and recreation opportunity are expected to benefit not only the surrounding environmental justice communities, but the surrounding community as a whole.**

**In addition, in order to evaluate the potential impacts of climate change on the project, the EEA's RMAT Tool was used to generate an output report which can be found in Attachment H . As indicated in the report, the primary threats to the project site include extreme precipitation, including urban and riverine flooding, as well as extreme heat. The project aims to mitigate these impacts to the maximum extent practicable through the installation of three infiltration Stormwater Control Measures (SCMs) to capture and treat runoff from the project area as well as through a compensatory flood storage area to help mitigate urban and riverine flooding in the project area. The project has been designed to meet the Stormwater Management Standards to the maximum extent practicable. While the impacts of climate change tend to affect EJ populations more severely than non-EJ populations, the project does not exacerbate such impacts. It is not anticipated that there will be any adverse impacts to EJ and non-EJ populations, and no resulting disproportionate adverse impacts to EJ populations, as a result of this project.**

**The MA DPH EJ Tool was utilized to evaluate other possible sources of pollution that may have impacted or may impact in the EJ populations within the project site and the DGA. Note that the following facilities/infrastructure are all located within the Project Corridor itself: a Superfund site boundary, State Route 38, State Route 62, a MBTA Commuter Rail Line, a MBTA Railroad Track, and Transmission Lines for Energy generation and supply. The Project will not impact or increase the hazards associated with any of these facilities.**

**The various regulated facilities/infrastructure within 1-mile of the project site are listed below:**

- **MassDEP major air and waste facilities – 21**
- **M.G.L. c. 21E sites – 4**
- **"Tier II" toxics use reporting facilities – 26**
- **MassDEP sites with AULs – 11**
- **MassDEP groundwater discharge permits – 1**
- **MassDEP public water suppliers – 1**
- **Wastewater treatment plants – 2**
- **Underground storage tanks – 15**
- **EPA facilities – 34**
- **Road infrastructure – 3 State Routes (Route 129, Route 38 and Route 62), Interstate, 0 US Highway**
- **MBTA bus and rapid transit – 42**
- **Other transportation infrastructure – 14**
- **Regional transit agencies – Lowell Regional Transit Authority (LRTA) & Massport**
- **Energy generation and supply – 2**

**Additionally, the Massachusetts DPH EJ Tool was used in order to assess the potential health vulnerabilities faced by EJ populations within the study area. The various health**

**vulnerabilities of EJ populations provide a basis for identifying and assessing any potential public health consequences that may result from environmental impacts of the project. According to the DPH EJ Tool, there are 0 EJ neighborhoods within the Town of Wilmington, and approximately 0% of the population lives in an EJ neighborhood.**

**The DPH EJ Tool indicates that the Town of Wilmington does not meet the Vulnerable Health EJ criteria for heart attack rate, elevated childhood blood lead prevalence, low birth weight, and childhood asthma. In fact, the Town of Wilmington was found to have statistically significantly lower blood lead levels, and lower childhood asthma rates when compared to statewide levels. The rates for low birth weight and heart attack were found to be not statistically significantly different when compared to statewide levels. Therefore, the proposed Project is not anticipated to affect this health criteria. Additionally, the data show that there are no census tracts within the Town of Wilmington or the project site's DGA that have statistically significant high rates of elevated blood lead prevalence or low birth weights. Both rates are found to be not statistically significantly different when compared to statewide levels. This tool does not provide information on the rates of heart attacks or childhood asthma at the census tract level.**

**A small portion of the project's 1-mile DGA extends into the City of Woburn. The DPH EJ Tool indicates that the City of Woburn does not meet the Vulnerable Health EJ criteria for heart attack rate, elevated childhood blood lead prevalence, low birth weight, and childhood asthma. As a whole, the City of Woburn was found to have statistically significantly lower blood lead levels, and lower childhood asthma rates when compared to statewide levels. The rates for low birth weight and heart attack were found to be not statistically significantly different when compared to statewide levels. Therefore, the proposed Project is not anticipated to affect this health criteria. The results from the Vulnerable Health Criteria data indicate that none of the census tracks in the City of Woburn that are within the 1-mile DGA have statistically significant high rates of elevated blood lead prevalence or low birth weights. Both rates are found to be not statistically significantly different when compared to statewide levels. This tool does not provide information on the rates of heart attacks or childhood asthma at the census tract level.**

**Furthermore, a small portion of the 1-mile DGA also extends into a portion of the Town of Burlington. The DPH EJ Tool indicates that the Town of Burlington does not meet the Vulnerable Health EJ criteria for heart attack rate, elevated childhood blood lead prevalence, and childhood asthma. However, the municipality does meet the Vulnerable Health EJ criteria for low-birth-weight rate.**

**The low-birth-weight rates for the Town of Burlington exceed the 110% threshold for the statewide report. The low-birth-weight rates (Crude Rate per 10,000) respectively for the Town of Burlington and 110% of the statewide rate are reported below.**

**Low Birth Weight Rate (2011-2015):**

- **Town of Burlington: 267**
- **110% Statewide Rate: 239**

**The Town of Burlington was found to have statistically significantly lower rates of childhood asthma rates, and elevated blood lead prevalence when compared to statewide levels. The rates for low birth weight and heart attack were found to be not statistically significantly different when compared to statewide levels. Therefore, the proposed Project is not anticipated to affect this health criteria. The results from the**

**Vulnerable Health Criteria data indicate that none of the census tracks in the Town of Burlington that are within the 1-mile DGA have statistically significant high rates of elevated blood lead prevalence or low birth weights. This tool does not provide information on the rates of heart attacks or childhood asthma at the census tract level.**

**Overall, the analysis of the results of the Vulnerable Health Criteria data for Wilmington, Woburn, and Burlington all indicate that the census tracts within and around the project site are not exhibiting any of the "Vulnerable Health Criteria" as defined in the MEPA EJ Protocol, and therefore are not likely to bear an unfair or inequitable environmental burden or related public health consequences as a result of the project.**

**This project is not likely to have adverse effects on the EJ population in the project area. All impacts to the surrounding environment and public health will be avoided to the maximum extent practicable. The project is expected have a number of benefits to the EJ population in the area, as it will promote economic development, provide reduce traffic congestion in the surrounding area, and improve existing the drainage system.**

B. If an EJ population has been identified using the EJ Maps Viewer within 5 miles of the project site, will the project: (i) meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b) __ Yes _**X**_ No; or (ii) generate150 or more new average daily trips (adt) of diesel vehicle traffic, excluding public transit trips, over a duration of 1 year or more. ___ Yes _**X**__ No

**The Project would not meet or exceed MEPA review thresholds under 301 CMR 11.03(8)(a)-(b) nor would it generate 150 or more new average daily trips of diesel vehicle traffic.**

C. If you answered "Yes" to either question in Section II.B., describe the likely effects of the project (both adverse and beneficial) on the identified EJ population(s).

## III. Public Involvement Activities

A. Provide a description of activities conducted prior to filing to promote public involvement by EJ populations, in accordance with Part II of the MEPA EJ Public Involvement Protocol. In particular:

1. If advance notification was provided under Part II.A., attach a copy of the Environmental Justice Screening Form and provide list of CBOs/tribes contacted (with dates). Copies of email correspondence can be attached in lieu of a separate list.

2. State how CBOs and tribes were informed of ways to request a community meeting, and if any meeting was requested. If public meetings were held, describe any issues of concern that were raised at such meetings, and any steps taken (including modifications to the project design) to address such concerns.

3. If the project is exempt from Part II of the protocol, please specify.

**The project team will continue to hold meetings with state and local agencies as well as the general public and local community as the project progresses. The proponent and the project team will continue to notify the public of project updates and continue advertising legal ads in multiple languages through the process. Additionally, a MEPA site visit that will be made available to the public, with the option to request interpretation services prior to the meeting.**

**Project coordination with the public will continue with information made available on MassDOT Website and on MassDOT Website and on MEPA Website. In addition, the project team has developed a MEPA Fact Sheet with project details, which will be posted on the municipal websites (Wilmington, Woburn and Burlington). A hard copy of both this EENF and the Proposed EIR in English will be available for review in the Town of Wilmington Public Library. The MEPA Fact Sheet will be distributed at the time of the EENF and EIR filing. The Proponent is committed to continue to inform the public about the project and its status during the review of the EENF and EIR and after the review is completed.**

**The following languages have been, and will continue to be, included for translation and interpretations:**

- **English**
- **Portuguese**

**The EJ Screening Form was translated into the languages identified above and distributed to the EJ Reference List and CBOs on January 23, 2025. This includes information on how a community meeting could be requested (see Attachment F). No requests have been received at this time.**

B. Provide below (or attach) a distribution list (if different from the list in Section III.A. above) of CBOs and tribes, or other individuals or entities the Proponent intends to maintain for the notice of the MEPA Site Visit and circulation of other materials and notices during the course of MEPA review.

**Refer to Attachment B for the MEPA Distribution List, which includes the CBOs, tribes, and other contacts identified by MEPA through its EJ Reference List and the Project team's research.**

C. Describe (or submit as a separate document) the Proponent's plan to maintain the same level of community engagement throughout the MEPA review process, as conducted prior to filing.

**The Proponent plans to maintain the same level of community engagement throughout the MEPA review process. The project team will continue to hold meetings with state and local agencies as well as the general public and local community as the project progresses. The proponent will continue to notify the public of project updates with translation in two different languages and continue advertising legal ads in multiple languages through the process. During the EENF comment period, MassDOT will hold a virtual consultation session to present the Project to the MEPA Office, state agencies, and the public. This presentation will also provide the attendees with the opportunity to ask questions about the Project. Notice of the session will be translated in the languages identified above with an opportunity to request interpretation services. Additionally, project coordination with the public will continue with information made available on the city's website as well as through a MEPA site visit that will be made available to the public, with the option to request interpretation services prior to the meeting.**

## CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   (Name) **Wilmington Town Crier** (Date) **the week of 4/21/2025**

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

| | | | |
|---|---|---|---|
| Noah Boland | | | |
| Date | Signature of Responsible Officer or Proponent | Date | Signature of person preparing ENF (if different from above) |
| Noah Boland | | Oxana Fartushnaya | |
| Name (print or type) | | Name (print or type) | |
| Massachusetts Department of Transportation Highway Division | | Green International Affiliates, Inc. | |
| Firm/Agency | | Firm/Agency | |
| 10 Park Plaza, Suite 7360 | | 100 Ames Pond Drive, Suite 200 | |
| Street | | Street | |
| Boston, MA 02116 | | Tewksbury, MA 01876 | |
| Municipality/State/Zip | | Municipality/State/Zip | |
| 860-510-3096 | | 978-923-0400 | |
| Phone | | Phone | |

# LIST OF ANTICIPATED FEDERAL, STATE AND MUNICIPAL PERMITS

| Agency/Department | Permit/Approval | Status |
|---|---|---|
| **Federal** | | |
| Federal Highway Administration (FHWA)/ MassDOT Environmental | National Environmental Policy Act/ Categorical Exclusion | Approved 2/5/2025 |
| MA Historical Commission/ MassDOT CRU | National Historic Preservation Act of 1966/ Chapter 254 Section 106 Review | Completed 10/11/2023 |
| US Fish and Wildlife Service (USFWS)/ MassDOT Wildlife Section | Section 7 Review | Completed 8/9/2024 |
| Federal Highway Administration (FHWA) | National Environmental Policy Act/ De Minimis Determination for Section 4(f) Property | Approved 8/9/2024 |
| U.S. Army Corps of Engineers (ACOE) | Section 404 Clean Water Act ACOE MA General Permit | Filed 4/10/2025 |
| U.S. Environmental Protection Agency (EPA) | The Clean Water Act (CWA) / National Pollutant Discharge Elimination System (NPDES) Construction Activities Permit | Pending |
| **State** | | |
| Executive Office of Energy and Environmental Affairs | Massachusetts Environmental Policy Act EENF/REIR | Filed 4/15/2024 |
| Massachusetts Department of Environmental Protection's (MassDEP) | Section 401 Clean Water Act Minor Dredging and Major Fill/Excavation Water Quality Certification | Filed 4/10/2025 |
| **Town of Wilmington** | | |
| Wilmington Conservation Commission | Massachusetts Wetlands Protection Act Order of Conditions | Filed 3/13/2025 |

## ATTACHMENTS (BOUND SEPARATELY)

Attachment A: Public Notice
Attachment B: MEPA Distribution List
Attachment C: Figures

- Figure 1: USGS Map
- Figure 2: Aerial Map
- Figure 3: Environmental Constraints Map
- Figure 4: FEMA Map
- Figure 5: Soils Map
- Figure 6: Environmental Justice Map

Attachment D: Stormwater Management Report
Attachment E: Historic Resources Supporting Documentation
Attachment F: Environmental Justice Supporting Documentation
Attachment G: Hydraulic Memo
Attachment H: RMAT Climate Resilience Design Standards Tool (the “RMAT Tool”) Report
Attachment I: Wetland Summary Report
Attachment J: MEPA Submission Plan Set

DOCUMENT A00831

# ARMY CORPS OF ENGINEERS

# PERMIT

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Regulatory Division
Transportation & Utility Section
File Number: NAE-2025-00171

Erica Larner
MassDOT - Highway Division
10 Park Plaza
Boston, Massachusetts 02116
Via Email: erica.n.larner@dot.state.ma.us

Dear Ms. Larner:

This letter is in response to the application you submitted to the U.S. Army Corps of Engineers (USACE), New England District, on April 11, 2025, for a Department of the Army general permit verification. We have assigned this project file number NAE-2025-00171, which you should reference in all correspondence with this office.

A review of the information provided indicates the proposed work includes the permanent discharge of fill material within 2,195 square feet below the Ordinary High Water (OHW) marks of Maple Meadow Brook and an unnamed intermittent stream, and within 2,630 square feet of wetlands, associated with the reconstruction of 2.1 miles of Route 38 (Main Street), at Latitude 42.537600º and Longitude -71.160690º, in Wilmington, Middlesex County, Massachusetts. The work includes the addition of bike lanes and sidewalks, stormwater improvements, and the replacement of two crossings. The existing single-span bridge conveying the road over Maple Meadow Brook will be replaced with a new single-span bridge. The streambed below the bridge will be reconstructed with rip-rap overtopped with stockpiled natural streambed material. The existing 3.5'W x 1.5'H culvert conveying the road over an unnamed intermittent stream will be replaced with a new 4'W x 3'H culvert embedded with 1' of natural material, with rip-rap scour protection overtopped with natural material at the inlet and outlet. The project also includes temporary impacts within 601 square feet below OHW, and within 2,834 square feet of wetlands, for temporary construction access and dewatering. The work is shown on the enclosed plans titled “MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION PLAN AND PROFILE OF ROUTE 38 (MAIN STREET) W-38-003 (C99), W-38-011 (802), W-38-002 (2NQ) IN THE TOWN OF WILMINGTON MIDDLESEX COUNTY,” on 27 sheets, and dated Revised 4/23/2025 (sheets 10-12 dated 5/22/2025).

Based on the information you have provided, we verify that the activity is authorized under General Permit 23 of the June 2, 2023, federal permit known as the Massachusetts General Permits (GPs). If the extent of the project area and/or nature of

the authorized impacts to waters are modified, a revised application must be submitted to this office for written approval before work is initiated. You can find a copy of these permits at: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/.

Any deviation from the terms and conditions of the permit, or your submitted plans, may subject the permittee to the enforcement provisions of our regulations. Therefore, in the event changes to this project are contemplated, it is recommended you coordinate with this office prior to proceeding with the work. This office must approve any changes before you undertake them. You must perform this work in compliance with the terms and conditions of the GPs listed above, and also in compliance with the following special conditions:

**Project Specific Special Conditions:**

1. The permittee shall complete and return the enclosed Work-Start Notification Form to this office at least two weeks prior to the anticipated construction start date.

2. The permittee shall complete and return the enclosed Completion Certification Form to this office at least one month following the completion of the authorized work.

3. All construction shall be completed in accordance with the limits of construction and construction sequences detailed on the enclosed plan drawings, titled "MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION PLAN AND PROFILE OF ROUTE 38 (MAIN STREET) W-38-003 (C99), W-38-011 (802), W-38-002 (2NQ) IN THE TOWN OF WILMINGTON MIDDLESEX COUNTY," on 27 sheets, and dated Revised 4/23/2025 (sheets 10-12 dated 5/22/2025). If you change the plans or construction methods for work within or adjacent to Maple Meadow Brook or the unnamed stream, please contact us immediately to discuss modification of this authorization. USACE must approve any changes before you undertake them.

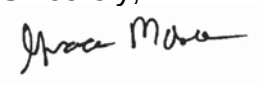
4. A conditioned Water Quality Certification (WQC) has been issued by the Massachusetts Department of Environmental Protection for your project and is attached. You must comply with the conditions specified in the WQC.

This verification is valid until June 1, 2028. You must commence or be under contract to commence the work authorized herein by June 1, 2028 and complete the work by June 1, 2029. If not, you must contact this office to determine the need for further authorization before beginning or continuing the activity. It is recommended that you contact this office before this authorization expires to discuss if permit reissuance is a possibility.

This GP verification and any associated authorizations does not preclude the necessity to obtain any other federal, state, or local permits, licenses, and/or certifications, which may be required.

If you have any questions related to this verification or have issues accessing documents referenced in this letter, please contact Dan Vasconcelos, Project Manager, at 978-318-8653, or by email at daniel.b.vasconcelos@usace.army.mil. This agency continually strives to improve our customer service. To better serve you, please complete the Customer Service Survey located at: https://regulatory.ops.usace.army.mil/customer-service-survey/.

Sincerely,



Grace Moses
Chief, Technical Support Branch
Regulatory Division

Enclosures

cc (w/enclosures):
Kevin Thompson, MassDOT (via kevin.s.thompson@dot.state.ma.us)
Heidi Davis, MassDEP (via heidi.davis@mass.gov)
Ryan Hale, MassDEP (via ryan.hale@mass.gov)
Wilmington Conservation Commission (via clynch@wilmingtonma.gov)

# Work-Start Notification Form

**File Number: NAE-2025-00171** **State: Massachusetts** **County: Middlesex**

**Permittee: MassDOT - Highway Division, Erica Larner**
**Date Verification Issued: 8/27/2025**
**Project Manager: Dan Vasconcelos**

At least two weeks prior to commencing the activity authorized by this permit, sign this certification and return it to the following address:

**US ARMY CORPS OF ENGINEERS**
**New England District**
**Attn: Dan Vasconcelos**
**696 Virginia Road**
**Concord, MA 01742**
**or**
**daniel.b.vasconcelos@usace.army.mil**
**978-318-8653**

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers (USACE) representative. Failure to comply with any terms or conditions of this authorization may result in the USACE suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

**The people (e.g. contractor) listed below will do the work, and they understand the permit's conditions and limitations.**

**Contractor Name/Contractor Firm:** _____
**Business Address:** _____
_____
**Contractor Phone and Email:** _____

**Proposed Construction Dates:** **Start:** _____ **Finish:** _____

_____ _____
**Signature of Permittee** **Date**

U.S. Army Corps of Engineers (USACE)

## CERTIFICATION OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

For use of this form, see Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research, and Sanctuaries Act; the proponent agency is CECW-COR.

***Form Approved - OMB No. 0710-0003 Expires 2027-10-31***

**The Agency Disclosure Notice (ADN)**

The Public reporting burden for this collection of information, 0710-0003, is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

**PURPOSE**: This form is used by recipients of U.S. Army Corps of Engineer Regulatory permits to certify compliance with the permit terms and conditions.

Your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit, you are subject to permit suspension, modification, or revocation.

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the U.S. Army Corps of Engineers, New England District, Regulatory Office.

The certification can be submitted by email at daniel.b.vasconcelos@usace.army.mil or by mail at the below address:

U.S. Army Corps of Engineers
New England District Office
Street Address: 696 Virginia Road
City: Concord State: MA Zip Code: 01742

**COMPLETED BY THE CORPS**

Corps Action Number: NAE-2025-00171

Permit Type: General Permit

General Permit Number and Name (*if applicable*): 23 (Linear Transportation Projects)

Name of Permittee: Erica Larner

Project Name: Route 38 Reconstruction

Project Location (*physical address*): Route 38 (Main Street)
Wilmington, Massachusetts

**PERMITTEE'S CERTIFICATION**

Date Work Started: _____

Date Work Completed: _____

Enclose photographs showing the completed project (*if available*).

I _____ hereby certify that the work authorized by the above referenced permit has been completed in accordance with all of the permit terms and conditions, and that any required compensatory mitigation has been completed in accordance with the permit conditions.

| Name | Date | Signature |
|---|---|---|
| | | |

# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
# HIGHWAY DIVISION

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 1 | 391 |
| PROJECT FILE NO. | 608051 | | |

**TITLE SHEET & INDEX**

PLAN AND PROFILE OF

## ROUTE 38 (MAIN STREET)

W-38-003 (C99), W-38-011 (802), W-38-002 (2NQ)

IN THE TOWN OF

## WILMINGTON

## MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. -

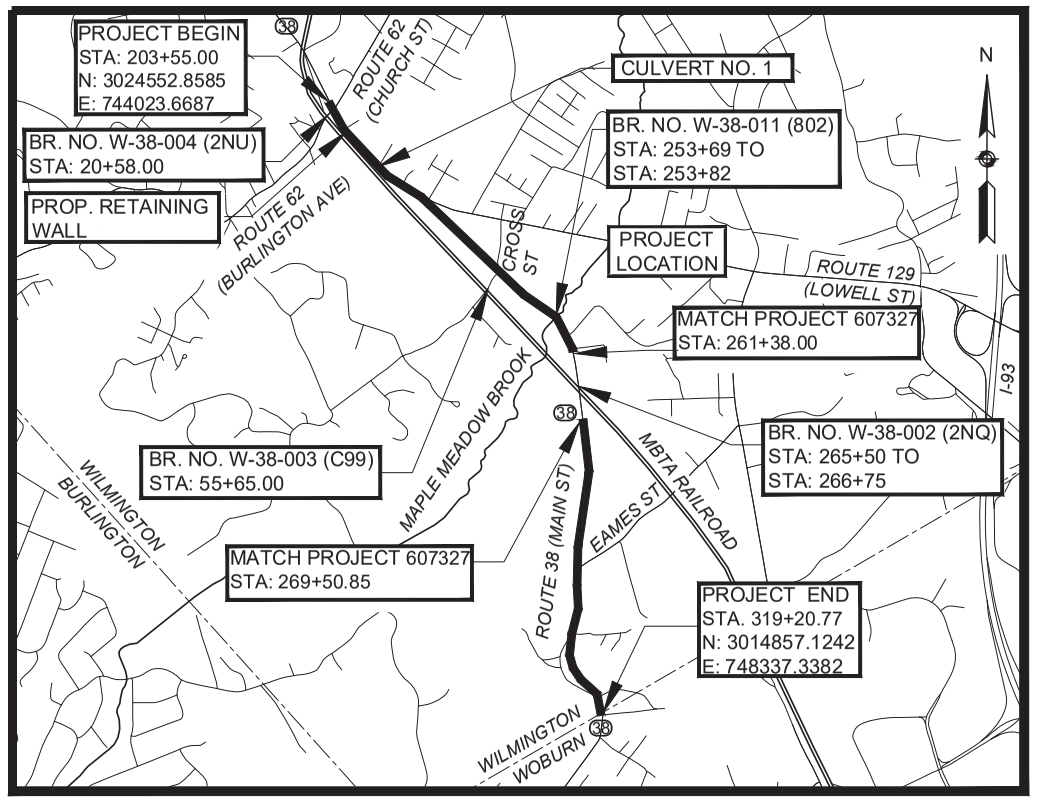
# 100% SUBMITTAL

THESE PLANS ARE SUPPLEMENTED BY THE 2024 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

**ACOE PLAN SET**
**04/10/2025**
**REVISED 04/23/2025**

INDEX


| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET & INDEX |
| 2 | LEGEND & ABBREVIATIONS |
| 3 | GENERAL NOTES |
| 4 | KEY PLAN |
| ~~5~~ | ~~BORING LOCATION PLAN~~ |
| ~~6 – 8~~ | ~~BORING LOGS~~ |
| 15 - 19 | TYPICAL SECTIONS |
| N/A | IMPACT PLANS 1-3 |
| ~~20 – 40~~ | ~~CONSTRUCTION PLANS~~ |
| ~~41 – 64~~ | ~~CONSTRUCTION PROFILES~~ |
| ~~65 – 85~~ | ~~CURB TIE & GRADING PLANS~~ |
| ~~86 – 93~~ | ~~BASELINE TIES & SKETCHES PLANS~~ |
| ~~94 – 114~~ | ~~DRAINAGE PLANS~~ |
| ~~115 – 135~~ | ~~UTILITY PLANS~~ |
| 136 - 143 | DRAINAGE & UTILITY DETAILS (SELECTED SHEETS) |
| ~~144 – 165~~ | ~~PAVEMENT MARKING AND SIGNS PLANS~~ |
| ~~166 – 170~~ | ~~SIGN SUMMARY~~ |
| ~~171~~ | ~~PAVEMENT MARKING DETAILS~~ |
| ~~172 – 181~~ | ~~TRAFFIC SIGNAL PLANS~~ |
| ~~182 – 206~~ | ~~TEMPORARY TRAFFIC CONTROL PLANS~~ |
| ~~207 – 211~~ | ~~PEDESTRIAN CURB RAMP & DRIVEWAY DETAILS~~ |
| 212 - 217 | LANDSCAPING PLANS 2-6 (SELECTED SHEETS) |
| 218 | WETLAND REPLICATION PLAN |
| 219 | ~~COMPENSATORY FLOOD STORAGE PLAN~~ |
| ~~220~~ | ~~INFILTRATION BASIN PLAN~~ |
| 221 - 224 | CONSTRUCTION & LANDSCAPE DETAILS (SELECTED SHEETS) |
| ~~225 – 227~~ | ~~RETAINING WALL PLANS~~ |
| 228 - 231 | CULVERT PLANS |
| ~~232 – 385~~ | CROSS SECTIONS |
| N/A | BRIDGE PLANS (SELECTED SHEETS) |


LENGTH OF PROJECT = 10850.00 FEET = 2.055 MILES

## DESIGN DESIGNATION - (ROUTE 38/MAIN STREET)

DESIGN SPEED
40 MPH - PROJECT BEGIN TO STA. 236+60
45 MPH - STA. 236+60 TO 300+00
30 MPH - STA. 300+00 TO PROJECT END

| | 800 FEET NORTH OF LOWELL STREET | 700 FEET SOUTH OF CROSS STREET | 450 FEET SOUTH OF EAMES STREET |
|---|---|---|---|
| ADT (2016) | 21,383 | 12,490 | 14,954 |
| ADT (2036) | 26091 | 15240 | 18247 |
| K | 7.5 | 9.1 | 9.0 |
| D | 72.9% | 78 | 67.9% |
| T (PEAK HOUR) | 6.0% | 9.2% | 4.1% |
| T (AVERAGE DAY) | 6.2 | 10.1% | 8.0% |
| DHV | 1957 | 1387 | 1642 |
| DDHV | 1427 | 1090 | 1115 |
| FUNCTIONAL CLASSIFICATION | URBAN PRINCIPAL ARTERIAL | URBAN PRINCIPAL ARTERIAL | URBAN PRINCIPAL ARTERIAL |

PLANS ARE FOR PERMIT SUBMISSION ONLY AND NOT FOR CONSTRUCTION

| DATE | DESCRIPTION | REV # |
|---|---|---|
| 5/XX/2024 | PS&E SUBMISSION | 0 |
| 1/19/2024 | 100% SUBMISSION | 0 |
| 1/15/2021 | 75% SUBMISSION | 0 |
| 10/25/2017 | 25% SUBMISSION | 0 |

massDOT Massachusetts Department of Transportation Highway Division

**APPROVED**

CHIEF ENGINEER _____ DATE _____

PREPARED BY:

Green International Affiliates, Inc.
Civil and Structural Engineers



608051_HD01(TITLE).DWG Plotted on 12-Mar-2025 2:26 PM
Proposal No. 608051 - 132406
A0083138

# GENERAL SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| JB | JB | JERSEY BARRIER |
| CB | CB | CATCH BASIN |
| | | CATCH BASIN CURB INLET |
| FP | FP | FLAG POLE |
| GP | GP | GAS PUMP |
| MB | MB | MAIL BOX |
| | | POST SQUARE |
| | | POST CIRCULAR |
| WELL | WELL | WELL |
| EHH | EHH | ELECTRIC HANDHOLE |
| | | FENCE GUARD POST |
| GG | GG | GAS GATE |
| BHL # | BHL # | BORING HOLE |
| MW # | MW # | MONITORING WELL |
| TP # | TP # | TEST PIT |
| | | HYDRANT |
| | | LIGHT POLE |
| CO.BD. | | COUNTY BOUND |
| | | GPS POINT |
| C | C | CABLE MANHOLE |
| D | D | DRAINAGE MANHOLE |
| E | E | ELECTRIC MANHOLE |
| G | G | GAS MANHOLE |
| M | M | MISC MANHOLE |
| S | S | SEWER MANHOLE |
| T | T | TELEPHONE MANHOLE |
| W | W | WATER MANHOLE |
| MHB | MHB | MASSACHUSETTS HIGHWAY BOUND |
| MON | | MONUMENT |
| SB | | STONE BOUND |
| TB | | TOWN OR CITY BOUND |
| | | TRAVERSE OR TRIANGULATION STATION |
| TPL or GUY | TPL or GUY | TROLLEY POLE OR GUY POLE |
| HTP | | TRANSMISSION POLE |
| UFB | UFB | UTILITY POLE W/ FIREBOX |
| UPDL | UPDL | UTILITY POLE WITH DOUBLE LIGHT |
| ULT | ULT | UTILITY POLE W / 1 LIGHT |
| UPL | UPL | UTILITY POLE |
| | | BUSH |
| SIZE & TYPE | | TREE |
| | | STUMP |
| | | SWAMP / MARSH |
| WG | WG | WATER GATE |
| PM | PM | PARKING METER |
| | | OVERHEAD CABLE/WIRE |
| | | CURBING |
| 100 99 | | CONTOURS (ON-THE-GROUND SURVEY DATA) |
| 100 99 | | CONTOURS (PHOTOGRAMMETRIC DATA) |
| | | UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | BALANCED STONE WALL |
| | | GUARD RAIL - STEEL POSTS |
| | | GUARD RAIL - WOOD POSTS |
| | | CHAIN LINK OR METAL FENCE |
| | | WOOD FENCE |
| | | TREE LINE |
| | | SAWCUT LINE |
| | | TOP OR BOTTOM OF SLOPE |
| | | LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY |
| | | BANK OF RIVER OR STREAM |
| | | BORDER OF WETLAND |
| | | 100 YEAR FLOOD PLAIN |
| | | 100 FT WETLAND BUFFER |
| | | 200 FT RIVERFRONT BUFFER |
| | | 50 FT NO BUILD |
| | | 15 FT NO DISTURB |
| | | STATE HIGHWAY LAYOUT |
| | | TOWN OR CITY LAYOUT |
| | | COUNTY LAYOUT |
| | | RAILROAD SIDELINE |
| | | TOWN OR CITY BOUNDARY LINE |
| | | PROPERTY LINE OR APPROXIMATE PROPERTY LINE |
| | | EASEMENT |
| | | CONC RETAINING WALL |
| | | SEDIMENT CONTROL BARRIER |
| | | COIR LOG |
| | | FLOATING SILT FENCE |
| | | STONE FOR PIPE ENDS |
| | | MODIFIED ROCK FILL |

# TRAFFIC SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| 1 | 1 | CONTROLLER PHASE ACTUATED |
| | | TRAFFIC SIGNAL HEAD (SIZE AS NOTED) |
| | | VIDEO DETECTION CAMERA |
| | | MICROWAVE DETECTOR |
| | | PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE |
| | * | EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT |
| | | VEHICULAR SIGNAL HEAD |
| | | VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED |
| | | FLASHING BEACON |
| | | PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED) |
| RRSG | RRSG | RAILROAD SIGNAL |
| OR | | SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED) |
| | 20' | MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED) |
| | | HIGH MAST POLE OR TOWER |
| | | SIGN AND POST |
| | | SIGN AND POST (2 POSTS) |
| | 20' | MAST ARM WITH LUMINAIRE |
| | | OPTICAL PRE-EMPTION DETECTOR |
| | | CONTROL CABINET, GROUND MOUNTED |
| | | CONTROL CABINET, POLE MOUNTED |
| | | FLASHING BEACON CONTROL AND METER PEDESTAL |
| | | LOAD CENTER ASSEMBLY |
| | | PULL BOX 12"x12" (OR AS NOTED) |
| | | ELECTRIC HANDHOLE 12"x24" (OR AS NOTED) |
| | | TRAFFIC SIGNAL CONDUIT |
| | | VIDEO VEHICLE DETECTION ZONE |
| | | VIDEO BICYCLE DETECTION ZONE |
| | | WIRE LOOP DETECTOR WITH BICYCLE DETECTION (6' x 23' TYP UNLESS OTHERWISE SPECIFIED) |

# PAVEMENT MARKINGS SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| ONLY | ONLY | PAVEMENT ARROW - WHITE |
| | ONLY | LEGEND "ONLY" - WHITE |
| | SL | STOP LINE |
| | CW | CROSSWALK |
| | SWL | 6" SOLID WHITE LINE |
| | SYL | 6" SOLID YELLOW LINE |
| | BWL | 6" BROKEN WHITE LINE (10' LINE SEGMENT, 30' GAP) |
| | BYL | 6" BROKEN YELLOW LINE (10' LINE SEGMENT, 30' GAP) |
| | DWL | 6" DOTTED WHITE LINE (3' LINE SEGMENT, 9' GAP) |
| | DYL | 6" DOTTED YELLOW LINE (3' LINE SEGMENT, 9' GAP) |
| | DWLEx | 6" DOTTED WHITE LINE EXTENSION (2' LINE SEGMENT, 6' GAP) |
| | DYLEx | 6" DOTTED YELLOW LINE EXTENSION (2' LINE SEGMENT, 6' GAP) |
| | DBWL | 6" DOUBLE WHITE LINE |
| | DBYL | 6" DOUBLE YELLOW LINE |
| | RWT | RECESSED ALL-WEATHER THERMOPLASTIC |

# ABBREVIATIONS

## GENERAL

| | |
|---|---|
| AADT | ANNUAL AVERAGE DAILY TRAFFIC |
| ABAN | ABANDON |
| ADJ | ADJUST |
| APPROX. | APPROXIMATE |
| A.C. | ASPHALT CONCRETE |
| ACCM PIPE | ASPHALT COATED CORRUGATED METAL PIPE |
| BIT. | BITUMINOUS |
| BC | BOTTOM OF CURB |
| BD. | BOUND |
| BL | BASELINE |
| BLDG | BUILDING |
| BM | BENCHMARK |
| BO | BY OTHERS |
| BOS | BOTTOM OF SLOPE |
| BR. | BRIDGE |
| CB | CATCH BASIN |
| CB W/F&C | CATCH BASIN WITH FRAME AND COVER |
| CBCI | CATCH BASIN WITH CURB INLET |
| CC | CEMENT CONCRETE |
| CCM | CEMENT CONCRETE MASONRY |
| CEM | CEMENT |
| CI | CURB INLET |
| CIP | CAST IRON PIPE |
| CLF | CHAIN LINK FENCE |
| CL | CENTERLINE |
| CMP | CORRUGATED METAL PIPE |
| CSP | CORRUGATED STEEL PIPE |
| CO. | COUNTY |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| CONST | CONSTRUCTION |
| CR GR | CROWN GRADE |
| CTE | CONNECT TO EXISTING |
| DHV | DESIGN HOURLY VOLUME |
| DI | DROP INLET |
| DIA | DIAMETER |
| DIP | DUCTILE IRON PIPE |
| DW | STEADY DON'T WALK - PORTLAND ORANGE |
| DWY | DRIVEWAY |
| ECC | ECCENTRIC |
| ELEV (or EL.) | ELEVATION |
| EMB | EMBANKMENT |
| EOP | EDGE OF PAVEMENT |
| EXIST (or EX) | EXISTING |
| EXC | EXCAVATION |
| F&C | FRAME AND COVER |
| F&G | FRAME AND GRATE |
| FDN. | FOUNDATION |
| FLDSTN | FIELDSTONE |
| GAR | GARAGE |
| GD | GROUND |
| GG | GAS GATE |
| GI | GUTTER INLET |
| GIP | GALVANIZED IRON PIPE |
| GRAN | GRANITE |
| GRAV | GRAVEL |
| GRD | GUARD |
| HDW | HEADWALL |
| HMA | HOT MIX ASPHALT |
| HOR | HORIZONTAL |
| HYD | HYDRANT |
| INV | INVERT |
| JCT | JUNCTION |
| L | LENGTH OF CURVE |
| LB | LEACH BASIN |
| LP | LIGHT POLE |
| LSA | LANDSCAPED AREA |
| LT | LEFT |
| MAX | MAXIMUM |
| MB | MAILBOX |
| MH | MANHOLE |
| MHB | MASSACHUSETTS HIGHWAY BOUND |
| MIN | MINIMUM |
| NG | NATIONAL GRID |
| NIC | NOT IN CONTRACT |
| NO. | NUMBER |
| PC | POINT OF CURVATURE |
| PCC | POINT OF COMPOUND CURVATURE |
| PCR | PEDESTRIAN CURB RAMP |
| P.G.L. | PROFILE GRADE LINE |
| PI | POINT OF INTERSECTION |
| POC | POINT ON CURVE |
| POT | POINT ON TANGENT |
| PRC | POINT OF REVERSE CURVATURE |
| PROJ | PROJECT |
| PROP | PROPOSED |
| PSB | PLANTABLE SOIL BORROW |
| PT | POINT OF TANGENCY |

# ABBREVIATIONS (cont.)

## GENERAL

| | |
|---|---|
| PVC | POINT OF VERTICAL CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENCY |
| PVMT | PAVEMENT |
| PWW | PAVED WATER WAY |
| R | RADIUS OF CURVATURE |
| R&D | REMOVE AND DISPOSE |
| R&R UP | REMOVE AND REPLACE UTILITY POLE |
| R&R | REMOVE AND RESET |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROAD |
| RDWY | ROADWAY |
| REM | REMOVE |
| RET | RETAIN |
| RET WALL | RETAINING WALL |
| RMD | REMODEL |
| ROW | RIGHT OF WAY |
| RR | RAILROAD |
| R&R | REMOVE AND RESET |
| R&S | REMOVE AND STACK |
| RT | RIGHT |
| SB | STONE BOUND |
| SHLD | SHOULDER |
| SMH | SEWER MANHOLE |
| ST | STREET |
| STA | STATION |
| SSD | STOPPING SIGHT DISTANCE |
| SHLO | STATE HIGHWAY LAYOUT LINE |
| SW | SIDEWALK |
| T | TANGENT DISTANCE OF CURVE/TRUCK % |
| TAN | TANGENT |
| TEMP | TEMPORARY |
| TC | TOP OF CURB |
| TOS | TOP OF SLOPE |
| TYP | TYPICAL |
| UP | UTILITY POLE |
| VAR | VARIES |
| VERT | VERTICAL |
| VC | VERTICAL CURVE |
| VP | VENT PIPE |
| VZ | VERIZON |
| WG | WATER GATE |
| WIP | WROUGHT IRON PIPE |
| WM | WATER METER/WATER MAIN |
| X-SECT | CROSS SECTION |

## TRAFFIC SIGNAL

| | |
|---|---|
| CAB. | CABINET |
| CCVE | CLOSED CIRCUIT VIDEO EQUIPMENT |
| DW | STEADY DON'T WALK |
| FDW | FLASHING DON'T WALK |
| FR | FLASHING CIRCULAR RED |
| FRL | FLASHING RED LEFT ARROW |
| FRR | FLASHING RED RIGHT ARROW |
| FY | FLASHING CIRCULAR AMBER |
| FYL | FLASHING AMBER LEFT ARROW |
| FYR | FLASHING AMBER RIGHT ARROW |
| G | STEADY CIRCULAR GREEN |
| GL | STEADY GREEN LEFT ARROW |
| GR | STEADY GREEN RIGHT ARROW |
| GSL | STEADY GREEN SLASH LEFT ARROW |
| GSR | STEADY GREEN SLASH RIGHT ARROW |
| GV | STEADY GREEN VERTICAL ARROW |
| OL | OVERLAP |
| PED | PEDESTRIAN |
| PTZ | PAN, TILE, ZOOM |
| R | STEADY CIRCULAR RED |
| RL | STEADY RED LEFT ARROW |
| RR | STEADY RED RIGHT ARROW |
| TR SIG | TRAFFIC SIGNAL |
| TSC | TRAFFIC SIGNAL CONDUIT |
| W | STEADY WALK |
| Y | STEADY CIRCULAR AMBER |
| YL | STEADY AMBER LEFT ARROW |

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 2 | 391 |
| PROJECT FILE NO. | 608051 | | |

**LEGEND & ABBREVIATIONS**

A000211 6

ACOE PLANS SHEET 2 OF 27

608051_HD02(LEGEND).DWG Plotted on 12-Mar-2025 2:26 PM

Proposal No. 608051 - 132406

## GENERAL NOTES

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES AND PROCEDURES; AND FOR SAFETY PRECAUTIONS AND PROGRAMS REQUIRED FOR THE WORK UNDER THIS CONTRACT. THE CONTRACTOR SHALL COMPLY WITH OSHA REQUIREMENTS.
2. ALL TREE REMOVALS AND TREE TRIMMING SHALL BE APPROVED BY THE RESIDENT ENGINEER. ANY TREES IMPACTED BY PROPOSED WORK, THAT ARE NOT MARKED TO BE REMOVED ON THE PLAN SHALL BE EVALUATED BY A MASSACHUSETTS CERTIFIED ARBORIST. ALL TREE TRIMMING SHALL BE OVERSEEN BY A MASSACHUSETTS CERTIFIED ARBORIST.
3. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
4. MINIMUM CLEAR PATH ON THE SIDEWALK SHALL BE 3'-0" EXCLUDING THE SURFACE OF THE CURB. THE CONTRACTOR SHALL MAINTAIN AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE AROUND ALL EXISTING UTILITY POLES AND RELOCATED MAILBOXES.
5. CURB RAMPS SHALL CONFORM TO THE LATEST ADA/AAB STANDARDS.
6. TRANSITION CURB AT PROJECT LIMITS TO MATCH EXISTING ELEVATIONS (PAVEMENT OR EXISTING CURB). WITHIN ABUTTING PROPERTIES, UNLESS NOTED OTHERWISE. WHEN RETAINING THESE ITEMS IS NOT PRACTICAL IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL REMOVE, STOCKPILE, PROTECT AND RESET THE ITEMS. THE CONTRACTOR SHALL REPLACE ITEMS DAMAGED DURING REMOVAL, STOCKPILING, OR RESETTING DUE TO NEGLIGENCE, CARELESSNESS, OR MISHANDLING WITH EQUIVALENT NEW ITEMS AT NO COST TO THE OWNER.
7. ALL TREES CALLED OUT TO BE RETAINED ON THE CONSTRUCTION PLANS SHALL HAVE TREE PROTECTION - INDIVIDUAL AND TREE PROTECTION - TEMPORARY FENCE.
8. THE CONCRETE SLAB OF BRIDGE NO. W-38-011 (802) SHALL BE RETAINED DURING THE CONSTRUCTION OF THE PROJECT. THE DEPTH OF THE PROPOSED ROADWAY SUBBASE SHALL VARY IN DEPTH ACROSS THE BRIDGE.
9. ROCKS AND BOULDERS IDENTIFIED R&R ON THE PLANS SHALL BE REMOVED DURING CONSTRUCTION AND RESET AS DIRECTED PER THE ENGINEER.
10. MILLED LONGITUDINAL RUMBLE STRIP SHALL BE INSTALLED ACCORDING TO ENGINEERING DIRECTIVE E20-007.
11. THE CONTRACTOR SHALL FIELD VERIFY ALL MAILBOXES ARE INSTALLED PER MASSDOT STANDARD DETAIL E 504.1.0, AND MEETS ADA REQUIREMENTS.

## SURVEY NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASE MAP ARE THE RESULT OF AN ON THE GROUND INSTRUMENT SURVEY PERFORMED BETWEEN OCTOBER 11, 2016 AND DECEMBER 7, 2016 BY GREEN INTERNATIONAL AFFILIATES, INC. (GREEN). SEE FIELD NOTES IN MASSDOT DISTRICT 4 FIELD BOOK 41142.
2. HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED BY GREEN ON OCTOBER 28, 2016 WITH STATIC GPS VECTORS CALCULATED BY NATIONAL GEODETIC SURVEY'S OPUS SERVICE, IN MASSDOT DISTRICT 4 FIELD BOOK 41142, PAGE 84. HORIZONTAL DATUM IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD83 (2011) EPOCH 2010.0000, VERTICAL DATUM IS NAVD 88 (COMPUTED USING GEOID12B) USING THE FOLLOWING CONTROL POINTS:

| POINT | GRID NORTHING | GRID EASTING | ELEVATION | COMBINED GROUND TO GRID SCALE FACTOR |
|---|---|---|---|---|
| 2-MDHL | 3024249.8723 | 744113.8185 | 108.896 | 0.99998182 |
| 28-MMAG | 3014918.9153 | 748357.2529 | 91.352 | 0.99998006 |

THE UNIT OF MEASUREMENTS IS US FEET. THE PROJECT COMBINED SCALE FACTOR IS 0.99998094.

3. THE RIGHT OF WAY LINES SHOWN ON THIS BASE MAP ARE THE DIRECT RESULT OF AN INSTRUMENT SURVEY PERFORMED ON THE GROUND BY GREEN, WITH A TRAVERSE CLOSURE OF 1 IN 92,559 AND FROM PLANS AND DEEDS OF RECORD. PRIVATE PROPERTY LINES HAVE NOT BEEN SURVEYED, THEY ARE COMPILED FROM GIS & RECORD PLAN INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE. THE SAID PARCELS SHOWN HEREON ARE SUBJECT TO RIGHTS AND EASEMENTS AS CONTAINED IN THE VARIOUS DEEDS OF RECORD DESCRIBING SAID PREMISES. THE LOCATIONS AND EXTENT OF SAID RIGHTS AND EASEMENTS ARE NOT SUBJECT TO THE SURVEY.
4. WETLANDS WERE DELINEATED AND FIELD LOCATED BY GREEN IN NOVEMBER, 2016.

## EROSION AND SEDIMENT CONTROL NOTES

1. ALL EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBANCE / EARTHWORK ACTIVITIES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR, REPLACEMENT AND MAINTENANCE OF ALL SEDIMENTATION / EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED.

## UTILITY NOTES

1. ALL UNDERGROUND UTILITIES AS SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION.
2. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. IN ADDITION, ANY UTILITIES NORMALLY LOCATED IN THE STREETS AND NOT SHOWN ON THESE PLANS SHALL BE ANTICIPATED BY THE CONTRACTOR IN ALL HIS OPERATIONS.
3. SUBSURFACE UTILITY LOCATIONS HAVE BEEN PLOTTED TO MEET UTILITY QUALITY LEVEL "C" AS DESCRIBED IN ASCE STANDARD 38-02 AND SUMMARIZED BELOW. THE UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS BASED ON ABOVE-GROUND FIELD OBSERVATION AND EXISTING RECORD INFORMATION RECEIVED FROM UTILITY STAKE-HOLDERS.

   SUMMARY OF UTILITY MAPPING QUALITY LEVELS:

   THE FOLLOWING IS A SUMMARY OF THE SURVEY MAPPING LEVELS FOR UTILITIES AS DESCRIBED IN ASCE STANDARD 38-02, "STANDARD GUIDELINE FOR THE DEPICTION OF EXISTING SUBSURFACE UTILITY DATA". THESE GUIDELINES ARE MORE FULLY DESCRIBED IN THE ASCE STANDARD.

   - UTILITY QUALITY LEVEL A:
     PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT IS TYPICALLY USED TO MINIMIZE THE POTENTIAL FOR UTILITY DAMAGE. A PRECISE HORIZONTAL AND VERTICAL LOCATION, AS WELL AS OTHER UTILITY ATTRIBUTES, IS SHOWN ON PLAN DOCUMENTS. ACCURACY IS TYPICALLY SET TO 15-MM VERTICAL AND TO APPLICABLE HORIZONTAL SURVEY AND MAPPING ACCURACY AS DEFINED OR EXPECTED BY THE PROJECT OWNER.
   - UTILITY QUALITY LEVEL B:
     INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT AND REDUCED ONTO PLAN DOCUMENTS.
   - UTILITY QUALITY LEVEL C:
     INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.
   - UTILITY QUALITY LEVEL D:
     INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS) PRIOR TO EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL "DIG SAFE" (1-888-344-7233) 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS. MUNICIPALITIES, THE STATE AND THE MBTA ARE NOT MEMBERS OF DIG-SAFE AND SHALL BE CONTACTED INDIVIDUALLY BY THE CONTRACTOR.
6. THE EXISTING INVERTS ARE SHOWN FOR BIDDING PURPOSES ONLY. ACTUAL INVERT ELEVATIONS SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING STRUCTURES.
7. THE CONTRACTOR SHALL INVESTIGATE ALL UNKNOWN MANHOLES TO DETERMINE OWNERSHIP AND CONTACT THE APPROPRIATE UTILITY AGENCIES TO COORDINATE WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY MANHOLES DETERMINED TO BE PART OF SEWER, DRAIN OR WATER SYSTEMS.
8. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
9. THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN EXCAVATING NEAR AND BACKFILLING IN THE VICINITY OF EXISTING UTILITIES. CONTRACTOR SHALL USE HAND EXCAVATION WHERE APPROPRIATE TO PROTECT EXISTING UTILITIES.
10. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES IN SERVICE AT ALL TIMES. IF THE CONTRACTOR DAMAGES UTILITY SYSTEMS, THEY SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL REPAIR/REPLACE THE AFFECTED SYSTEM AT HIS OWN EXPENSE.
11. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES AND MAKE ARRANGEMENTS FOR ADJUSTMENTS, ALTERATIONS, AND REPLACEMENT OF PRIVATE UTILITIES WHICH ARE TO BE DONE BY THE UTILITY COMPANY.
12. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SEWER STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER, SEWER, DRAINAGE SURFACE CASTINGS, TRAFFIC SIGNALS, PUBLIC ELECTRICAL ITEMS, AND PRIVATE LIGHTING (ETC.) WITHIN THE LIMITS OF CONSTRUCTION TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2. IF AN EXISTING UTILITY STRUCTURE WITHIN IN THE PROJECT LIMITS IS WITHIN A PROPOSED ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE SURFACE.
13. THE CONTRACTOR SHALL CONSIDER THE INDIVIDUAL SERVICE LINES TO EACH BUILDING FROM ALL UTILITIES, WHETHER MARKED OUT OR NOT, WHEN PROCEEDING WITH EXCAVATION.
14. SURPLUS MATERIALS OBTAINED FROM ANY TYPE OF EXCAVATION, AND ALL EXISTING AND OTHER MATERIALS NOT REQUIRED TO BE REMOVED AND STACKED OR NEEDED FOR USE ON THE PROJECT, AS DETERMINED BY THE ENGINEER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF SUBJECT TO THE REGULATIONS AND REQUIREMENTS OF LOCAL AUTHORITIES GOVERNING THE DISPOSAL OF SUCH MATERIALS, AT NO ADDITIONAL COMPENSATION.
15. THE CONTRACTOR SHALL SUPPORT AND PROTECT EXISTING UTILITIES IN AND AROUND EXCAVATIONS, AND, IN PARTICULAR, WHEN CROSSING UNDER OR OVER ANY DUCT OR PIPE. ALL PROTECTIVE MEASURES AND SUPPORTS SHALL BE CONSIDERED INCIDENTAL WORK AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM BEING INSTALLED.
16. A MINIMUM 24-INCHES OF SEPARATION IS REQUIRED BETWEEN THE HIGH PRESSURE GAS MAIN AND DRAINAGE LINE AND ALSO BETWEEN THE HIGH PRESSURE GAS MAIN AND WATER MAIN.
17. PROPOSED WATER MAIN SHALL BE INSTALLED WITH VERTICAL BENDS TO CROSS UNDER EXISTING WATER MAIN TO AVOID CONFLICTS AND CONNECTION FOR THE HYDRANTS.
18. GUTTER INLETS AND CATCH BASINS WITH FRAME AND COVER ARE PROPOSED DUE TO CONFLICTS WITH EXISTING UTILITIES. IN LOCATIONS WHERE THE CONTRACTOR HAS DETERMINED NO SUCH CONFLICTS EXIST, THE CONTRACTOR SHALL USE MASSDOT STANDARD CATCH BASINS.
19. THE CONTRACTOR SHALL PROTECT PRIVATE IRRIGATION SYSTEM TO EACH PRIVATE PROPERTY, WHETHER MARKED OUT OR NOT, WHEN PROCEEDING WITH EXCAVATION AND GRADING. REPAIR TO DAMAGED IRRIGATION SYSTEM SHALL BE INCIDENTAL TO THE WORK PERFORMED AND INCLUDED IN THE UNIT PRICE BID FOR THE ITEM BEING INSTALLED.

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | -- | 3 | 391 |
| PROJECT FILE NO. | 608051 | | |

**GENERAL NOTES**

608051_HD03(GENERAL NOTES).DWG Plotted on 12-Mar-2025 2:27 PM
Proposal No. 608051 - 132406
A00831 - 10

# WILMINGTON
# ROUTE 38 (MAIN STREET)

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 4 | 391 |
| PROJECT FILE NO. | 608051 | | |

**KEY PLAN**
**REVISED**
**04/23/2025**

Plotted on: 12-Mar-2025 2:27 PM
608051_HD04(KEY PLAN).DWG

Proposal No. 608051 - 132406

A00831 - 11

N

END PAVEMENT MILLING AND RESURFACING
BEGIN FULL DEPTH RECONSTRUCTION
STA 207+00.00

205+99.91 MAIN STREET ALIGNMENT=
20+00.00 BURLINGTON AVENUE ALIGNMENT

206+08.29 MAIN STREET ALIGNMENT=
10+00.00 CHURCH STREET ALIGNMENT

**IMPACT PLANS**
**SHEET 1 OF 3**

END FULL DEPTH RECONSTRUCTION
BEGIN PAVEMENT MILLING AND RESURFACING
STA 223+35.00

**IMPACT PLANS**
**SHEET 2 OF 3**

BEGIN PROJECT
BEGIN PAVEMENT
MILLING
AND RESURFACING
STA 203+55.00
N 3024552.8585
E 744023.6687

CHURCH STREET (ROUTE 62)
BURLINGTON AVENUE (ROUTE 62)
KIRK STREET
MAIN STREET (ROUTE 38)
DUBLIN AVENUE
HERNAN AVENUE
LOWELL STREET (ROUTE 129)
CROSS STREET
BUTTERS ROW
MBTA RAILROAD

END PAVEMENT MILLING AND RESURFACING
BEGIN FULL DEPTH RECONSTRUCTION
STA 229+85.00

241+58.84 MAIN STREET ALIGNMENT=
40+00.00 CROSS STREET ALIGNMENT

228+22.82 MAIN STREET ALIGNMENT=
30+00.00 LOWELL STREET ALIGNMENT

FOR CONTINUATION SEE BELOW

FOR CONTINUATION SEE ABOVE

MATCH PROJECT
NO.607327
STA 261+38.00

MATCH PROJECT
NO. 607327
STA 269+50.85

BRIDGE # W-38-011 (802)

**IMPACT PLANS**
**SHEET 3 OF 3**

ROUTE 62

MAIN STREET (ROUTE 38)

MBTA RAILROAD

FOR CONTINUATION SEE ABOVE

FOR CONTINUATION SEE BELOW

EAMES STREET

293+90.31 MAIN STREET ALIGNMENT=
60+00.00 EAMES STREET ALIGNMENT

306+37.34 MAIN STREET ALIGNMENT=
70+00.00 OLD MAIN STREET (NORTH) ALIGNMENT

OLD MAIN STREET

END FULL DEPTH
RECONSTRUCTION
BEGIN PAVEMENT MILLING AND
RESURFACING WITH OVERLAY
STA 295+00.00

END PROJECT
END PAVEMENT MILLING
AND RESURFACING WITH OVERLAY
STA 319+20.77
N 3014857.1242
E 748337.3382

313+78.87 MAIN STREET ALIGNMENT=
80+00.00 OLD MAIN STREET (SOUTH)

END FULL DEPTH

## LEGEND

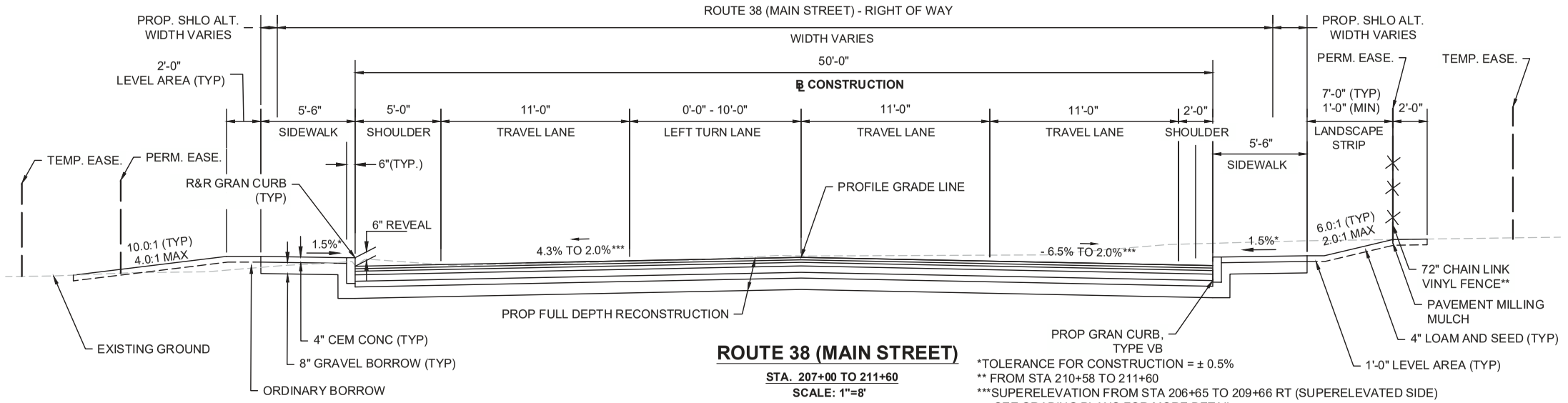
- (X) CONSTRUCTION PLANS
- [X] CONSTRUCTION PROFILES
- ◇X CURB TIE AND GRADING PLANS
- ⬡X DRAINAGE PLANS
- ⬡X UTILITY PLANS
- ⬡X PAVEMENT MARKINGS AND SIGNS PLANS
- (X) TRAFFIC SIGNAL PLANS

0 150 300 450 600
SCALE: 1" = 300'

WILMINGTON
ROUTE 38 (MAIN STREET)

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 15 | 391 |
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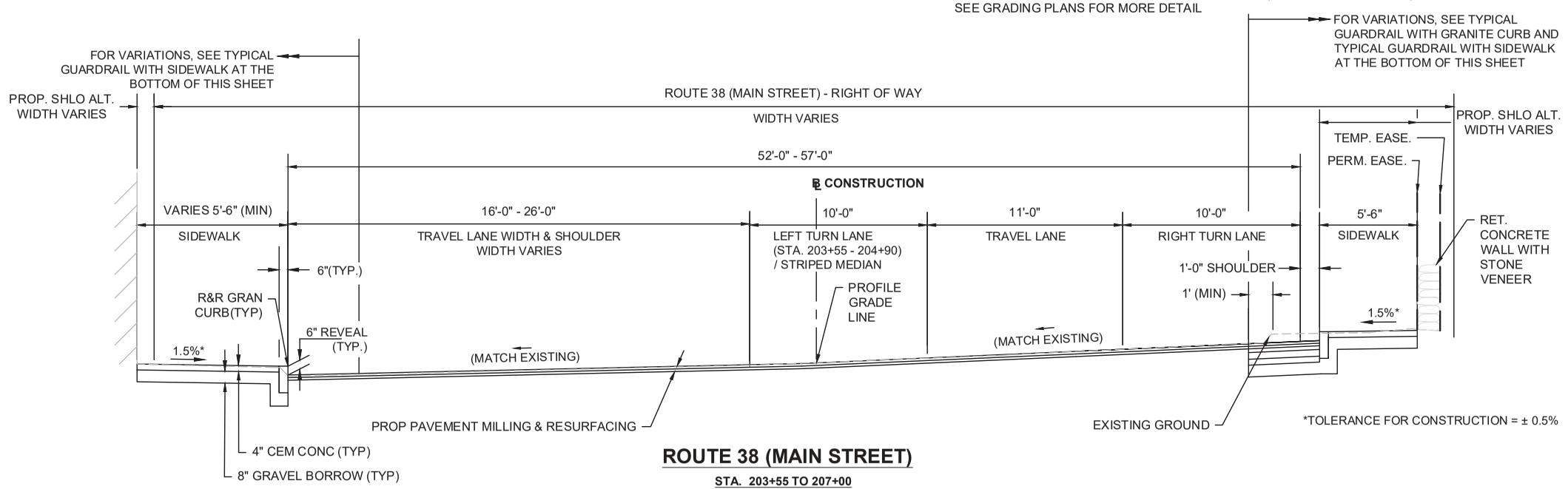
TYPICAL SECTIONS - 1




## ROUTE 38 (MAIN STREET)

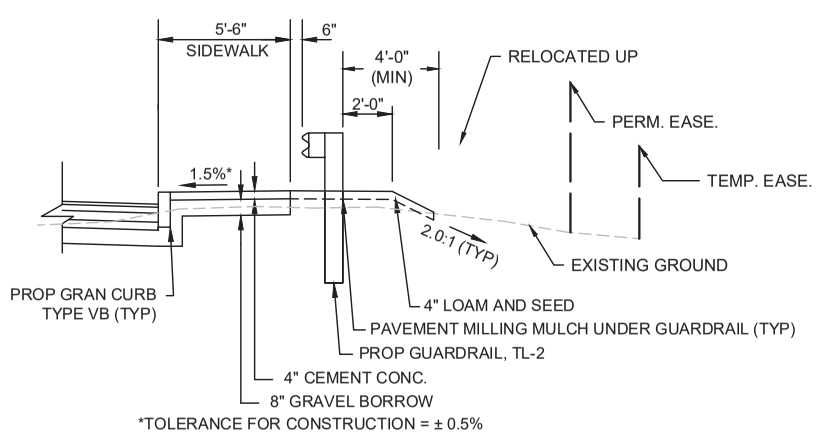
**STA. 207+00 TO 211+60**
**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
** FROM STA 210+58 TO 211+60
***SUPERELEVATION FROM STA 206+65 TO 209+66 RT (SUPERELEVATED SIDE)
SEE GRADING PLANS FOR MORE DETAIL




## ROUTE 38 (MAIN STREET)

**STA. 203+55 TO 207+00**
**SCALE: 1"=8'**




## TYPICAL GUARDRAIL WITH SIDEWALK

| | | |
|---|---|---|
| STA. 206+71 RT - 209+05 RT | STA. 40+29 LT - 41+30 LT | STA. 260+78 RT - 261+38 RT |
| STA. 216+75 RT - 218+34 RT | STA. 52+16 LT - 52+84 LT | STA. 274+93 RT - 276+14 RT |
| STA. 217+61 LT - 218+33 LT | STA. 252+13 RT - 252+89 RT | STA. 316+37 LT - 317+62 LT |
| STA. 216+75 RT - 218+34 RT | STA. 253+50 RT - 257+92 RT | |
| STA. 236+88 RT - 53+00 RT | STA. 260+14 LT - 260+73 LT | |

**SCALE: 1"=8'**

4 0 4 8
SCALE IN FEET

# PAVEMENT NOTES

PROPOSED FULL DEPTH RECONSTRUCTION

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

INTERMEDIATE COURSE: 2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

BASE COURSE: 4.5" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) PLACED IN ONE COURSE

SUBBASE: 4" DENSE GRADED CRUSHED STONE FOR SUBBASE (COMPACTED) OVER 8" GRAVEL BORROW (TYPE B)(COMPACTED)

PROPOSED BRIDGE PAVEMENT

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-B-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P)

SUBBASE: OVER 8" GRAVEL BORROW (TYPE B)(COMPACTED)(DEPTH VARIES)

PROPOSED PAVEMENT MILLING & RESURFACING

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) OVER

ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER MILLED SURFACE.

MILLING: 3.5" PAVEMENT STANDARD MILLING

PROPOSED MILLING & STRUCTURAL OVERLAY

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) OVER

ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER MILLED SURFACE.

MILLING: 3" PAVEMENT STANDARD MILLING

PROPOSED FULL DEPTH RECONSTRUCTION LESS THAN 4 FEET WIDE

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER

BASE COURSE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE OVER

SUBBASE: 8" GRAVEL BORROW (TYPE B)

PROPOSED TEMPORARY TRENCH PATCHES

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)

INTERMEDIATE COURSE: 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)

SUBBASE: SUITABLE BACKFILL COMPACTED

PROPOSED CEMENT CONCRETE WALK/ WHEELCHAIR RAMP

SURFACE: 4" CEMENT CONCRETE (AIR ENTRAINED 4000 PSI, 3/4", 610)

FOUNDATION: 8" GRAVEL BORROW (TYPE B)

PROPOSED HMA DRIVEWAY

SURFACE: 4" SUPERPAVE (1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER 2.5" SUPER PAVE SURFACE COURSE - 12.5 (SSC-12.5))

SUBBASE: 8" GRAVEL BORROW (TYPE B)

PROPOSED HMA WALK SURFACE

SURFACE: 3" SUPERPAVE (1.25" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER 1.75" SUPER PAVE SURFACE COURSE - 12.5 (SSC-12.5))

SUBBASE: 8" GRAVEL BORROW (TYPE B)

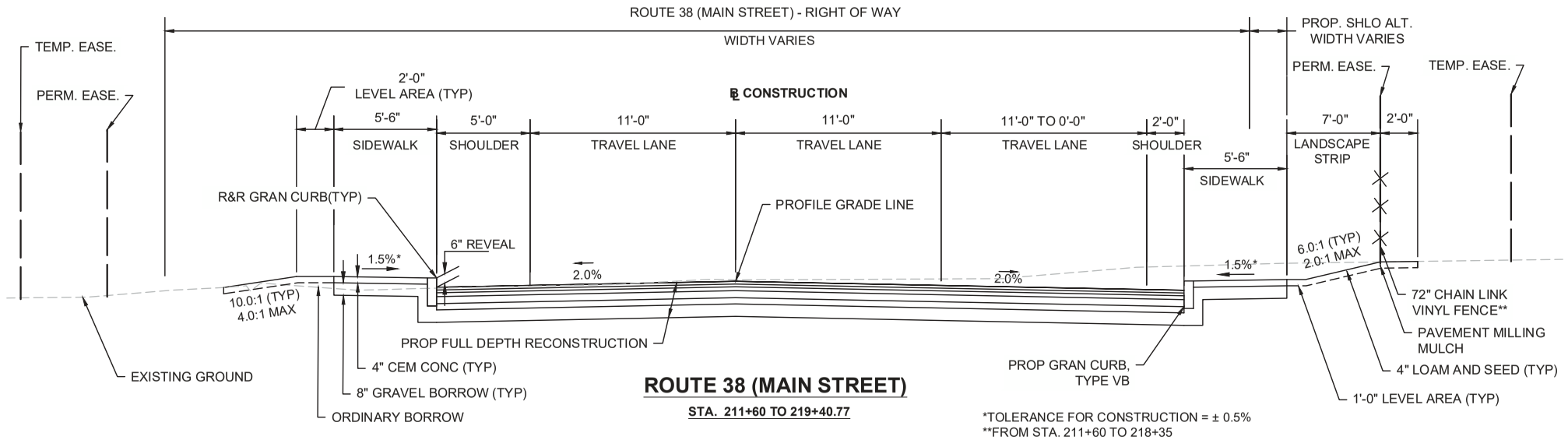
NOTE:
1. TACK COAT SHALL BE APPLIED BETWEEN PAVEMENT LAYERS AT A RATE PER THE LATEST MASSDOT STANDARD SPECIFICATION SUBSECTION 450.
2. TEMPORARY TRENCH PATCHES ARE PAID UNDER ITEM 472 TEMPORARY ASPHALT PATCHING.



A00831 12
608051_HD05(TYPICAL SECTIONS).DWG Plotted on 12-Mar-2025 2:28 PM
Proposal No. 608051 - 132406

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 16 | 391 |
| PROJECT FILE NO. | 608051 | | |

**TYPICAL SECTIONS - 2**



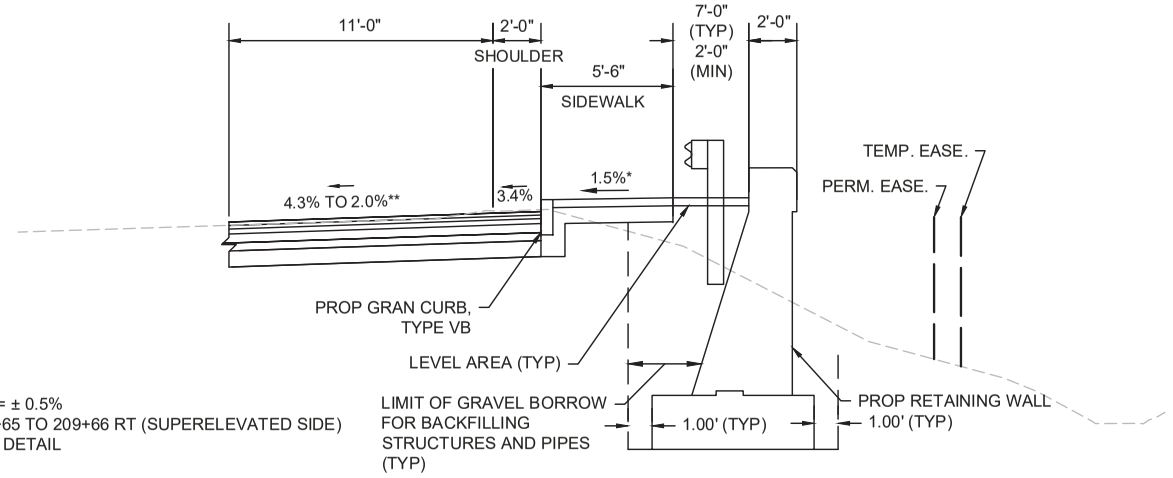

## ROUTE 38 (MAIN STREET)

**STA. 211+60 TO 219+40.77**

**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**FROM STA. 211+60 TO 218+35

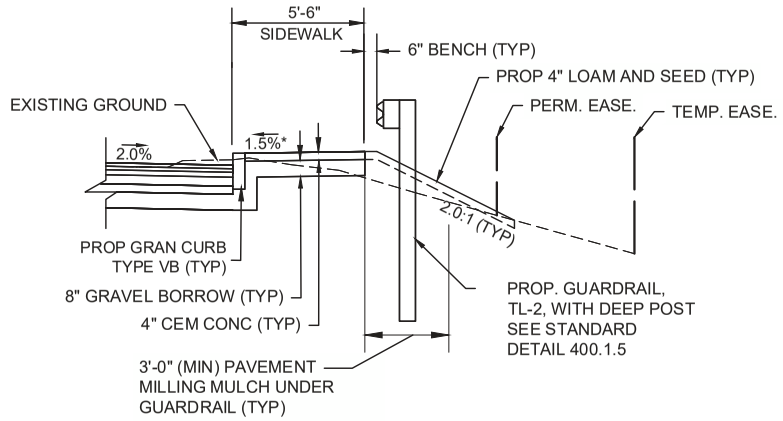
4 0 4 8
SCALE IN FEET




*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**SUPERELEVATION FROM STA 206+65 TO 209+66 RT (SUPERELEVATED SIDE)
SEE GRADING PLANS FOR MORE DETAIL

## ROUTE 38 (MAIN STREET)

**STA. 207+22 TO 209+00**
**SCALE: 1"=8'**




## TYPICAL GUARDRAIL WITH DEEP POST AND SIDEWALK

**STA. 217+77 TO 217+96 LT & RT**
**STA. 237+00 TO 240+75 RT**
**STA. 253+30 TO 257+92 RT**
**STA. 260+78 TO 261+38 RT**

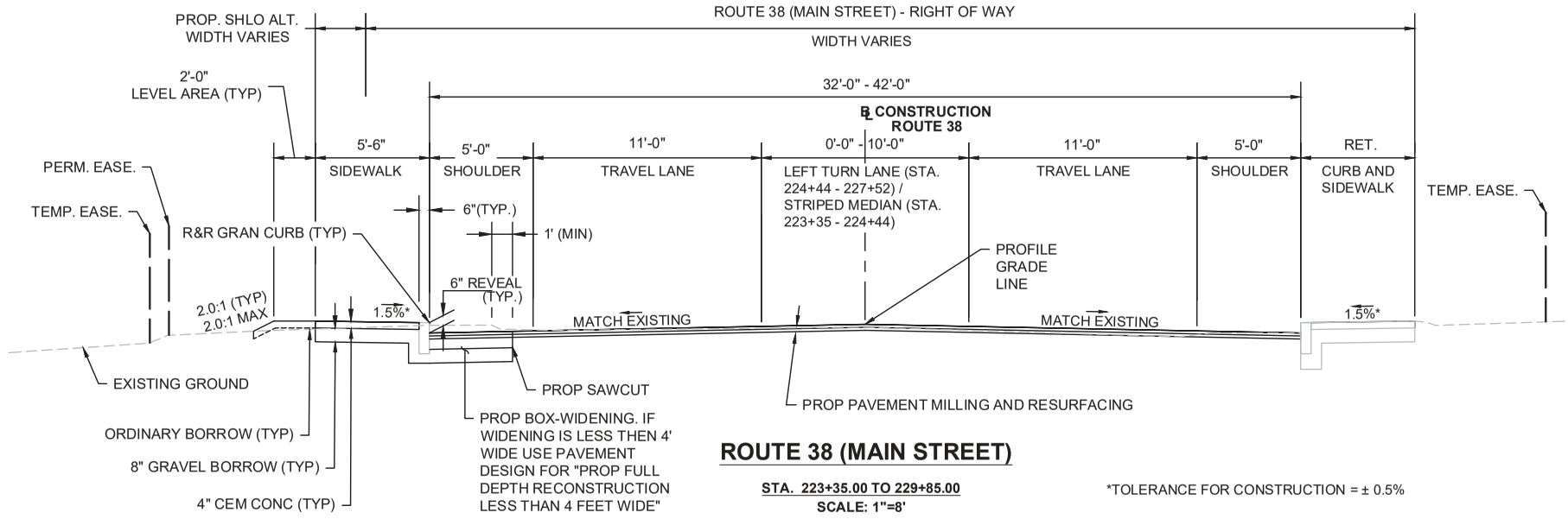
**SCALE: 1"=8'**

A00831 - 13
Proposal No. 608051 - 132406
608051_HD05(TYPICAL SECTIONS).DWG Plotted on 12-Mar-2025 2:28 PM
ACOE PLANS SHEET 6 OF 27

WILMINGTON
ROUTE 38 (MAIN STREET)

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 17 | 391 |
| PROJECT FILE NO. | 608051 | | |

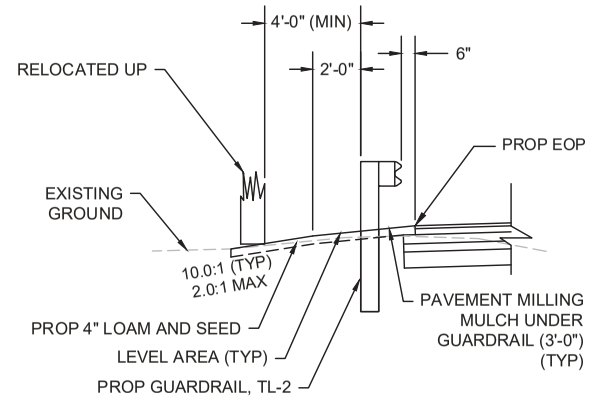
TYPICAL SECTIONS - 3




## ROUTE 38 (MAIN STREET)

STA. 223+35.00 TO 229+85.00
SCALE: 1"=8'

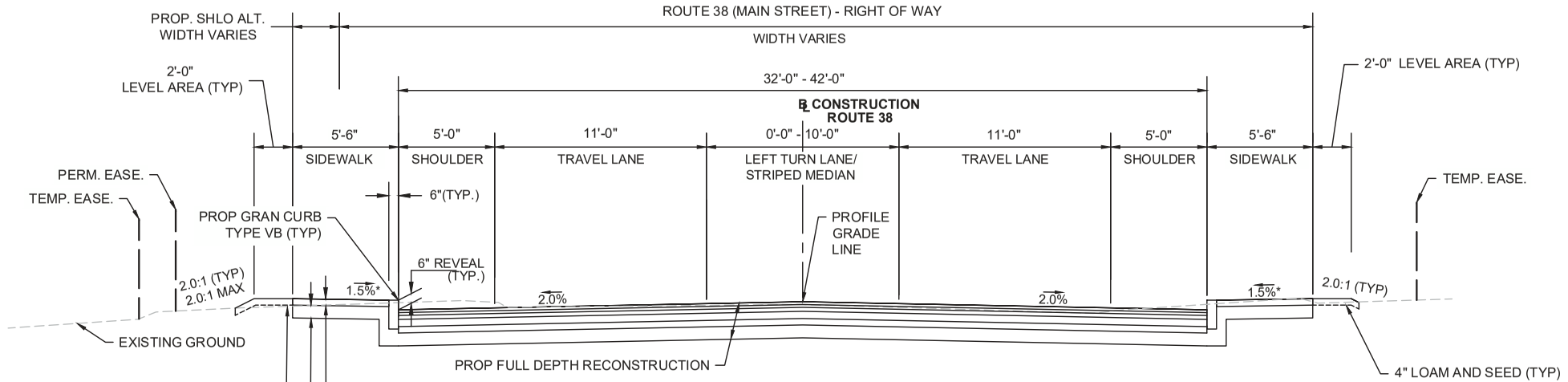
*TOLERANCE FOR CONSTRUCTION = ± 0.5%




## TYPICAL GUARDRAIL AT EOP

STA 248+24 TO 255+50 LT
SCALE: 1"=8'

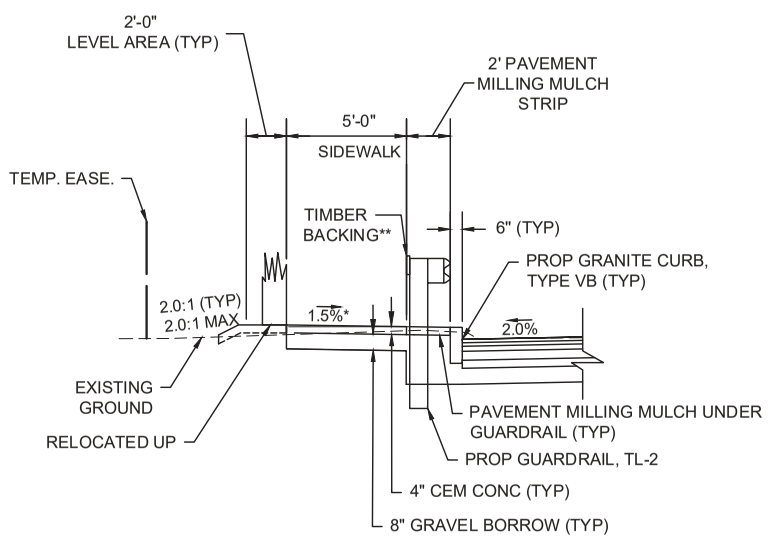
4 0 4 8
SCALE IN FEET




## ROUTE 38 (MAIN STREET)

STA. 222+20.00 TO 223+35.00
STA. 229+85.00 TO 230+32.00
STA. 238+50.00 TO 245+00.00
SCALE: 1"=8'

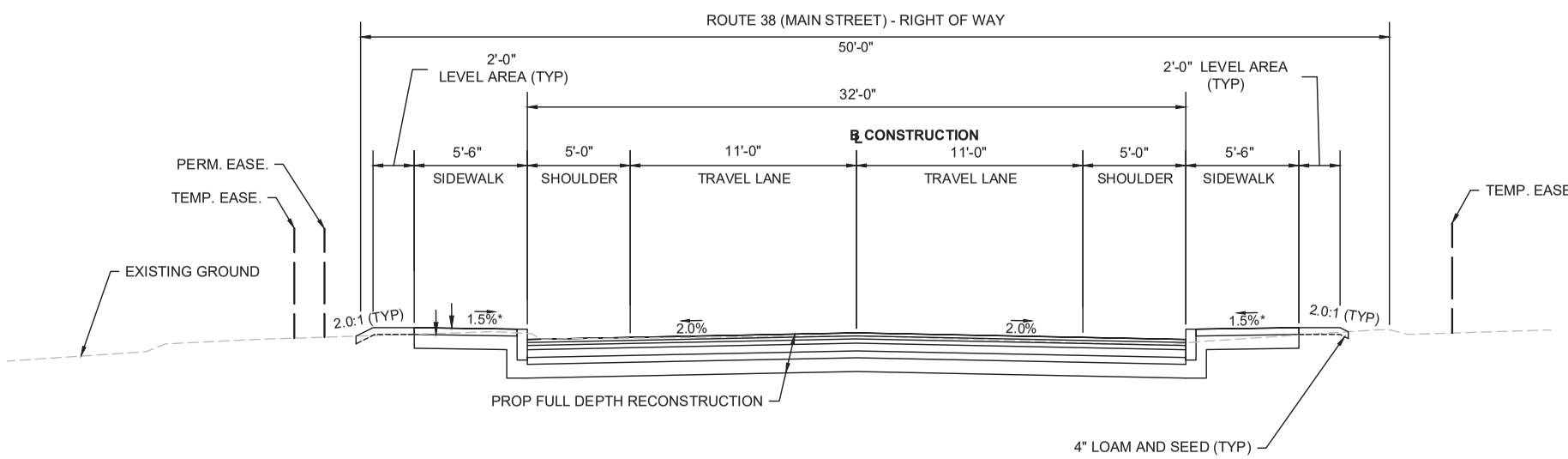
*TOLERANCE FOR CONSTRUCTION = ± 0.5%




**SEE MASSDOT CONSTRUCTION STANDARD DETAILS 400.5.1

## TYPICAL GUARDRAIL AT FACE OF CURB

STA. 236+36 TO 240+81 LT
SCALE: 1"=8'



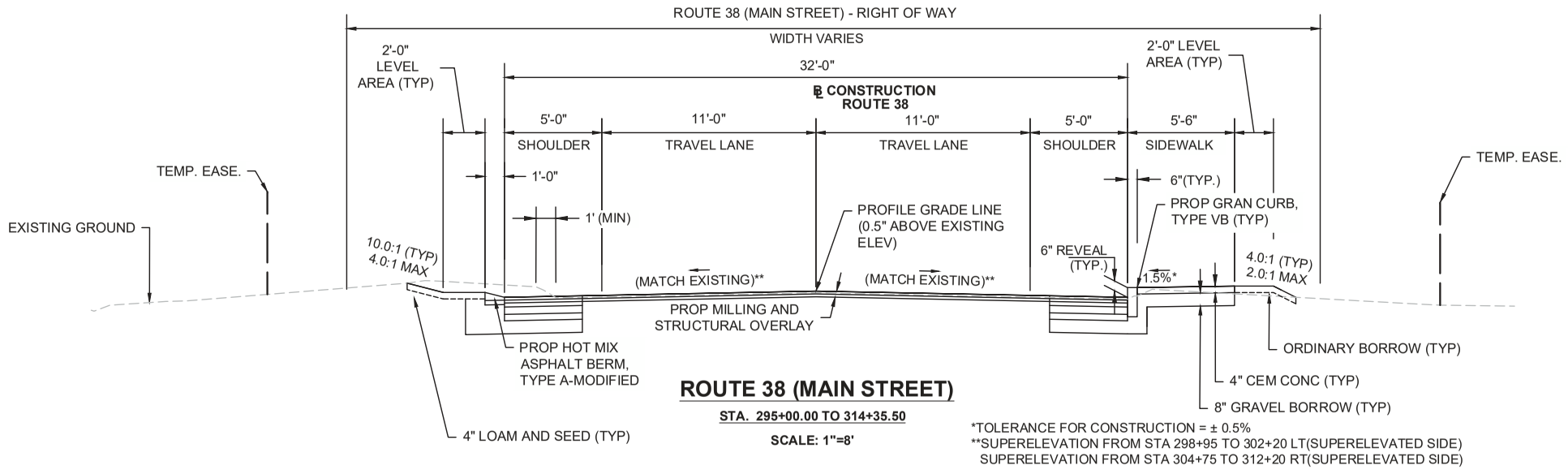

## ROUTE 38 (MAIN STREET)

STA. 219+40.77 TO 222+20.00
STA. 230+32.00 TO 238+50.00
STA. 245+00.00 TO 248+18.00
SCALE: 1"=8'

*TOLERANCE FOR CONSTRUCTION = ± 0.5%

Proposal No. 608051 - 132406
Plotted on: 12-Mar-2025 2:28 PM
608051_HD05(TYPICAL SECTIONS).DWG
A00831 - 14

Plotted on 12-Mar-2025 2:28 PM
608051_HD05(TYPICAL SECTIONS).DWG
Proposal No. 608051 - 132406
A00831 - 15

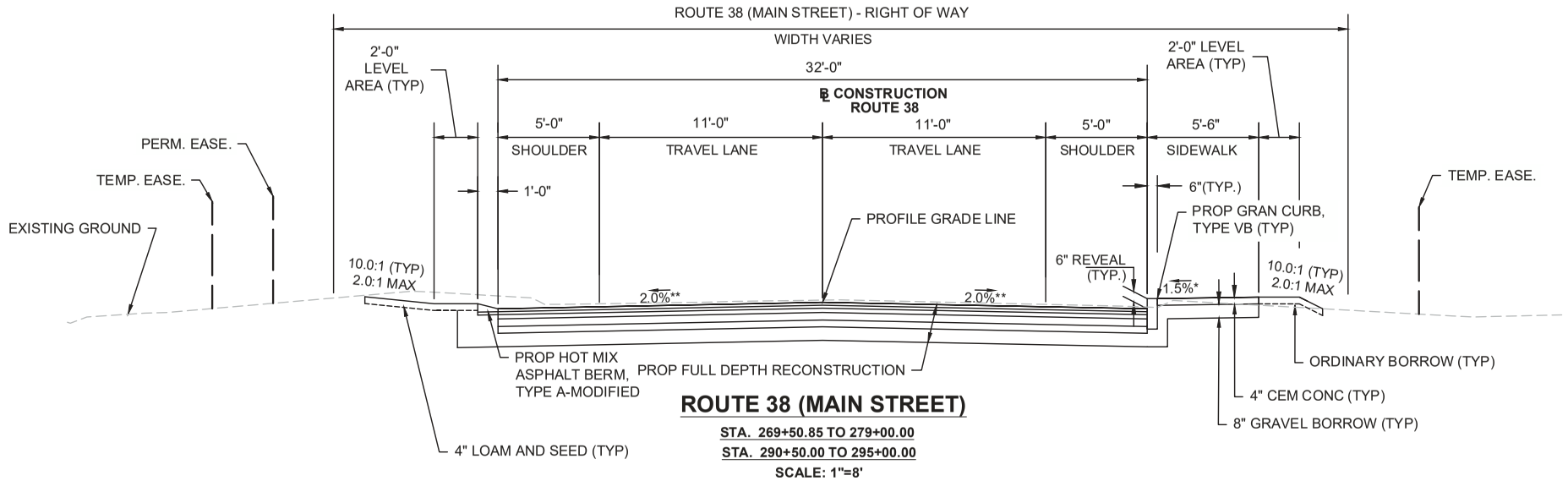



## ROUTE 38 (MAIN STREET)

**STA. 295+00.00 TO 314+35.50**

**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**SUPERELEVATION FROM STA 298+95 TO 302+20 LT(SUPERELEVATED SIDE)
SUPERELEVATION FROM STA 304+75 TO 312+20 RT(SUPERELEVATED SIDE)

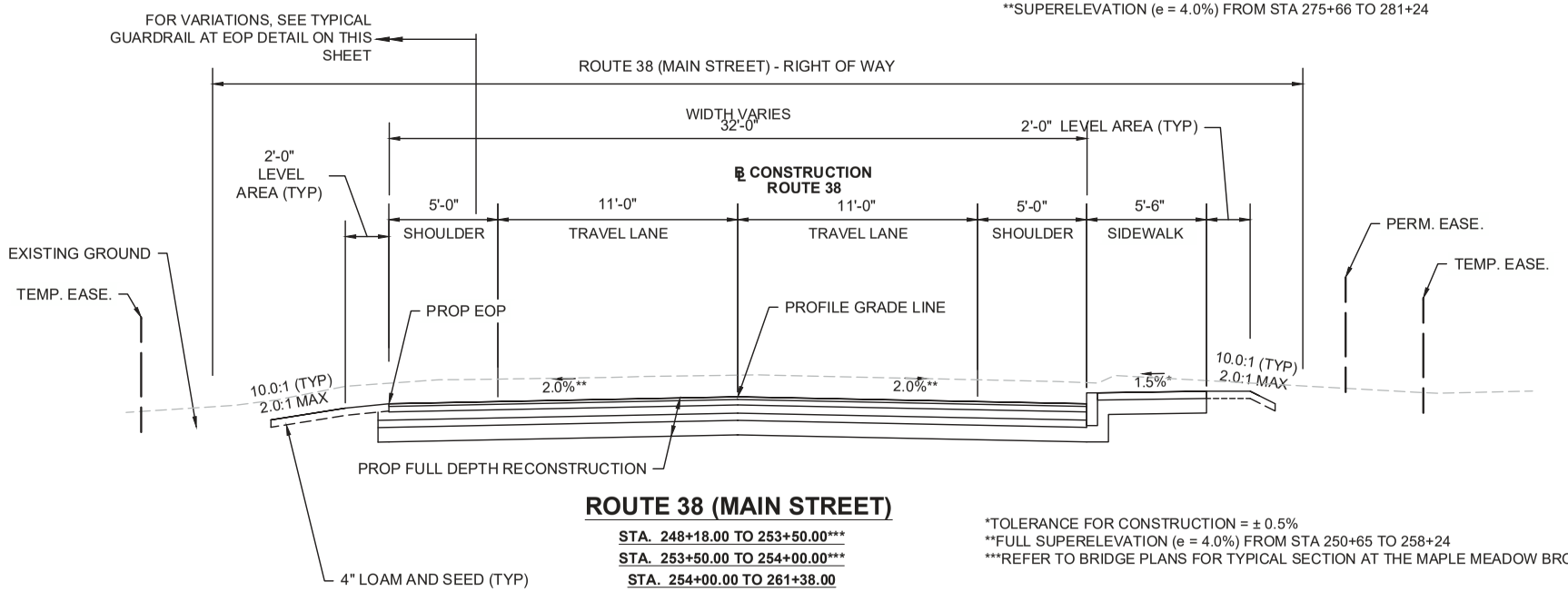



## ROUTE 38 (MAIN STREET)

**STA. 269+50.85 TO 279+00.00**
**STA. 290+50.00 TO 295+00.00**

**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**SUPERELEVATION (e = 4.0%) FROM STA 275+66 TO 281+24

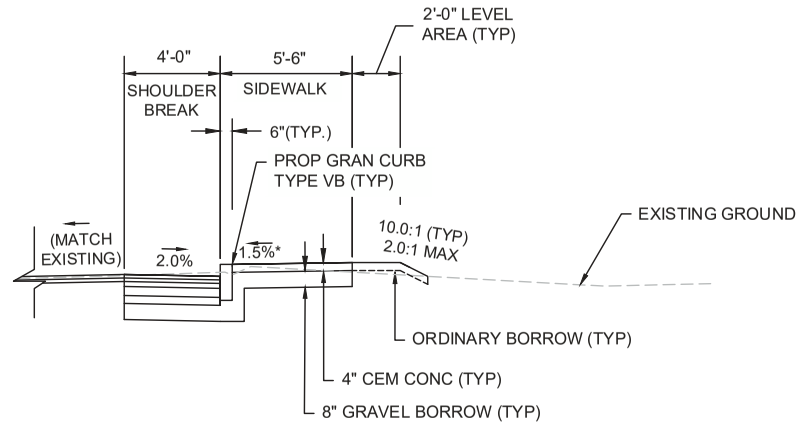



## ROUTE 38 (MAIN STREET)

**STA. 248+18.00 TO 253+50.00*****
**STA. 253+50.00 TO 254+00.00*****
**STA. 254+00.00 TO 261+38.00**
**STA. 279+00.00 TO 290+50.00**

**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**FULL SUPERELEVATION (e = 4.0%) FROM STA 250+65 TO 258+24
***REFER TO BRIDGE PLANS FOR TYPICAL SECTION AT THE MAPLE MEADOW BROOK BRIDGE




## TYPICAL SHOULDER BREAK IN SUPERELEVATED SECTION

**STA 298+95 TO 302+20 LT (NO SIDEWALK)**
**STA 302+75 TO 312+20 RT**
**STA 313+90 TO 318+70 LT**

**SCALE: 1"=8'**

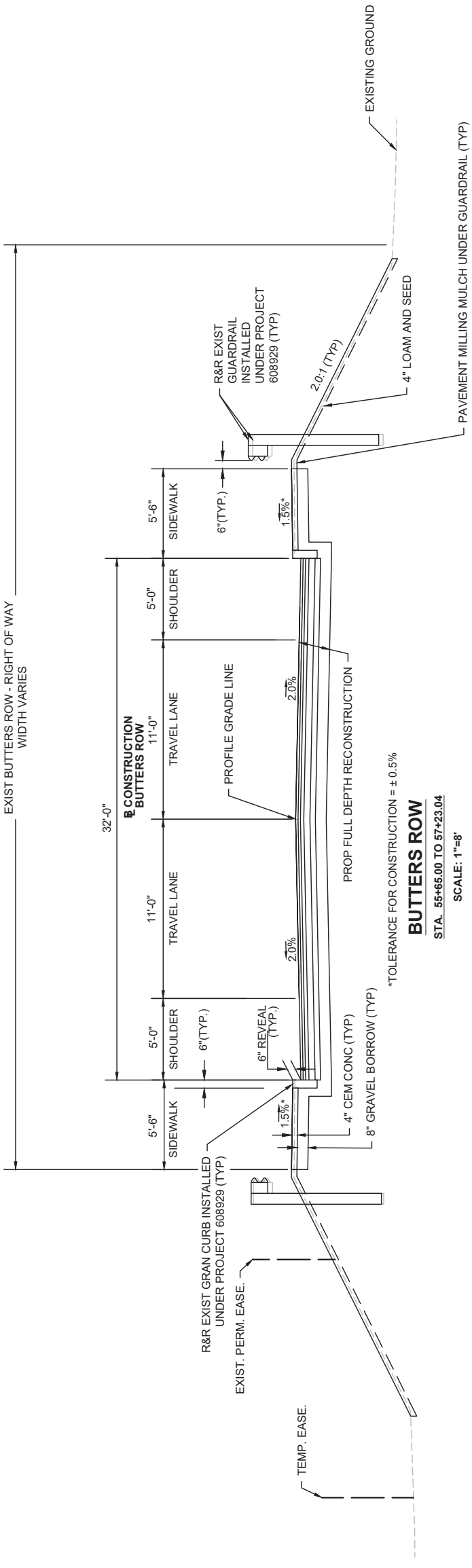
4 0 4 8
SCALE IN FEET

608051_HD05(TYPICAL SECTIONS).DWG Plotted on 12-Mar-2025 2:28 PM

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

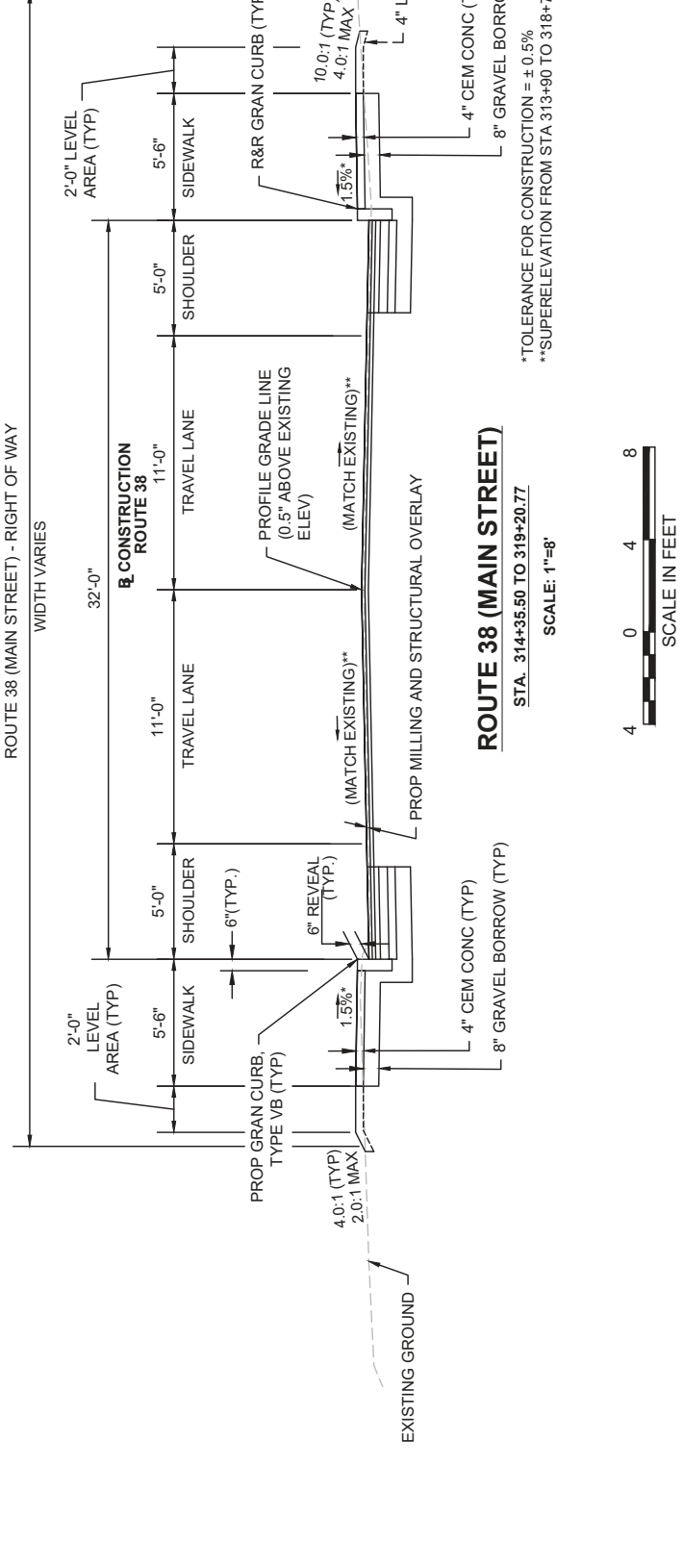
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 19 | 391 |
| PROJECT FILE NO. 608051 | | | |

**TYPICAL SECTIONS - 5**




*TOLERANCE FOR CONSTRUCTION = ± 0.5%

**BUTTERS ROW**
**STA. 55+65.00 TO 57+23.04**
**SCALE: 1"=8'**




**ROUTE 38 (MAIN STREET)**
**STA. 314+35.50 TO 319+20.77**
**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**SUPERELEVATION FROM STA 313+90 TO 318+70 LT(SUPERELEVATED SIDE)

4 0 4 8
SCALE IN FEET

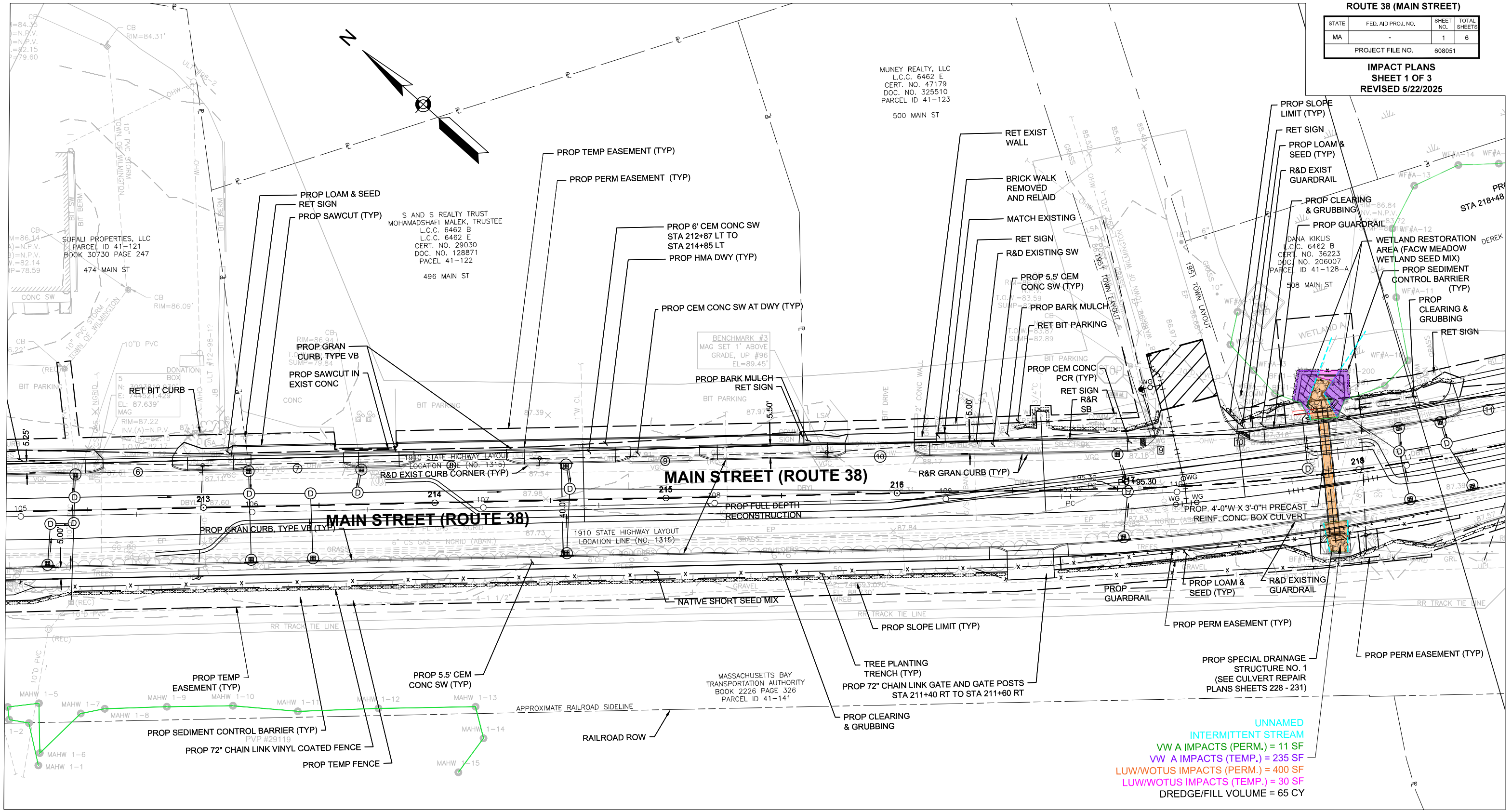
ACOE PLANS SHEET 9 OF 27

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 1 | 6 |
| PROJECT FILE NO. | 608051 | | |

**IMPACT PLANS**
**SHEET 1 OF 3**
**REVISED 5/22/2025**

608051_EV(IMPACT-PLANS).DWG Plotted on 22-May-2025 8:10 PM
Project No. 608051 - 132406
A00831 - 17




PERMANENT VW IMPACT AREA = 2,630 SF ±

PERMANENT LUW/WOTUS IMPACT AREA = 2,195 SF ±

TOTAL DREDGE/FILL WITHIN LUW/WOTUS VOLUME = 715 CY

TOTAL PERMANENT IMPACT AREA = 4,825 SF ±

TEMPORARY VW IMPACT AREA = 2,834 SF ±

TEMPORARY LUW/WOTUS IMPACT AREA = 601 SF ±

TOTAL TEMPORARY IMPACT AREA = 3,435 SF ±

VW REPLICATION AREA = 3,510 SF

VEGETATED WETLAND (VW)

BANK/OHW (PERENNIAL STREAM)

BANK/OHW (INTERMITTENT STREAM)

ACOE PLANS SHEET 10 OF 27

0 20 50 100

SCALE: 1" = 40'

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 2 | 6 |
| PROJECT FILE NO. | 608051 | | |

**IMPACT PLANS**
**SHEET 2 OF 3**
**REVISED 5/22/2025**

608051_EVIMPACT-PLANS).DWG Plotted on 22-May-2025 8:06 PM

Proposal No. 608051 13 S1 - 133406

A00831 - 18

# MAIN STREET (ROUTE 38)

PROP 1.5' MILLING MULCH STRIP (TYP)
PROP GUARDRAIL
PROP SAWCUT (TYP)
PROP CEM CONC SW AT DWY (TYP)
PROP HMA BERM, TYPE A-MODIFIED SEE DETAIL ON SHEET 222
RET GUARDRAIL
EXISTING PHRAGMITES PROVIDE INVASIVE SPECIES MANAGEMENT PLAN FOR PLANTS AND DISTURBED SOIL WHERE THEY ARE WITHIN THE LIMIT OF WORK
R&D SIGN
R&D EXIST BIT BERM (TYP)
PROP GRAN CURB TYPE VB (TYP)
R&D STUMP
RET SIDEWALK (TYP)
ONE CROSS LLC BOOK 35186 PAGE 80 PARCEL ID 40-11
CROSS ST
PROP TEMP EASEMENT (TYP)
PROP SLOPE LIMIT (TYP)
R&S SIGN
PROP SEDIMENT CONTROL BARRIER (TYP)
R&D EXISTING GUARDRAIL
PROP LOAM & SEED (TYP)
VERIZON NEW ENGLAND INC. PARCEL ID 40-12 BOOK 1212 PAGE 352
MAIN ST
PROP. SEDIMENT CONTROL BARRIER (TYP.)
PROP HMA DWY (TYP)
RET EXIST HEADWALL
SEE NOTE 1
PROP GUARDRAIL
PROP FULL DEPTH RECONSTRUCTION
PROP CONC HEADWALL
PROP STONE FOR PIPE END
PROP PERM EASEMENT (TYP)
PROP 5.5' CEM CONC SW (TYP)
PROP CLEARING & GRUBBING
R&D EXISTING GUARDRAIL
PROP SEDIMENT CONTROL BARRIER (TYP)
RET SIDEWALK (TYP)
WF#C-1 START
VW D
VW IMPACTS (PERM.) = 270 SF
VW IMPACTS (TEMP.) = 437 SF
VW C
VW IMPACTS (PERM.) = 2,315 SF
VW IMPACTS (TEMP.) = 1,443 SF
PROP PERM EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
R&D EXISTING GUARDRAIL
PROP 5' CEM CONC SW (TYP)
PROP CLEARING AND GRUBBING
R&D EXIST BIT BERM (TYP)
PROP SLOPE LIMIT (TYP)
PROP LOAM & SEED (TYP)
PROP TEMP EASEMENT (TYP)
PROP SAWCUT & MATCH EXISTING
LIMIT OF WORK
END PAVEMENT FINE MILLING AND RESURFACING STA. 41+95.00
END FULL DEPTH RECONSTRUCTION MATCH EXISTING GRADE & ELEVATIO STA. 40+70.00
RET BERM
PROP TEMP EASEMENT (TYP)
TOWN OF WILMINGTON PARCEL ID 40-13-A BOOK 35162 PAGE 138
CROSS ST
TAKING ON BEHALF OF THE TOWN
PROP GUARDRAIL - CURVED
PROP CLEARING & GRUBBING
PROP PERM EASEMENT (TYP)
2023 TOWN ALTERATION SECTION 3 (DEED BK 37867 PG 1) (PLAN BK 201 PG 43)
CROSS STREET
PC +05.12
PT +54.62
PC +06.25
57+99.10
40+00
N 45° 08' 00" E
GRAN CURB PROPOSED UNDER PROJECT 608929
BUTTERS ROW
R=200.00'
Δ=46° 09' 57"
L=161.22'
2023 TOWN ALTERATION SECTION 2 (DEED BK 37867 PG 51) (PLAN BK 201 PG 51)
PC +56.92
LOCATION LINE OF 1910 STATE HIGHWAY LAYOUT (SHEET NO. 315)
ONE CROSS LLC BOOK 35186 PAGE 80 PARCEL ID 40-11
CROSS ST
SUBJECT TO VERIZON EASEMENT BOOK 36483 PAGE 73 (NOT PLOTTABLE)
TO VERIZON EASEMENT 36483 PAGE 73 OT PLOTTABLE)
HIGHWAY LAYOUT NE (NO. 1315)
TOWN OF WILMINGTON
WETLANDS
TREES
BENCHMARK #8 MAG SET 1' ABOVE GRADE UP #7 EL=88.73'
1 STONE BRIDGE
29 N: 3022075.11' E: 746474.403' EL: 88.233' MAG
INV 12" HDPE EL=88.23
CONC RET WALL
STONE RET WALL
WEIGHT LIMIT 16T 16T
SPEED LIMIT 35
STOP
PERMANENT VW IMPACT AREA
TEMPORARY VW IMPACT AREA
TEMPORARY LUW/WOTUS IMPACT AREA
VEGETATED WETLAND (VW)
BANK/OHW (PERENNIAL STREAM)
BANK/OHW (INTERMITTENT STREAM)

ACOE PLANS SHEET 11 OF 27

0 20 50 100
SCALE: 1" = 40'

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 3 | 3 |
| PROJECT FILE NO. | 608051 | | |

**IMPACT PLANS**
**SHEET 3 OF 3**
**REVISED 5/22/2025**

Plotted on 22-May-2025 8:24 PM

608051_EV(IMPACT-PLANS).DWG

Proposal No. 608051 132406

AU0831 - 19

MAPLE MEADOW BROOK
VW E IMPACTS (PERM.) = 5 SF
VW E IMPACTS (TEMP.) = 402 SF
LUW/WOTUS (PERM.) = 1,795 SF
LUW/WOTUS (TEMP.) = 540 SF
VW G IMPACTS (TEMP.) = 228 SF
DREDGE/FILL VOLUME = 650 CY

TOWN OF WILMINGTON
PARCEL ID 39-5
BOOK 26062 PAGE 215

9 CROSS ST

MAPLE MEADOW BROOK
VW E IMPACTS (PERM.) = 29 SF
VW E IMPACTS (TEMP.) = 89 SF
LUW/WOTUS (TEMP.) = 31 SF

MAPLE MEADOW BROOK

FLOW

OHW EL. 77.78' (NAVD88)

PROP SLOPE LIMIT (TYP)

PROP CLEARING & GRUBBING

TEXTRON SYSTEMS CORPORATION
PARCEL ID 48-73-A
BOOK 24103 PAGE 25
BOOK 35305 PAGE 130
BOOK 35305 PAGE 132

201 LOWELL ST

PROP LOAM & NATIVE SEED (TYP)

PROP SEDIMENT CONTROL BARRIER (TYP)

SUBJECT TO RECIPROCAL EASEMENTS
BOOK 37155 PAGE 258
(NOT PLOTTABLE)

PROP PERM EASEMENT (TYP)

PROP. CHANNEL ARMORING

PROP. FLOATING SILT FENCE (TYP)

PROP COFFERDAM (TYP)

BRIDGE NO. W-38-011 (802)

WETLAND RESTORATION AREA (FACW MEADOW WETLAND SEED MIX)

PROP. STONE FOR PIPE ENDS (TYP.)

PROP PERM EASEMENT (TYP)

PROP SEDIMENT CONTROL BARRIER

R&D EXIST GUARDRAIL

PROP GUARDRAIL

PROP GRAN CURB, TYPE VB (TYP)

STREET (ROUTE 38)

1+38.53

PROP HMA DWY (TYP)

(RET)

U-HAUL REAL ESTATE COMPANY
PARCEL ID 39-11-A
BOOK 5015 PAGE 103

687 MAIN ST

R&D EXISTING GUARDRAIL

PROP SAWCUT (TYP)

PROP CEM CONC SW AT DWY (TYP)

PROP TEMP EASEMENT (TYP)

PROP PERMANENT IMPACT ATTENUATOR, NON-REDIRECTIVE, TL-3

PROP EOP (TYP)

PROP ROUTE 38 CONST BL

MAIN STREET (ROUTE 38)
(PUBLIC - 1911 STATE HIGHWAY LAYOUT)

PROP FULL DEPTH RECONSTRUCTION

PROP NATURAL STREAMBED MATERIAL OVER M2.02.2 (TYP)
SEE DRAINAGE AND UTILITY DETAIL SHEETS

PROP LOAM & NATIVE SEED
PROP JUTE MESH (STA 253+54 RT - 253+73 RT)

R&D EXISTING GUARDRAIL

PROP SLOPE LIMIT (TYP)

PROP 5.5' CEM CONC SW (TYP)

PROP CLEARING & GRUBBING

PROP TEMP PEDESTRIAN BRIDGE AND WALKWAY

PROP LOAM & NATIVE SEED
(STA 253+91 - 257+38)

PROP GUARDRAIL

100-YEAR FLOOR ZONE (TYP)

LIMIT OF REPLICATION AREA

WETLAND E

PROP WETLAND REPLICATION AREA:
3,510 SF
(SEE SHEET 212)

ACCESS EASEMENT
BOOK 8693 PAGE 92
BOOK 36733 PAGE 145
BOOK 37155 PAGE 33

100' BUFFER ZONE

PROP HMA DWY (TYP)

RET SIGN

PROP SAWCUT (TYP)

1911 STATE HIGHWAY LAYOUT
LOCATION LINE (NO. 1352)

PCC +18.67

100-YEAR FLOODPLAIN
UPSTREAM EL. 82.9'

REM TREE

COMPENSATORY FLOOD STORAGE AREA
SEE SHEET: 219

TOWN OF WILMINGTON
BOOK 2299 PAGE 288
PARCEL ID 39-9
MAIN ST

PERMANENT VW IMPACT AREA

TEMPORARY VW IMPACT AREA

TEMPORARY LUW/WOTUS IMPACT AREA

PERMANENT LUW/WOTUS IMPACT AREA

VEGETATED WETLAND (VW)

BANK/OHW (PERENNIAL STREAM)

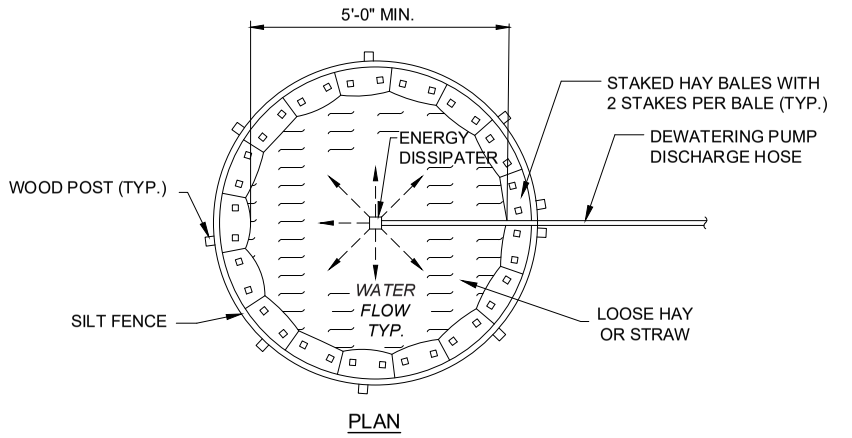
BANK/OHW (INTERMITTENT STREAM)

VW REPLICATION AREA

0 20 50 100
SCALE: 1" = 40'

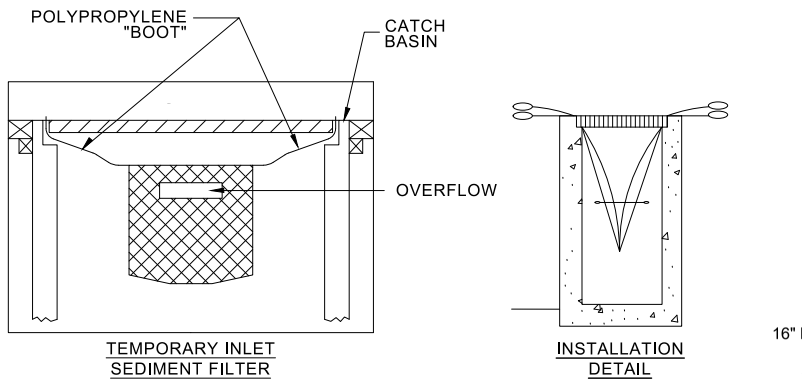
ACOE PLANS SHEET 12 OF 27

Plotted on 20-Mar-2025 5:38 PM
608051_UT02(DRAINAGE-DETAILS).DWG
Proposal No. 608051 - 132406
A00831 - 20




NOTE:
THIS DETAIL SHOWS ONE METHOD OF SEDIMENTATION CONTROL DURING DEWATERING.

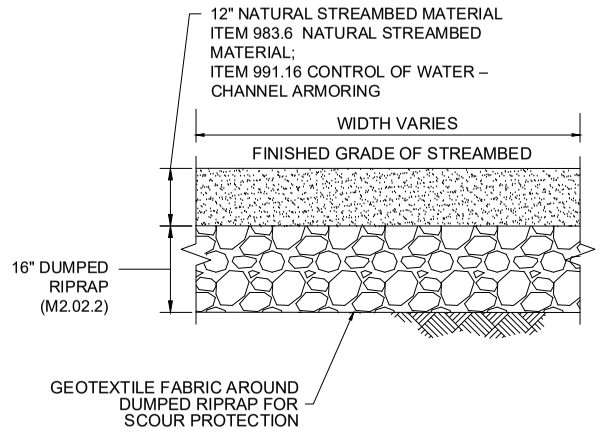
## DEWATERING SEDIMENTATION BASIN DETAIL
NOT TO SCALE



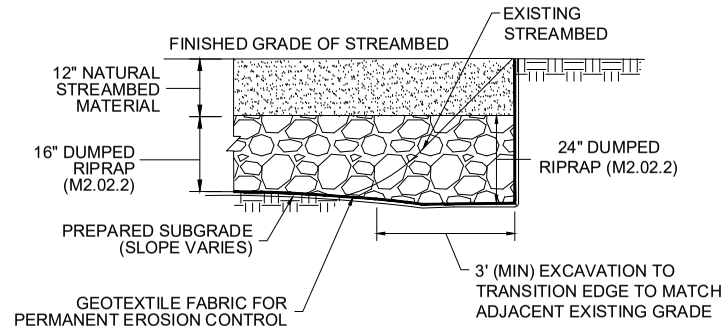

NOTE:

1. INSTALL INLET PROTECTION IN EXISTING CATCH BASIN, BEFORE COMMENCING WORK.
2. GRATE TO BE PLACED OVER INLET PROTECTION.
3. INLET PROTECTION SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

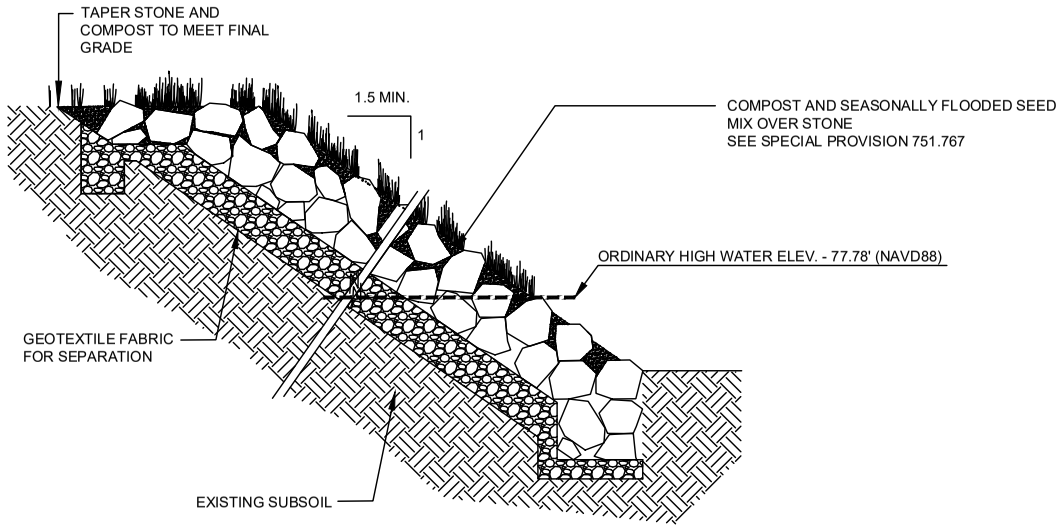
## INLET PROTECTION FILTER BAG
NOT TO SCALE



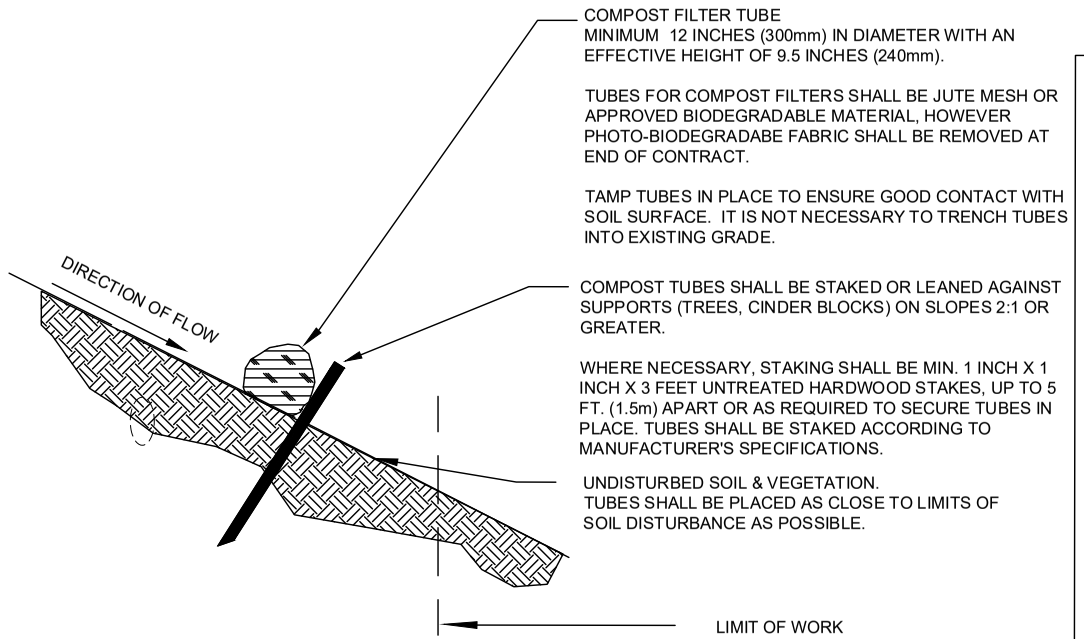

## CHANNEL ARMORING
NOT TO SCALE




## RIPRAP ARMORING END TRANSITION
NOT TO SCALE

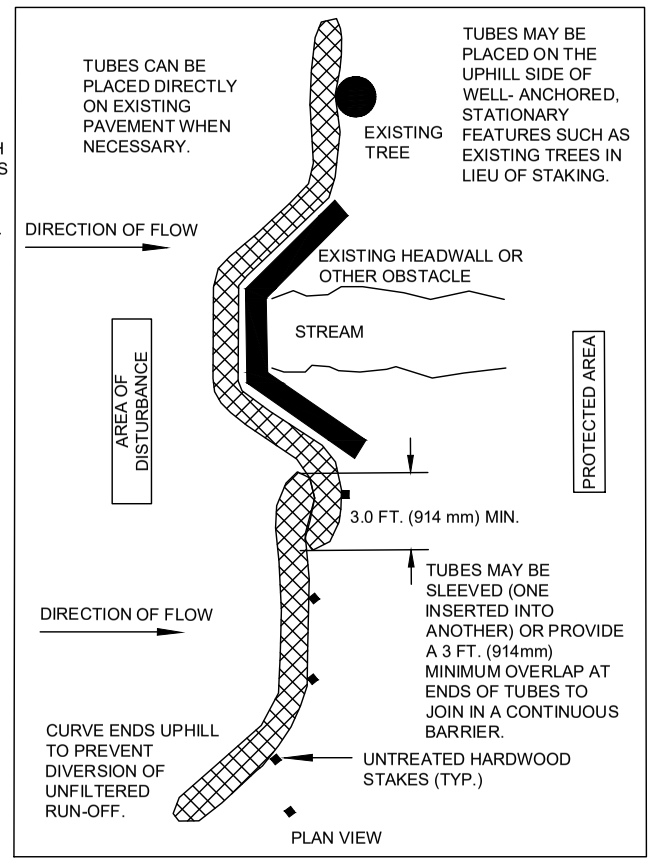



## COMPOST AND SEASONALLY FLOODED SEED MIX OVER STONE
NOT TO SCALE




GENERAL NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.




## TYPICAL COMPOST FILTER TUBE DETAIL
NOT TO SCALE

EROSION AND SEDIMENT CONTROLS

1. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING THE EROSION AND SEDIMENT DURING THE CONSTRUCTION PROCESS. SITE SPECIFIC CONDITIONS MAY REQUIRE MODIFICATIONS IN THE FIELD, BUT THE CONTRACTOR MUST ENSURE THAT THE CHANGES MEET THE MINIMUM REQUIREMENTS OF THIS PLAN AND ARE APPROVED BY THE ENGINEER.
2. IN ORDER TO MINIMIZE EROSION AND SEDIMENT RUNOFF FROM THE SITE, THE CONTRACTOR SHALL MAINTAIN EXISTING VEGETATION WHERE POSSIBLE AND STABILIZE THE DISTURBED PORTIONS OF THE SITE AS QUICKLY AS POSSIBLE. THIS MAY INCLUDE PHASING THE PROJECT AS NEEDED TO MINIMIZE THE SIZE OF THE DISTURBED AREAS ON THE SITE. THE COST OF PHASING THE PROJECT IS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR MUST ALSO ANTICIPATE INCREASED RUNOFF FROM STEEPER SLOPES AND DURING HIGH GROUNDWATER CONDITIONS. THIS MAY OCCUR DURING THE WET SEASON (TYPICALLY MARCH THROUGH APRIL) OR AFTER SIGNIFICANT PRECIPITATION EVENTS.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF SILT FENCES, DRAINAGE SWALES, EARTH DIKES, TEMPORARY SETTLING BASINS, CHECK DAMS AND TEMPORARY SEDIMENT BASINS. THESE PRACTICES INCLUDE DIVERTING FLOWS FROM EXPOSED SOILS, LIMITING RUNOFF AND LIMITING THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE TO THE MAXIMUM EXTENT PRACTICABLE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
5. ALL DISTURBED SURFACES SHALL BE STABILIZED WITHIN 14 DAYS AFTER CONSTRUCTION IN ANY PORTION OF THE SITE THAT HAS BEEN COMPLETED OR WHERE CONSTRUCTION HAS TEMPORARILY CEASED.
6. THE CONTRACTOR SHALL, AT ALL TIMES, HAVE A STOCKPILE OF COMPOST FILTER TUBES AND SILT FENCE ADEQUATE TO REINFORCE/REPLACE EROSION AND SEDIMENT CONTROL AS NEEDED.
7. IF REQUIRED, THE CONTRACTOR SHALL OBTAIN ALL PERMITS ASSOCIATED WITH DEWATERING ACTIVITIES AT NO ADDITIONAL COST TO THE TOWN.

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | ### | 391 |
| PROJECT FILE NO. | | 608051 | |

## DRAINAGE & UTILITY DETAILS - 3

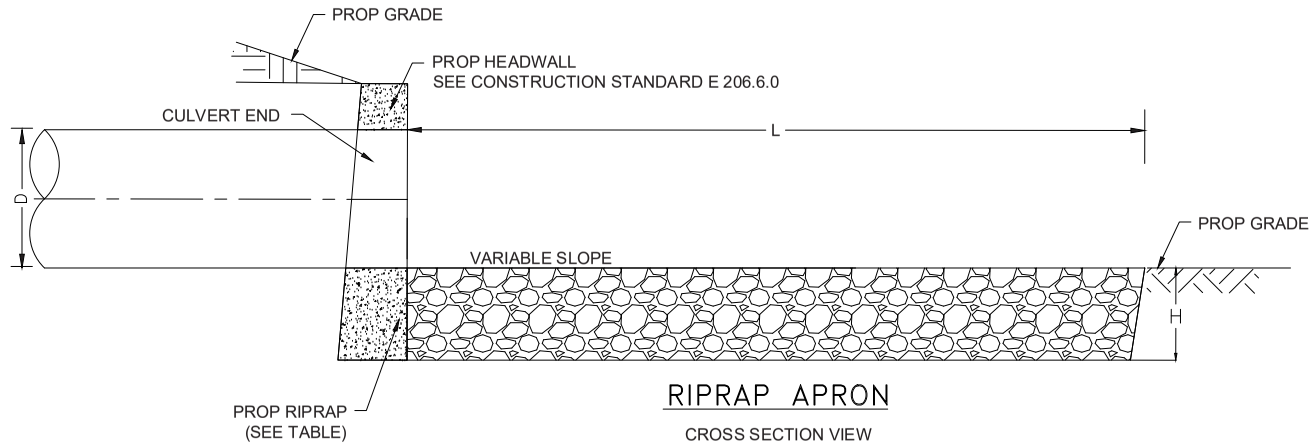
| CULVERT SIZE D (INCHES) | LENGTH OF APRON L (FEET) | DEPTH OF APRON H (INCHES) | MASSDOT RIPRAP SIZE |
|---|---|---|---|
| 30 | 12.5 | 24 | M2.02.2 |
| 36 | 16 | 24 | M2.02.2 |
| 42 | 21 | 30 | M2.02.1 |
| 48 | 24 | 30 | M2.02.1 |

SOURCE:

FHWA STANDARD DRAWING C251-50

NOTES:

FOR PIPES 24" DIA. AND LESS, USE STONE PIPE ENDS
MASSDOT STANDARD DETAIL E 206.7.0

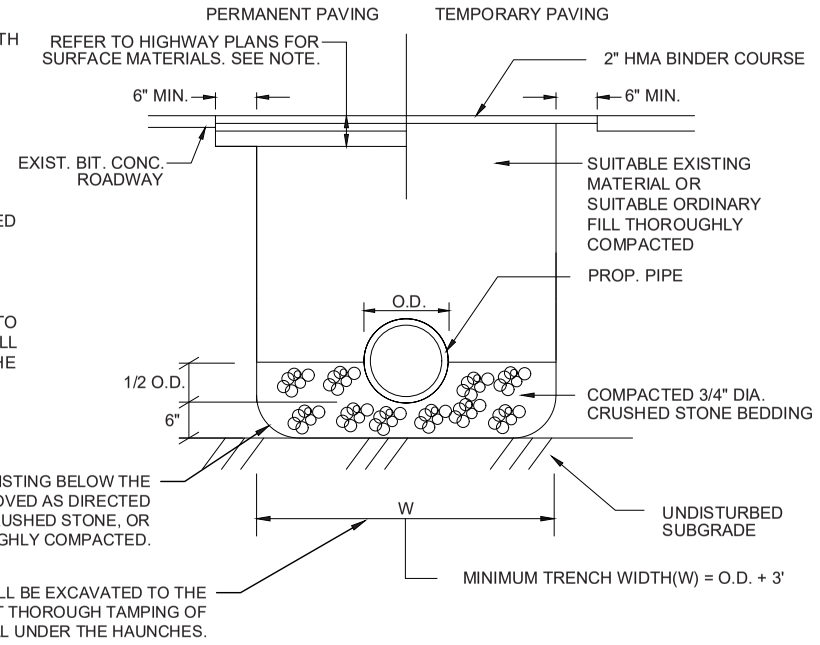



RIPRAP APRON

CROSS SECTION VIEW
NOT TO SCALE

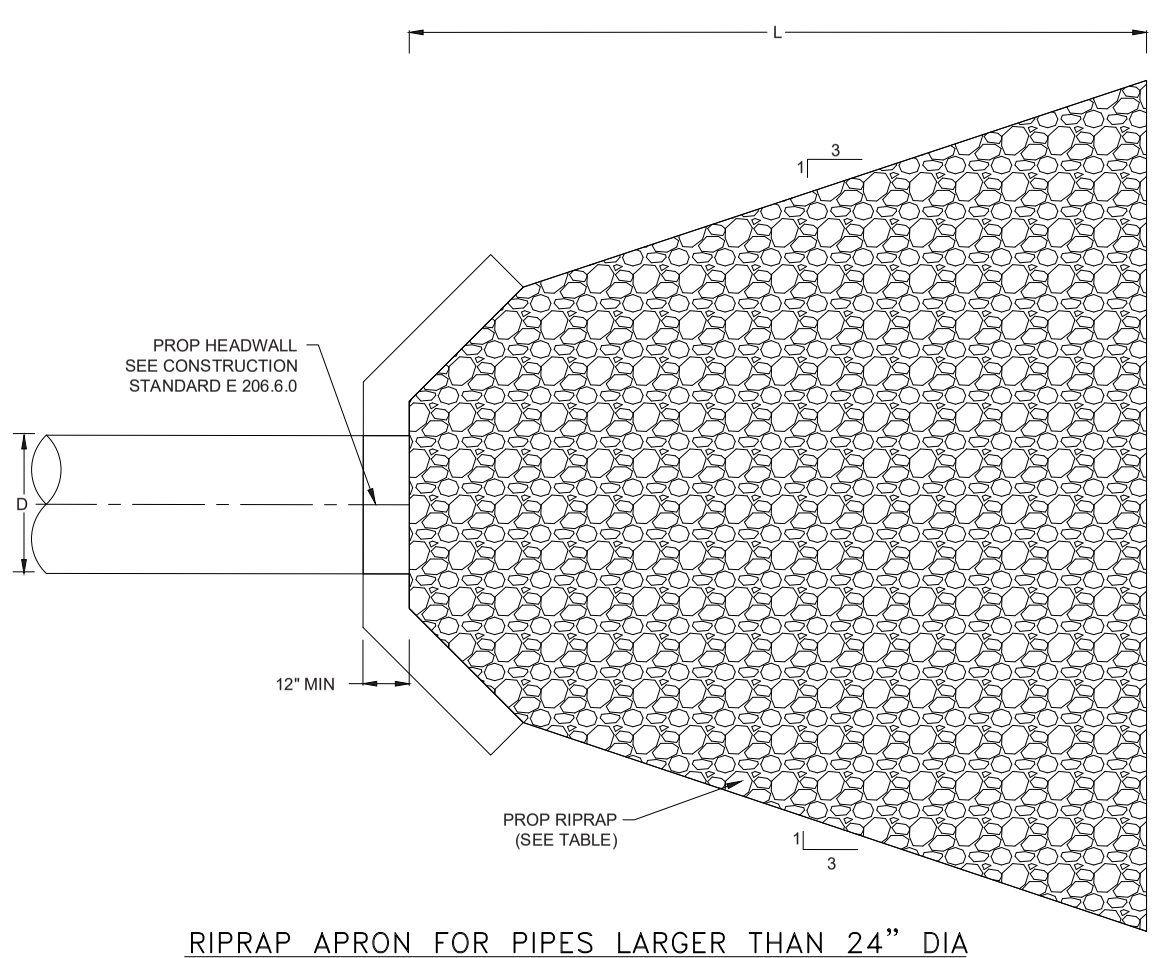
NOTE:

1. PERMANENT PAVING TO BE USED IN ALL AREAS OF MILL AND OVERLAY. MATERIALS SHALL MATCH CORRESPONDING FULL DEPTH SECTION. REFER TO TYPICAL ROADWAY SECTIONS.
2. HMA FOR PATCHING TO BE USED IN AREAS OF FUTURE FULL DEPTH CONSTRUCTION.
3. EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER, OR SATISFACTORY BORROW SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6 INCHES IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2 FEET OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3 INCHES - EXCEPT MATERIAL USED TO BACKFILL CORRUGATED PLASTIC PIPE SHALL CONSIST OF GRAVEL BORROW MEETING THE REQUIREMENTS OF M1.03.0: GRAVEL BORROW TYPE D, TO A DEPTH OF 2 FEET OVER THE TOP OF PIPE.




TYPICAL PIPE TRENCH

NOT TO SCALE




RIPRAP APRON FOR PIPES LARGER THAN 24" DIA

PLAN VIEW
NOT TO SCALE



A00831 - 21
608051 UT02(DRAINAGE-DETAILS).DWG Plotted on: 20-Mar-2025 5:38 PM
Proposal No. 608051 - 132406

LEGEND

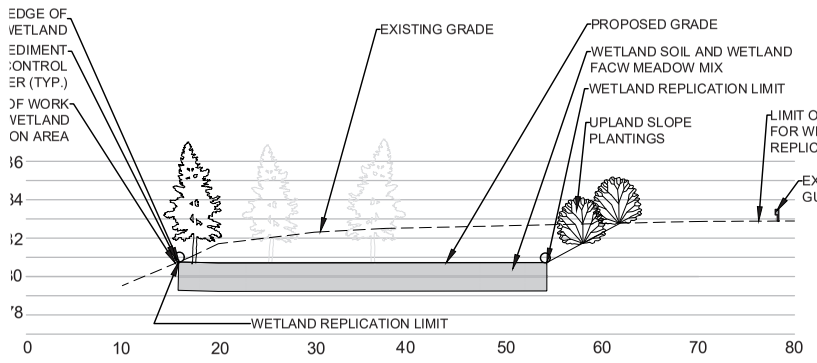
- LIMIT OF WORK
- SEDIMENT CONTROL BARRIER
- 595 — PROPOSED CONTOUR
- 595 — EXISTING CONTOUR
- 124.694 — PROPOSED SPOT GRADE
- 124.694 — EXISTING SPOT GRADE
- 4" LOAM AND COMPOST BLANKET & SHORT GRASSLAND MIX
- WETLAND SOIL AND WETLAND FACW MEADOW MIX
- COMPOST BLANKET & PART SHADE ROADSIDE MIX
- PROPOSED SHRUB
- PROPOSED TREE
- PROPOSED SHRUB WITHIN WETLAND REPLICATION
- PROPOSED TREE WITHIN WETLAND REPLICATION

FACW MEADOW MIX = 4,400 S.F.

NATIVE SHORT GRASSLAND MIX = 5,807 S.F.

NOTES:

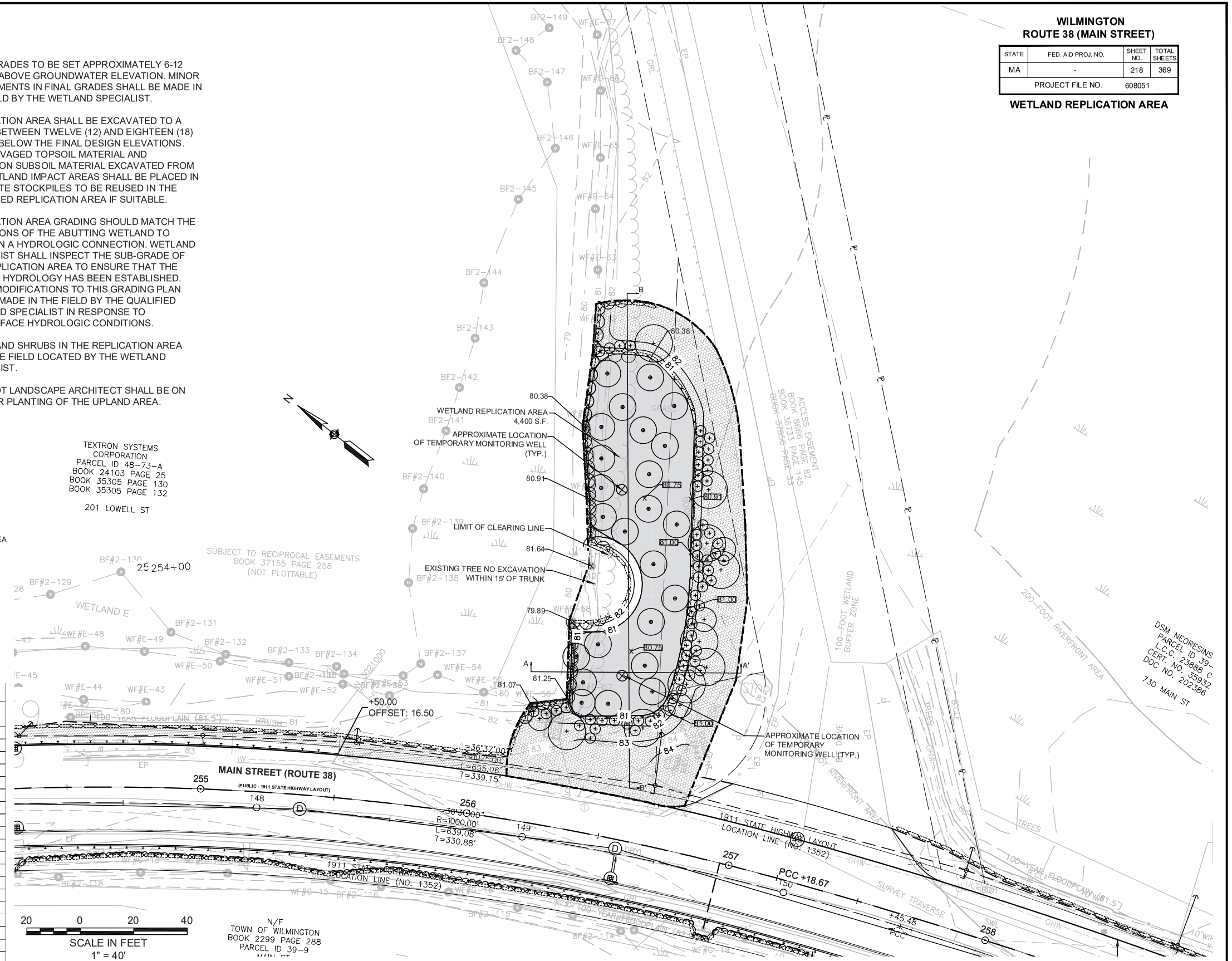
1. FINAL GRADES TO BE SET APPROXIMATELY 6-12 INCHES ABOVE GROUNDWATER ELEVATION. MINOR ADJUSTMENTS IN FINAL GRADES SHALL BE MADE IN THE FIELD BY THE WETLAND SPECIALIST.
2. REPLICATION AREA SHALL BE EXCAVATED TO A DEPTH BETWEEN TWELVE (12) AND EIGHTEEN (18) INCHES BELOW THE FINAL DESIGN ELEVATIONS. THE SALVAGED TOPSOIL MATERIAL AND B-HORIZON SUBSOIL MATERIAL EXCAVATED FROM THE WETLAND IMPACT AREAS SHALL BE PLACED IN SEPARATE STOCKPILES TO BE REUSED IN THE PROPOSED REPLICATION AREA IF SUITABLE.
3. REPLICATION AREA GRADING SHOULD MATCH THE ELEVATIONS OF THE ABUTTING WETLAND TO MAINTAIN A HYDROLOGIC CONNECTION. WETLAND SPECIALIST SHALL INSPECT THE SUB-GRADE OF THE REPLICATION AREA TO ENSURE THAT THE PROPER HYDROLOGY HAS BEEN ESTABLISHED. MINOR MODIFICATIONS TO THIS GRADING PLAN MAY BE MADE IN THE FIELD BY THE QUALIFIED WETLAND SPECIALIST IN RESPONSE TO SUBSURFACE HYDROLOGIC CONDITIONS.
4. TREES AND SHRUBS IN THE REPLICATION AREA SHALL BE FIELD LOCATED BY THE WETLAND SPECIALIST.
5. MASSDOT LANDSCAPE ARCHITECT SHALL BE ON SITE FOR PLANTING OF THE UPLAND AREA.

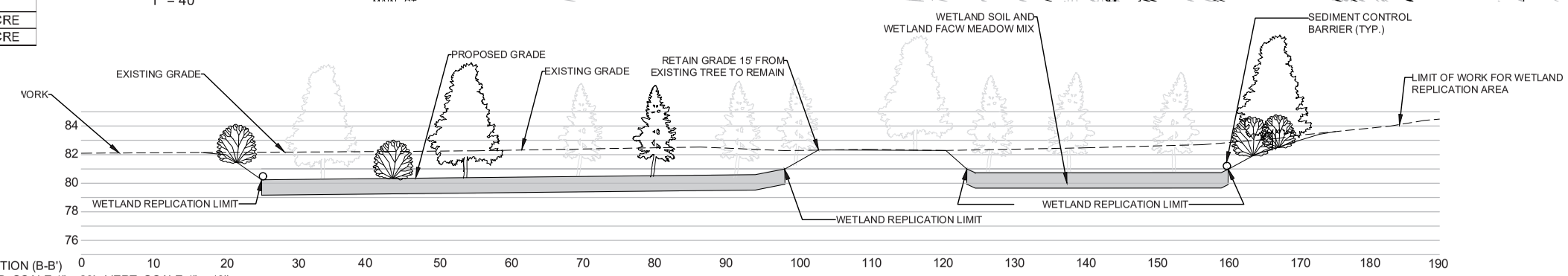



SECTION (A-A')
(HOR. SCALE 1" = 20' , VERT. SCALE 1" = 10')

PLANT LIST - WETLAND REPLICATION AND ASSOCIATED UPLAND

| KEY | QTY | WETLAND STATUS | BOTANICAL NAME | COMMON NAME | PLANT SIZE |
|---|---|---|---|---|---|
| **DECIDUOUS TREES IN UPLAND AREA** | | | | | |
| AC | 4 | FAC | AMELANCHIER CANADENSIS | SERVICEBERRY | 4-5' HT |
| LT | 4 | FACU | LIRODENDRON TULIPIFERA | TULIP TREE | 1-1.5" CAL. |
| QC | 5 | FACU | QUERCUS COCCINEA | SCARLET OAK | 1-1.5" CAL. |
| **DECIDUOUS TREES IN REPLICATION AREA- 24 TOTAL** | | | | | |
| AR | 2 | FAC | ACER RUBRUM | RED MAPLE | 4-6' HT |
| AS | 10 | FACW | ACER SACCHARINUM | SILVER MAPLE | 4-6' HT |
| QB | 4 | FACW | QUERCUS BICOLOR | SWAMP WHITE OAK | 4-6' HT |
| SN | 8 | OBL | SALIX NIGRA | BLACK WILLOW | 4-6' HT |
| **DECIDUOUS SHRUBS IN UPLAND AREA** | | | | | |
| CP | 15 | UPL | COMPTONIA PEREGRINA | SWEETFERN | 1 GALLON |
| CR | 15 | FAC | CORNUS RACEMOSA | GRAY TWIG DOGWOOD | 2-3' HT |
| RA | 15 | UPL | RHUS AROMATICA (NO CULTIVARS) | FRAGRANT SUMAC | 2-3' HT |
| VD | 15 | FAC | VIBURNUM DENTATUM | ARROWWOOD VIBURNUM | 2-3' HT |
| **HERBACEOUS** | | | | | |
| | - | - | WETLAND FACW MEADOW MIX | | 20 LBS PER ACRE |
| | - | - | SHORT GRASSLAND MIX | | 20 LBS PER ACRE |




SECTION (B-B')
(HOR. SCALE 1" = 20' , VERT. SCALE 1" = 10')

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 218 | 369 |
| PROJECT FILE NO. | 608051 | | |

**WETLAND REPLICATION AREA**

ACOE PLANS SHEET 15 OF 27

A00831 - 22

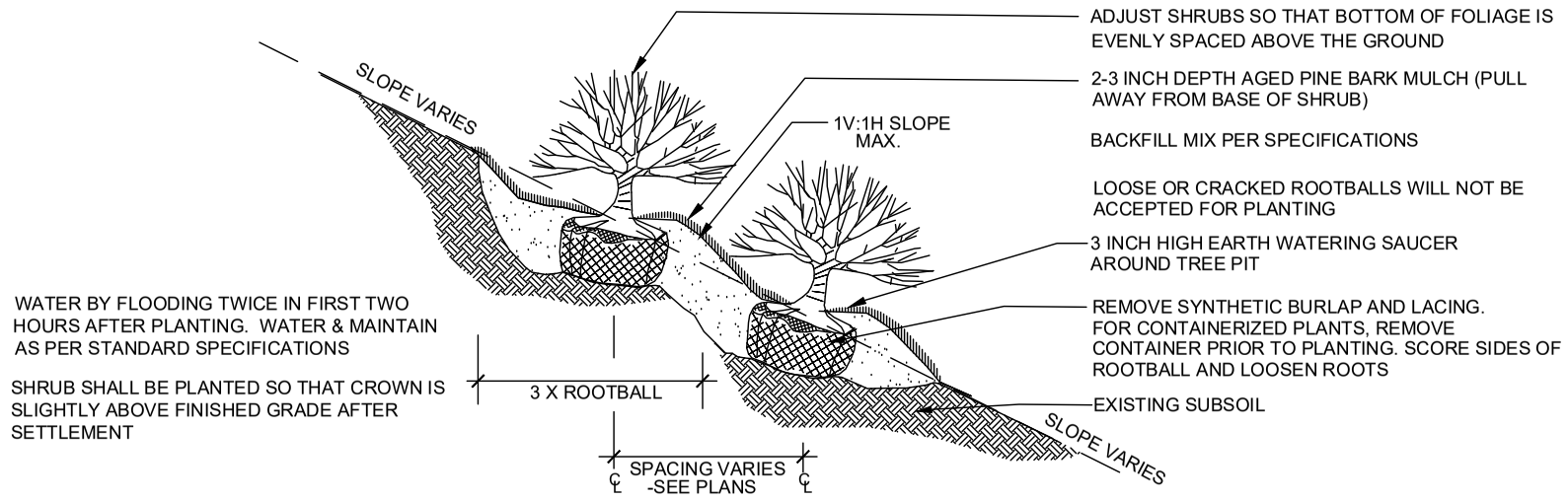
Proposal No. 608051 - 132406

608051_EV(P-REPLICATION).DWG Plotted on 12-Mar-2025 3:30 PM

608051_HD11(CONSTRUCTION DETAILS).DWG Plotted on 12-Mar-2025 3:30 PM

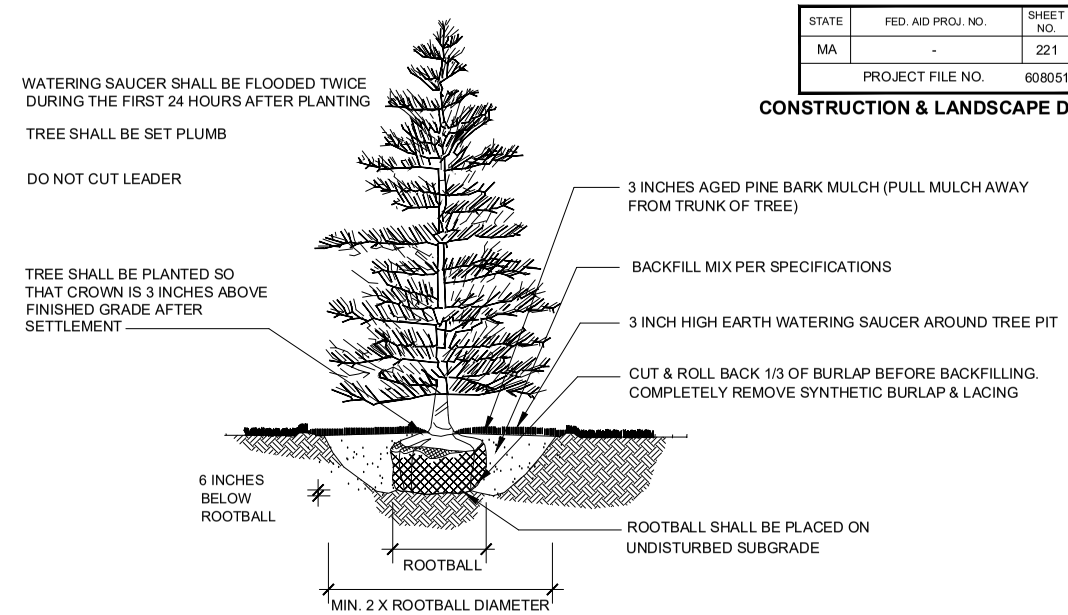
Proposal No. 608051 - 132406

A00831 - 23



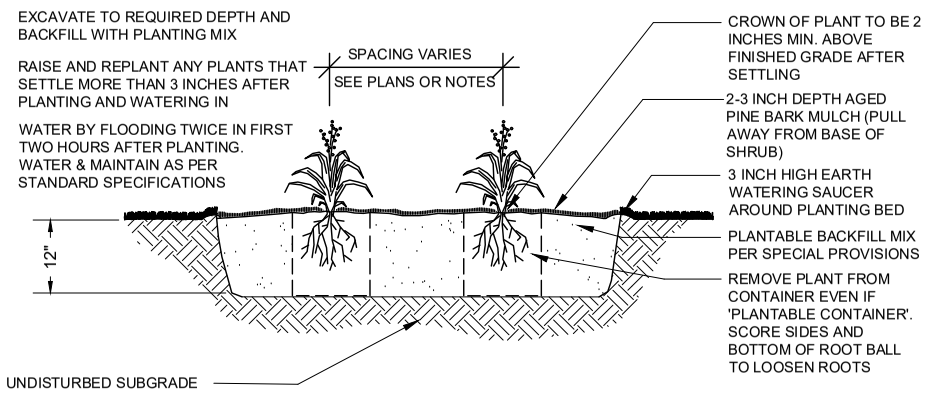

## 1 CONTAINERIZED SHRUB PLANTING (SLOPE) DETAIL

NOT TO SCALE



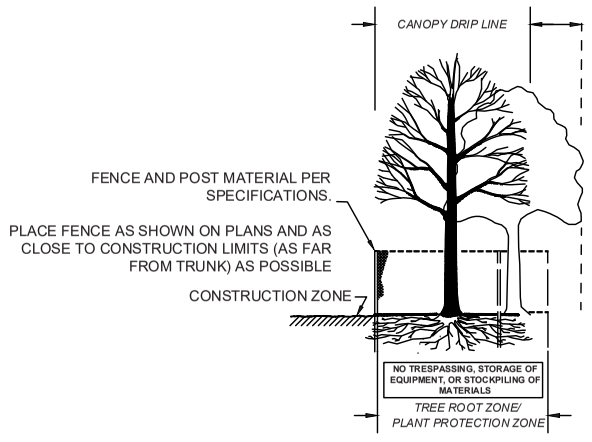

## 2 EVERGREEN TREE PLANTING

NOT TO SCALE

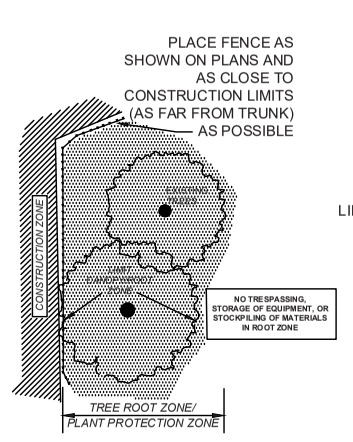



## 3 ORNAMENTAL GRASS PLANTING

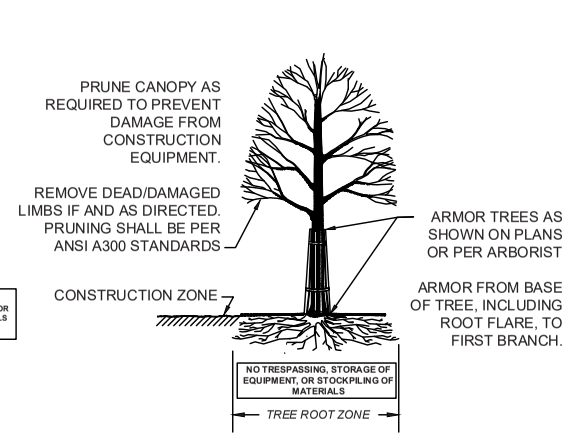
NOT TO SCALE




*SECTION - FENCE PROTECTION OF ROOT ZONE*



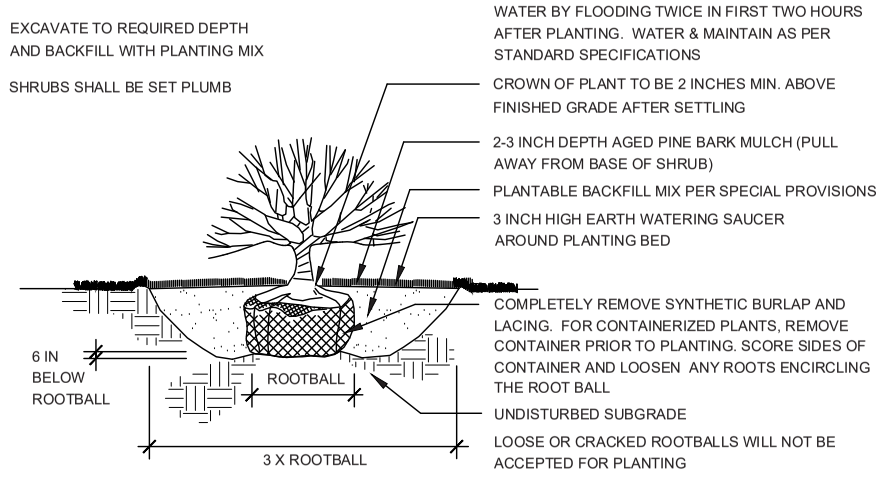

*PLAN VIEW - FENCE PROTECTION OF ROOT ZONE*




*SECTION - TRUNK ARMORING & PRUNING*

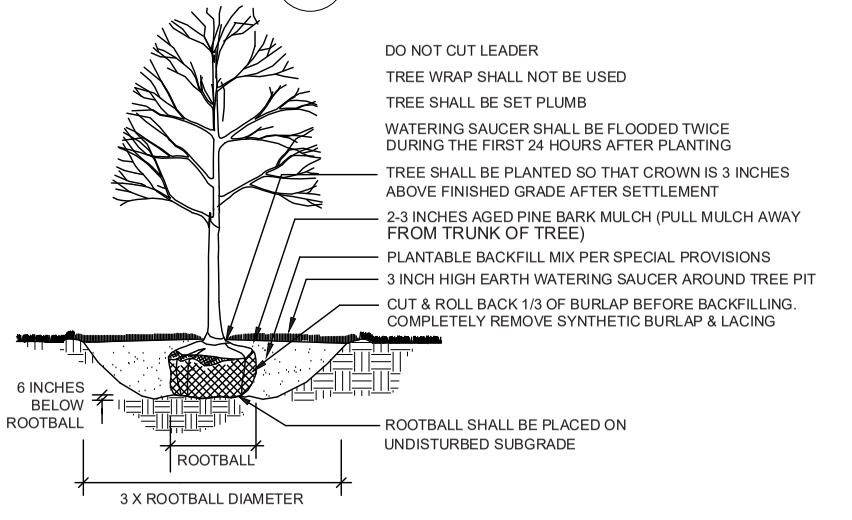
## 4 TREE PROTECTION DETAILS

NOT TO SCALE



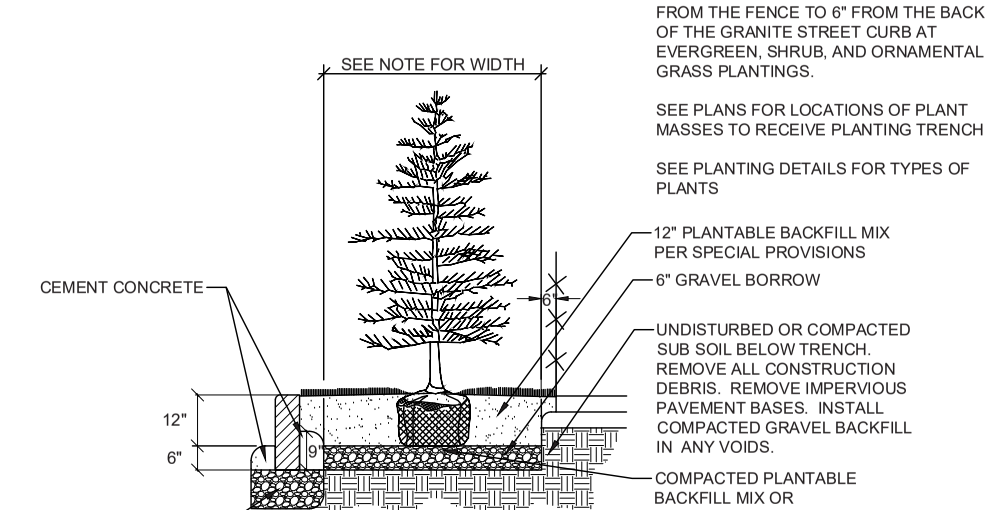

## 5 SHRUB PLANTING

NOT TO SCALE




## 6 TREE PLANTING

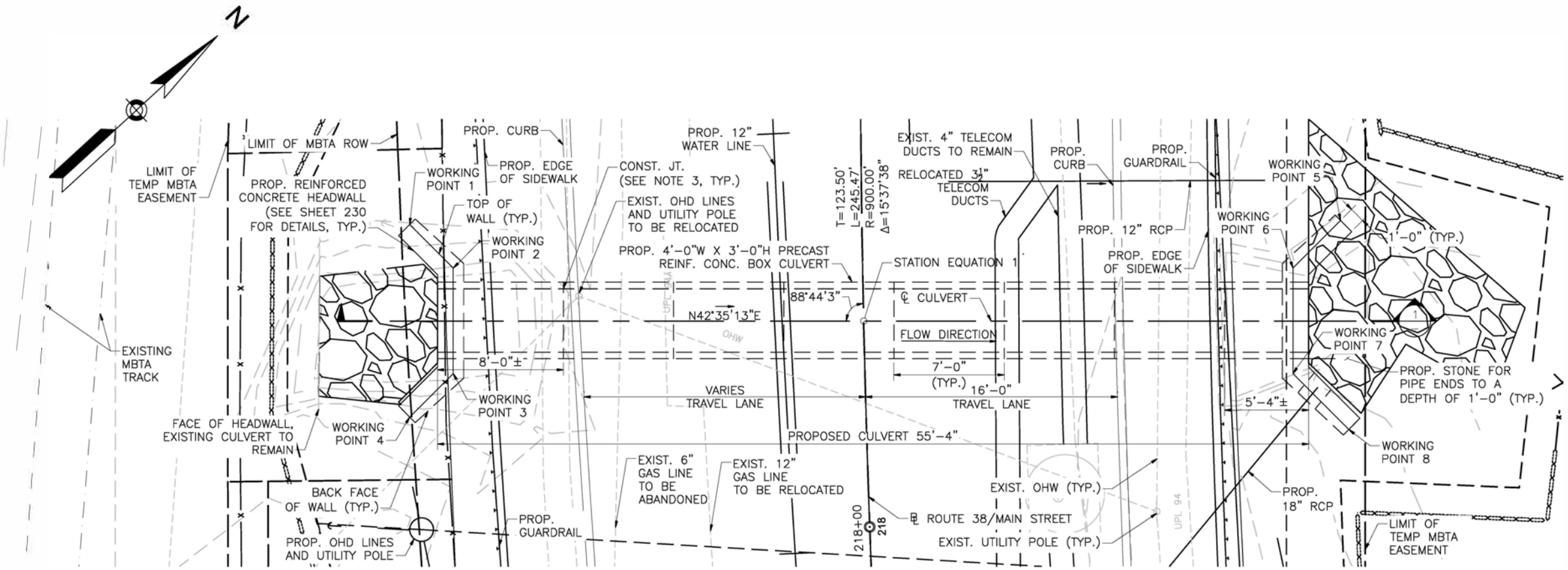
NOT TO SCALE




## 7 PLANTING TRENCH

NOT TO SCALE

Plotted on 22-May-2025 9:13 AM
6080051_BR01.DWG
Proposal No. 608051 - 132406
A00831 - 24




## SPECIAL DRAINAGE STRUCTURE NO. 1 PLAN

SCALE: 1" = 1'-0"

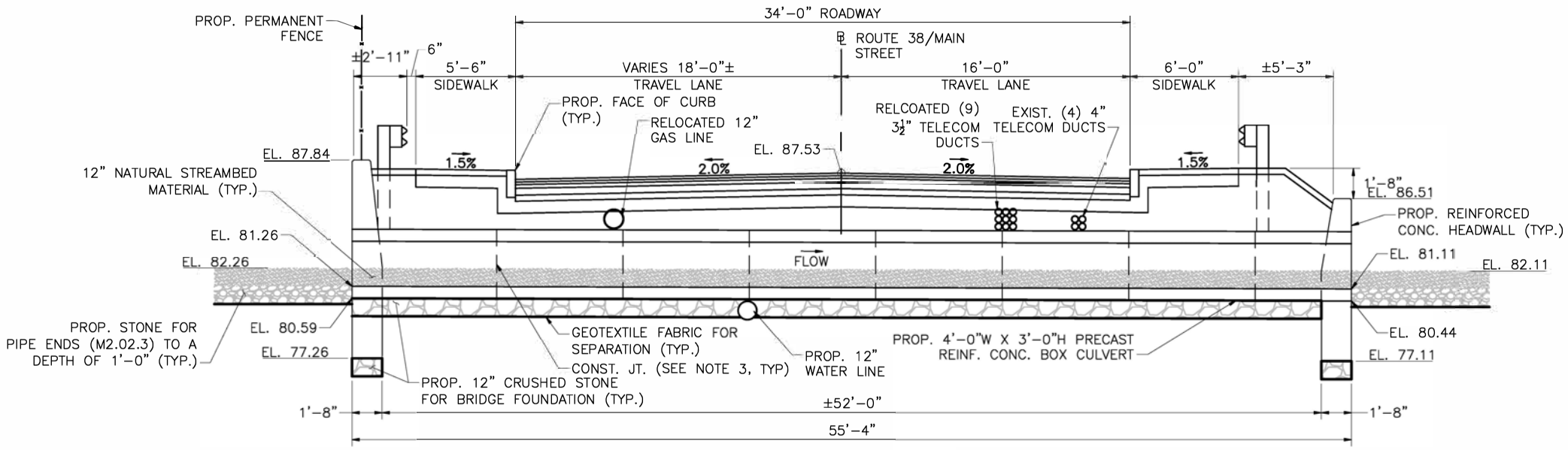
4 0 4 8
SCALE IN FEET

| WORKING POINT | STA. | OFFSET R, FT | NORTHING | EASTING |
|---|---|---|---|---|
| 1 | 217+80.39 | 28.72 | 3023401.72 | 744848.12 |
| 2 | 217+83.11 | 26.00 | 3023401.89 | 744852.03 |
| 3 | 217+89.59 | 26.15 | 3023397.38 | 744856.93 |
| 4 | 217+92.20 | 28.99 | 3023393.47 | 744857.10 |
| 5 | 217+81.02 | -30.42 | 3023445.45 | 744887.95 |
| 6 | 217+84.10 | -27.33 | 3023441.16 | 744888.13 |
| 7 | 217+90.97 | -27.18 | 3023436.66 | 744893.03 |
| 8 | 217+94.74 | -30.63 | 3023436.87 | 744898.06 |

STATION EQUATION 1: RT 38 CONSTRUCTION ℄ STA. 217+86.85 = CULVERT CENTERLINE

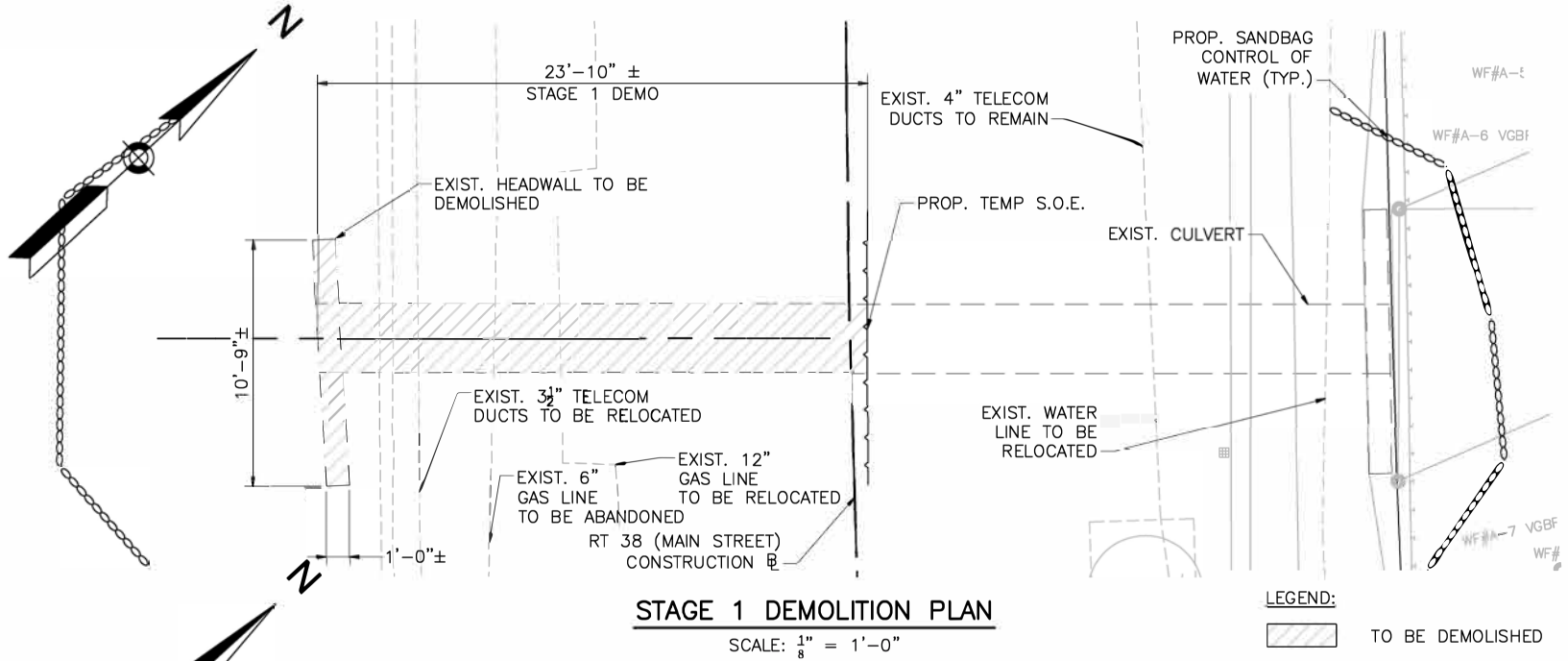
NOTES:

1. GUARDRAIL WILL SPAN OVER PROPOSED CULVERT SECTION.
2. SEE SHEETS 15 – 19 FOR TYPICAL APPROACH/ROADWAY CROSS SECTION AT CULVERT LOCATION.
3. PRECAST REINFORCED CONCRETE CULVERT CONSTRUCTION JOINT SPACING WILL VARY PER PRECASTER UP TO 7'-0" MAXIMUM SPACING.




## SECTION (DOWNSTATION) 1/–

SCALE: 1" = 1'-0"

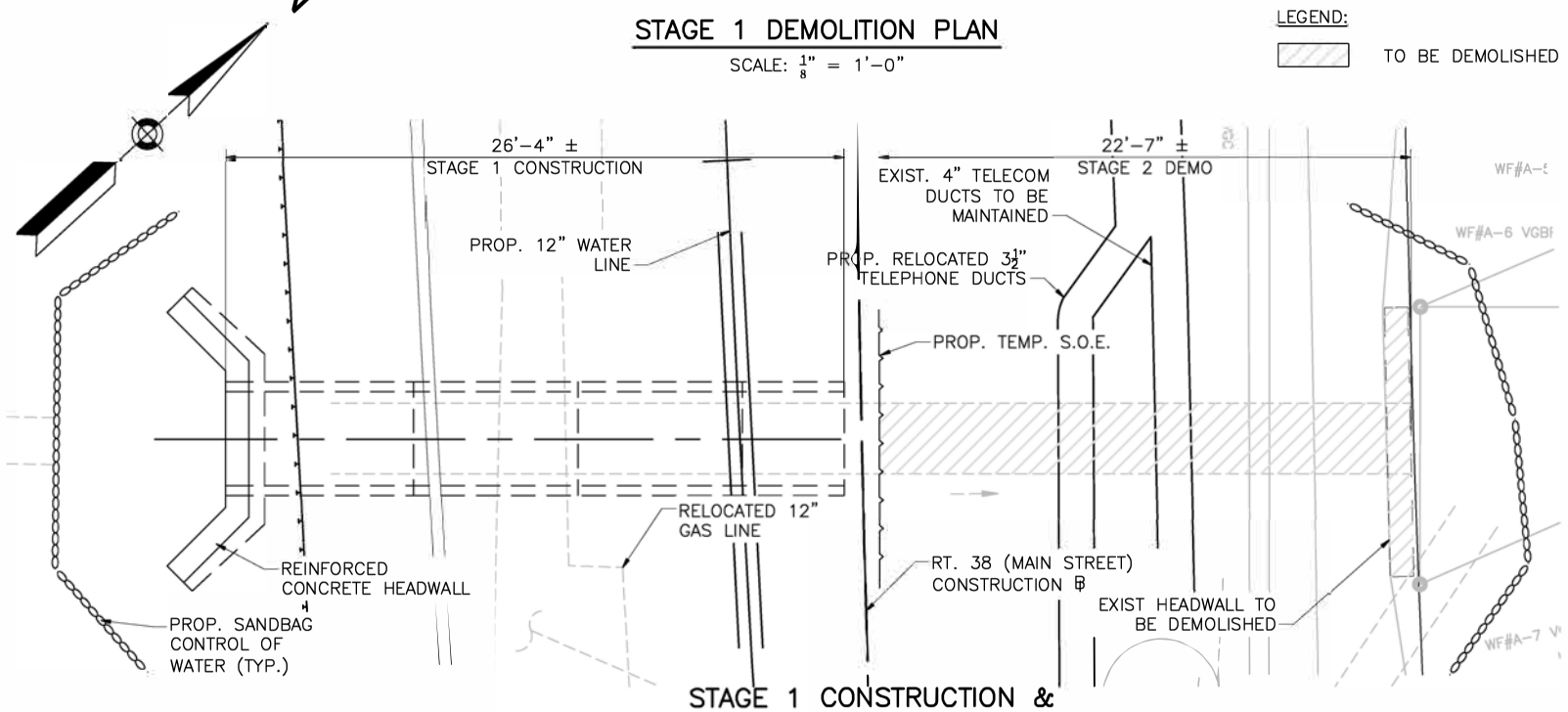



## STAGE 1 DEMOLITION PLAN

SCALE: $\frac{1}{8}$" = 1'-0"

LEGEND:

TO BE DEMOLISHED




## STAGE 1 CONSTRUCTION & STAGE 2 DEMOLITON PLAN

SCALE: $\frac{1}{8}$" = 1'-0"

4 0 4 8

SCALE IN FEET

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 229 | 391 |
| PROJECT FILE NO. | | 608051 | |

**CULVERT DEMOLITION PLAN**

### GENERAL STAGE CONSTRUCTION NOTES:

1. THE SUPPORT OF EXCAVATION IS DESIGNED AS A TEMPORARY STRUCTURE.
2. SURCHARGES AND STOCKPILES SHALL BE LIMITED TO 250 PSF.
3. LOCATE ALL UTILITIES, EXISTING, AND PROPOSED STRUCTURES PRIOR TO THE START OF WORK.
4. INSTALL SUPPORT OF EXCAVATION (S.O.E.) TO THE REQUIRED DEPTHS AS DESIGNED BY THE CONTRACTOR.
5. UNLESS OTHERWISE NOTED, DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.
6. VERIFY NEARBY STRUCTURES WILL NOT BE AFFECTED BY PROPOSED WORK.

### SUGGESTED SEQUENCE OF CONSTRUCTION:

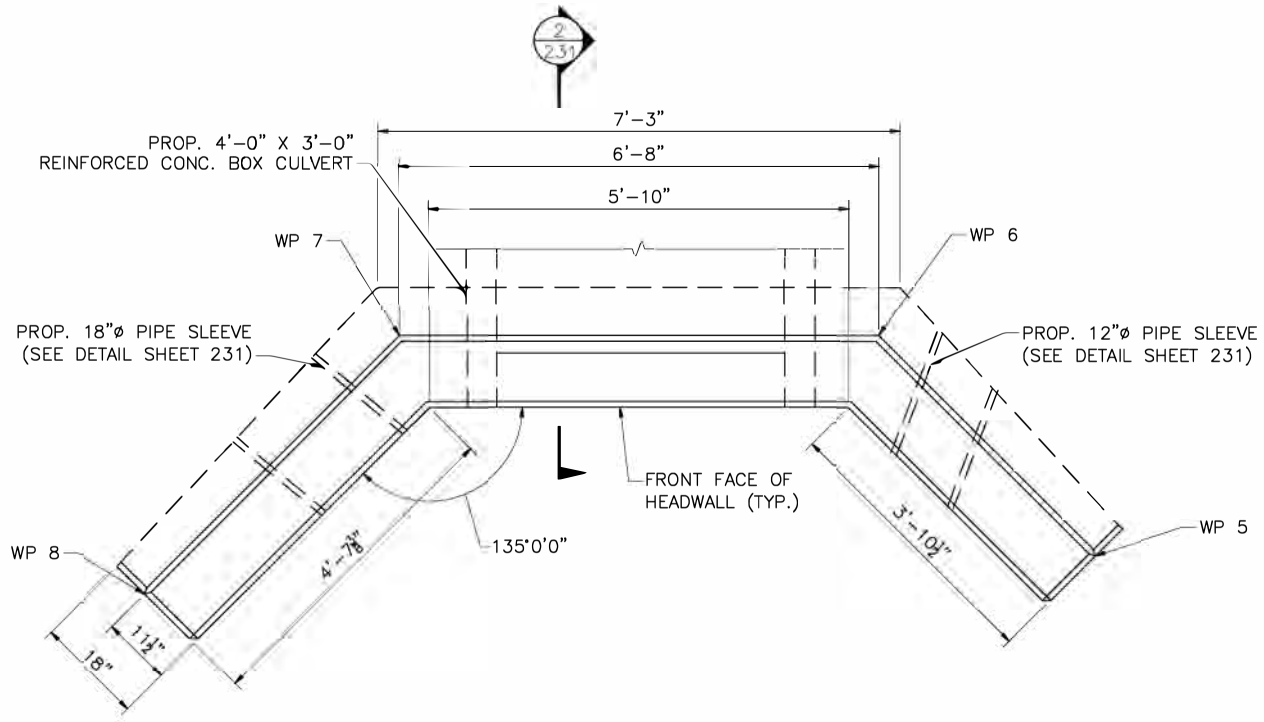
1. INSTALL SANDBAG CONTROL OF WATER AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE CULVERT. INSTALL S.O.E. LONGITUDINALLY ALONG CULVERT. S.O.E. SHALL BE PLACED TO MAINTAIN ON THE EXISTING CULVERT A MINIMUM OF AN 11'-0" LANE WITH 1'-0" SHOULDERS, LIMITED DEFLECTION BARRIER (TL-3) AND DEFLECTION SPACE, AND A 4'-0" SIDEWALK.
2. EXCAVATE AND REMOVE EXISTING CULVERT TO STAGE 1 LIMITS SHOWN.
3. INSTALL PROPOSED 12" WATER LINE AND RELOCATE EXISTING 12" GAS LINE TO PROPOSED LOCATIONS.
4. CONSTRUCT STAGE 1 PORTION OF PROPOSED CULVERT. PROPOSED CULVERT WIDTH SHALL ACCOMMODATE A MINIMUM OF AN 11'-0" LANE WITH 1'-0" SHOULDERS, LIMITED DEFLECTION BARRIER (TL-3) AND DEFLECTION SPACE, AND A 5'-6" SIDEWALK.
5. EXCAVATE AND REMOVE EXISTING CULVERT TO STAGE 2 LIMITS SHOWN.
6. REMOVE TEMPORARY S.O.E. REMOVAL OF S.O.E. MUST NOT RESULT IN SETTLEMENT OF ANY PROPOSED WORK. CONTRACTOR TO PROVIDE MEANS TO ENSURE SOIL SUPPORTING THE PROPOSED STAGE 1 ROADWAY IS RETAINED THROUGHOUT STAGE 2 DEMOLITION AND CONSTRUCTION.
7. CONSTRUCT STAGE 2 PORTION OF PROPOSED CULVERT. CONSTRUCT PROPOSED TELECOM DUCTS AND CONDUIT ABOVE STAGE 2 PORTION OF PROPOSED CULVERT.

Plotted on 22-May-2025 9:14 AM
6080051_BR03_RECOVER.DWG
Proposal No. 608051 - 132406
A00831 - 25

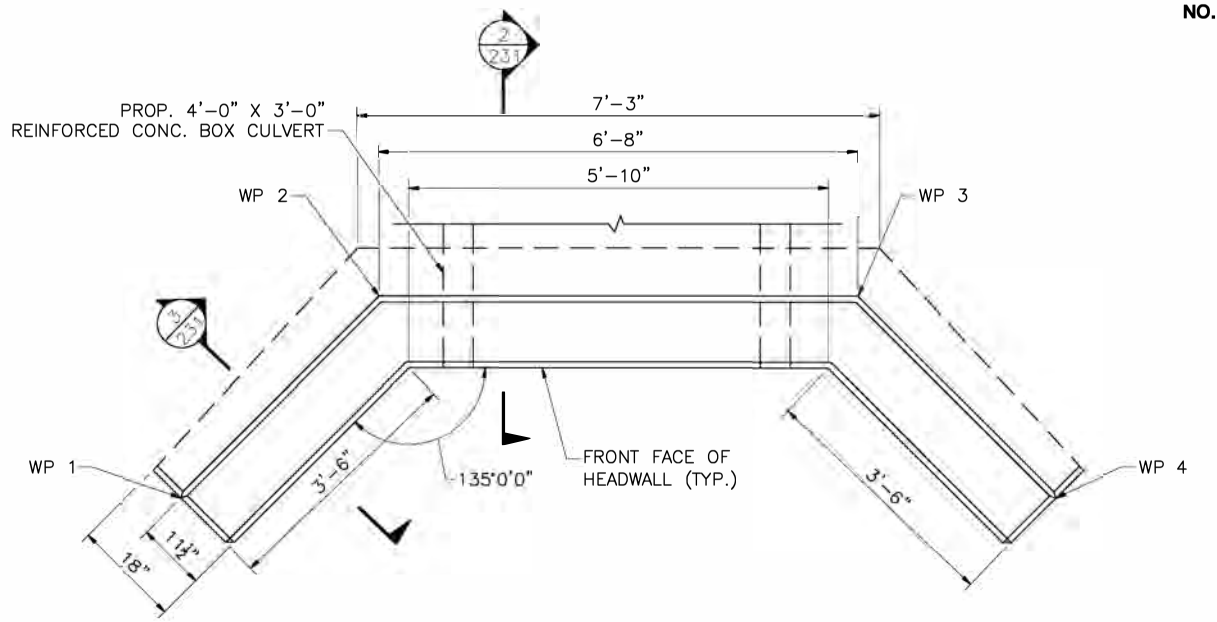
**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 230 | 391 |
| PROJECT FILE NO. | 608051 | | |

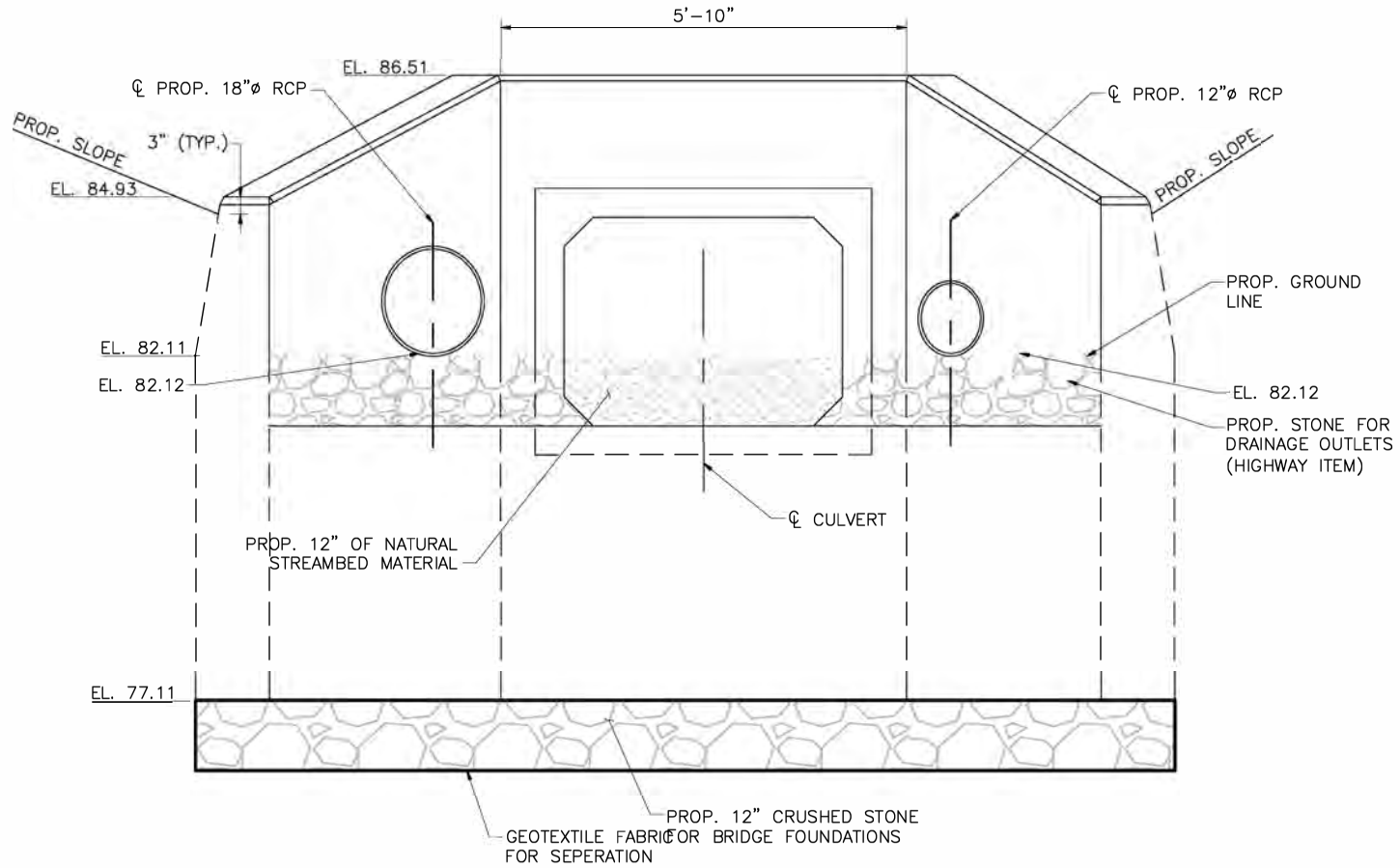
**SPECIAL DRAINAGE STRUCTURE NO. 1 DETAILS**



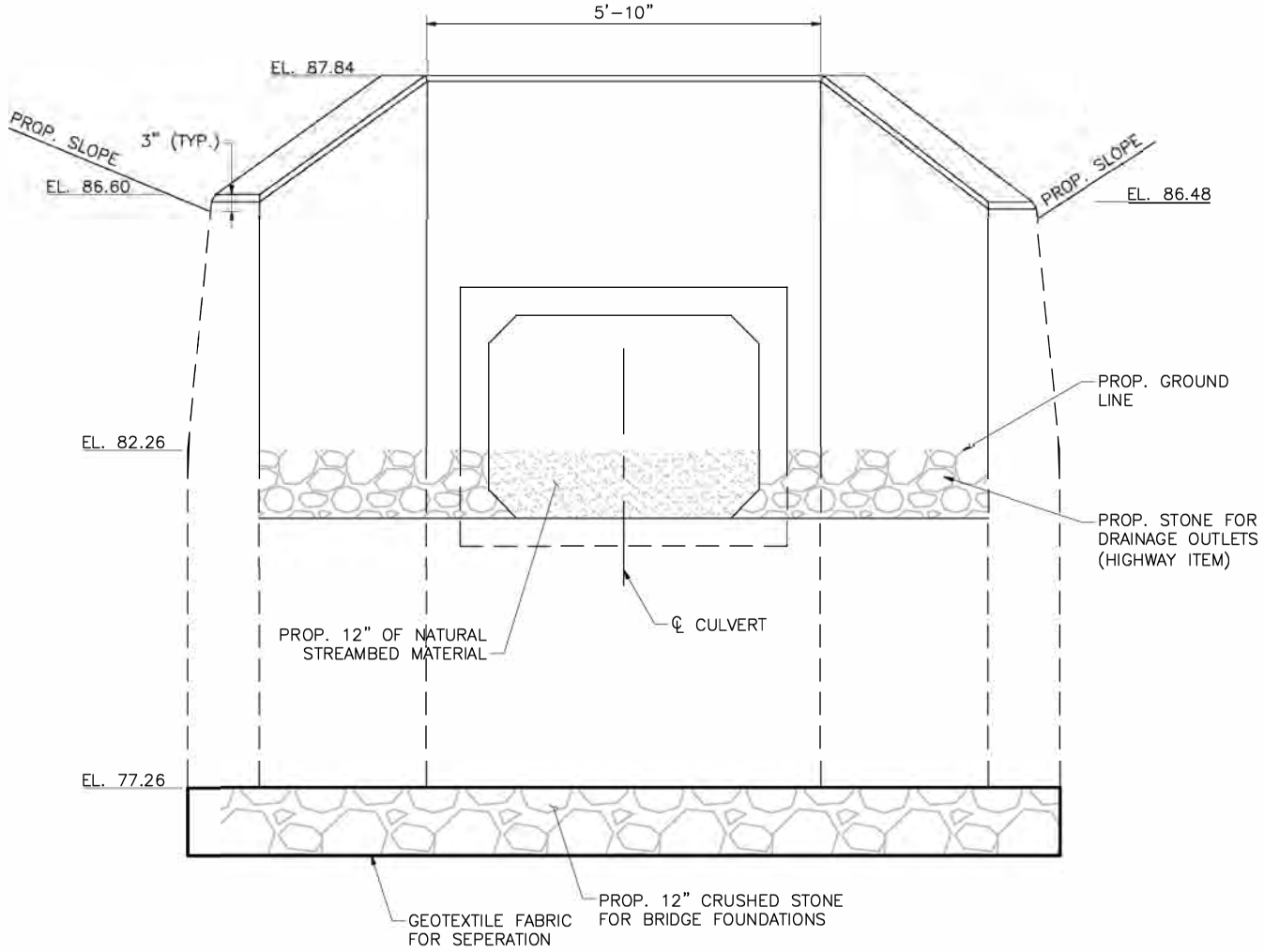

NORTH HEADWALL PLAN
SCALE: ⅜" = 1'-0"




SOUTH HEADWALL PLAN
SCALE: ⅜" = 1'-0"




NORTH HEADWALL ELEVATION
SCALE: ⅜" = 1'-0"



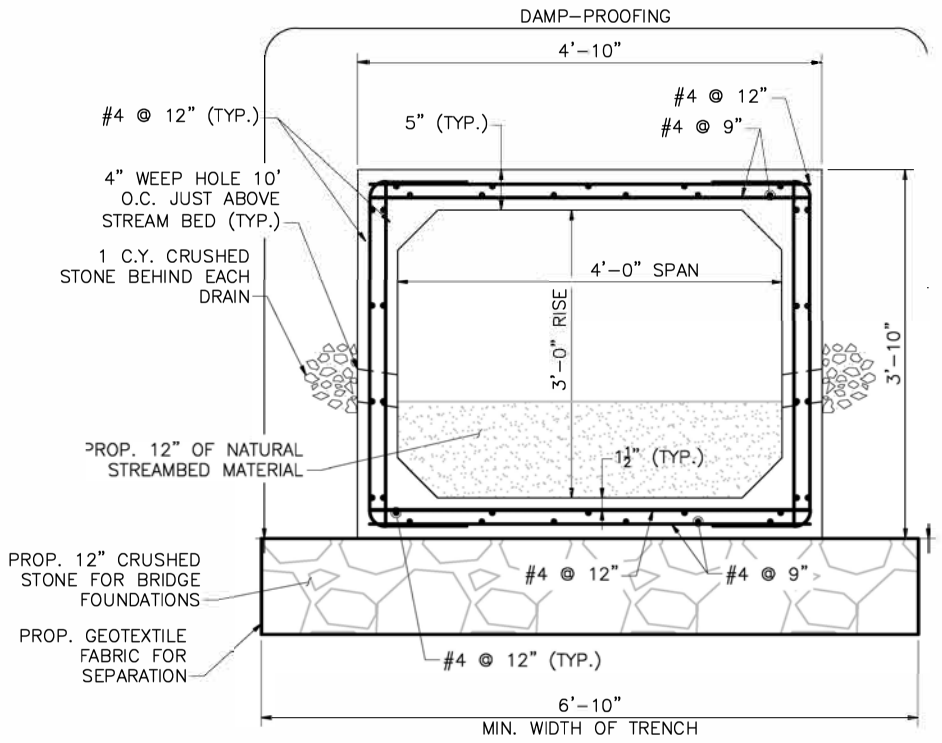

SOUTH HEADWALL ELEVATION
SCALE: ⅜" = 1'-0"

ACOE PLANS SHEET 19 OF 27


Plotted on 22-May-2025 9:14 AM
608051_BR02.DWG
Proposal No. 608051 - 132406
A0083126

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 231 | 391 |
| PROJECT FILE NO. | 608051 | | |

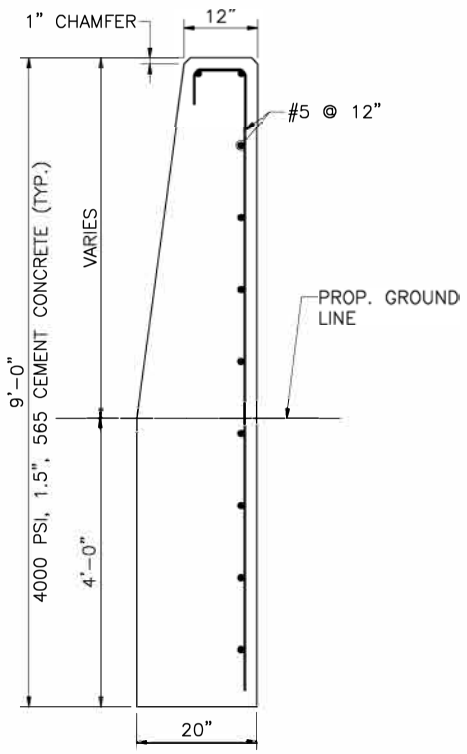
**SPECIAL DRAINAGE STRUCTURE NO. 1 DETAILS**



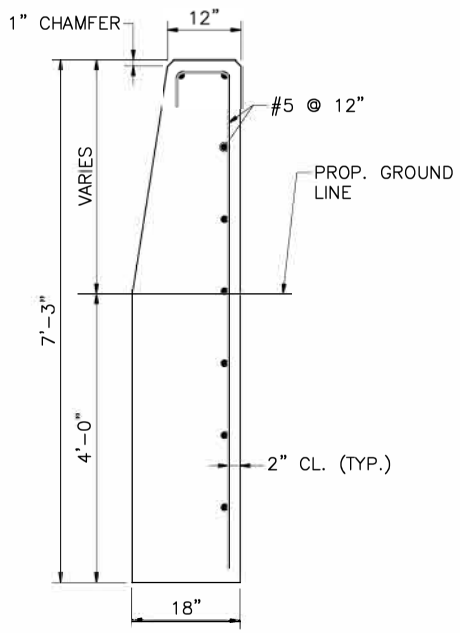

NOTES:
1. THE MAXIMUM FACTORED BEARING PRESSURE IS 2.02 KSF AS PER AASHTO LRFD BRIDGE SPECIFICATION STRENGTH 1 LOAD COMBINATION. FACTORED BEARING RESISTANCE IS 9.3 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE OF 20.7 AND A RESISTANCE FACTOR OF 0.45.
2. REFER TO GEOTECHNICAL REPORT, DATED OCTOBER 2020, PREPARED BY LAMSON ENGINEERING CORPORATION.
3. TRANSVERSE REINFORCING SHALL BE PLACED NORMAL TO THE ℄ OF THE CULVERT.
4. PRECAST CONCRETE CULVERT TO BE 5000 PSI, ¾ INCH, 686 HP CEMENT CONCRETE.

## CULVERT REINFORCEMENT
SCALE: 1" = 2'-0"

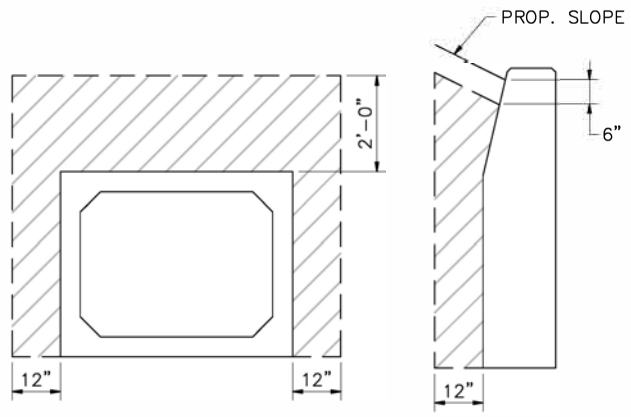
1 0 1 2
SCALE IN FEET




SECTION 2
SCALE: ⅜" = 1'-0"

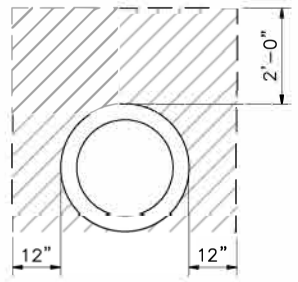



SECTION 3
SCALE: ⅜" = 1'-0"



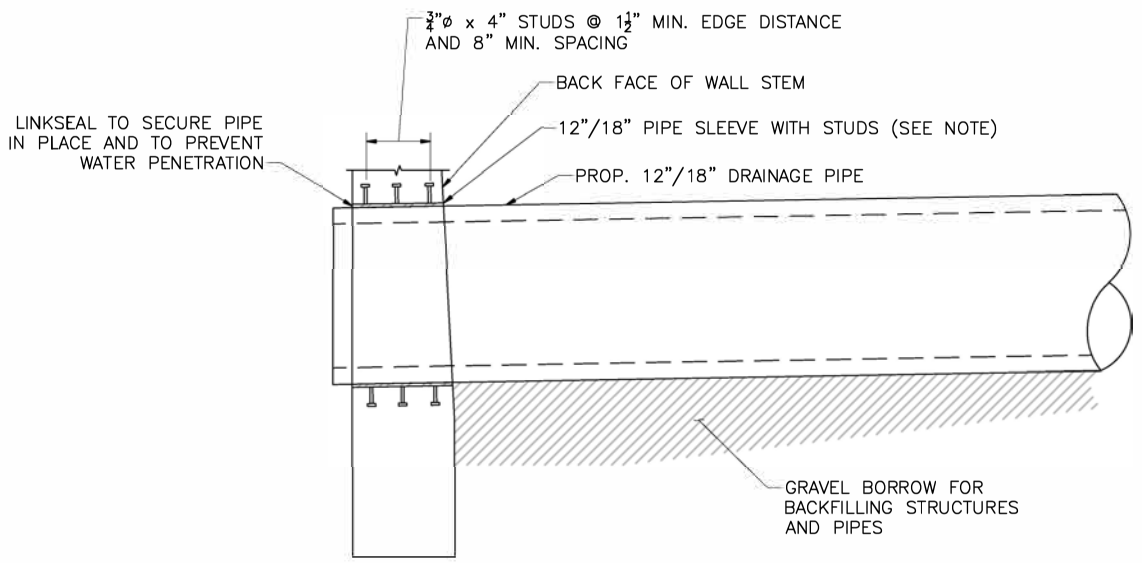

NOTE:
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

## LIMITS OF GRAVEL BORROW FOR BACK FILLING STRUCTURES AND PIPES
SCALE: ¼" = 1'-0"



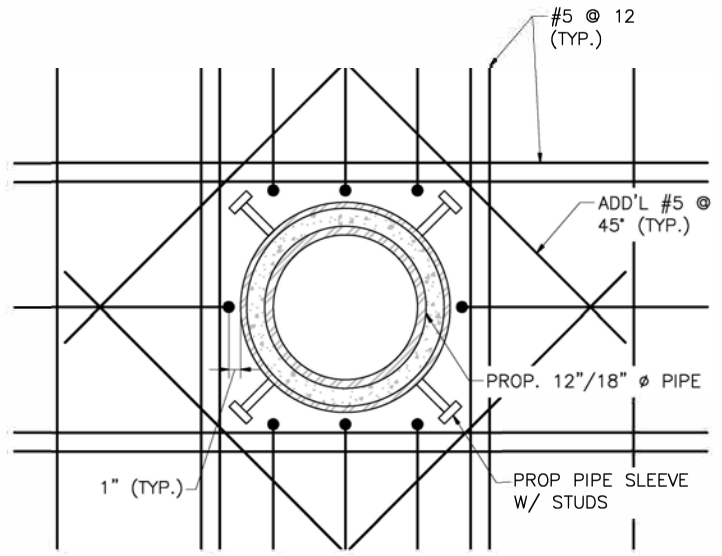

NOTE:
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.

## LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES
NOT TO SCALE




NOTE:
FOR CULVERT INVERT AND WALL ELEVATIONS, SEE SHEET 209.

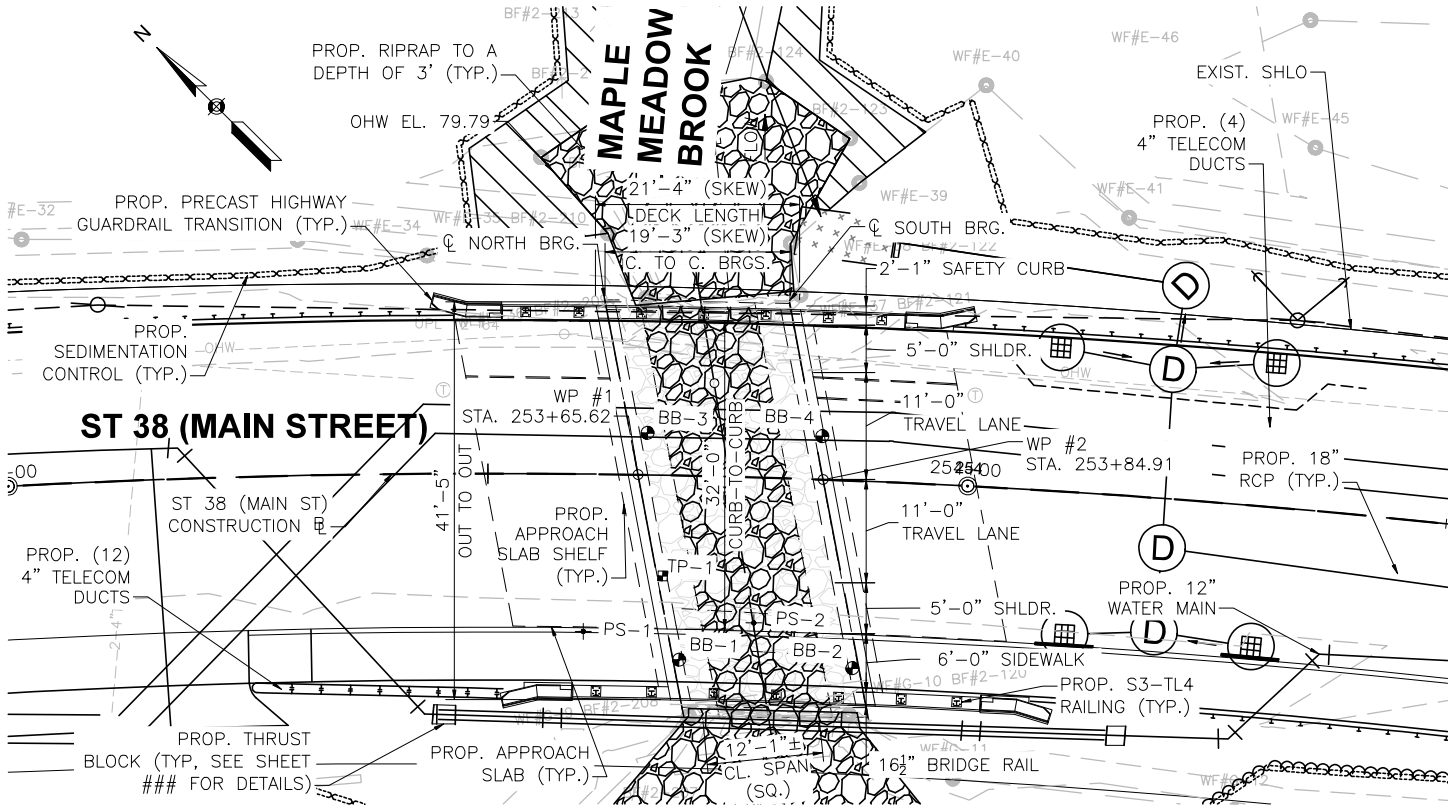
## TYPICAL CULVERT WALL PENETRATION DETAIL
SCALE: ¼" = 1'-0"




## PIPE OPENING DETAIL
SCALE: ¾" = 1'-0"

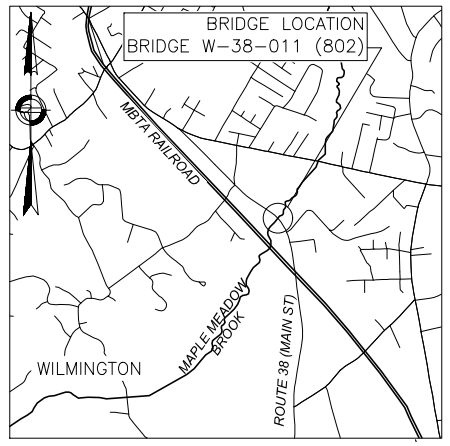


A00831-27
Proposal No. 608051 - 132406
608051_BR04.DWG Plotted on 22-May-2025 9:14 AM




KEY PLAN

SCALE: 1" = 20'




LOCUS

SCALE: 1" = 4000'

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | # | 210 | 399 |
| PROJECT FILE NO. | 608051 | | |

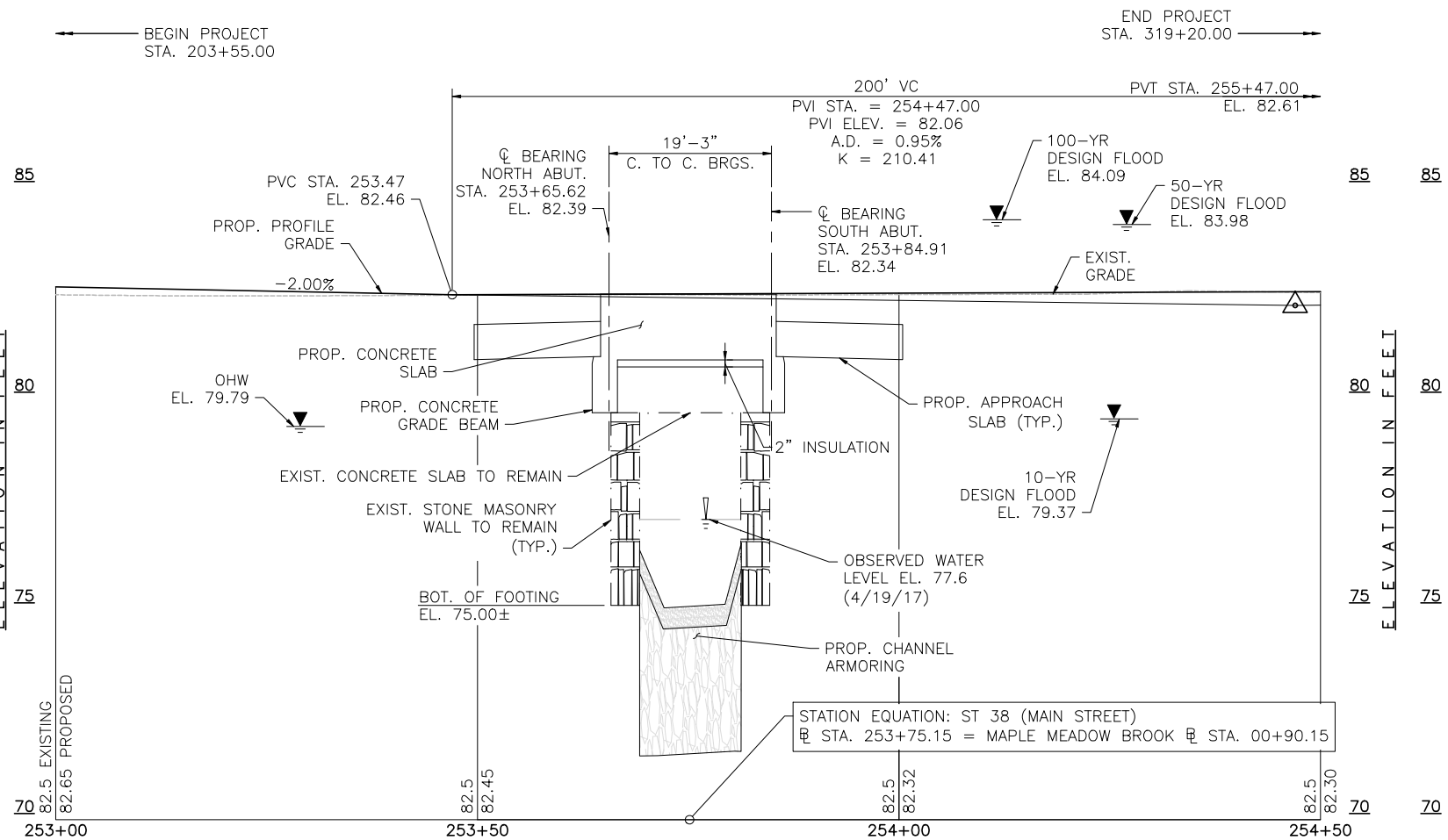
**TITLE SHEET**

## ESTIMATED QUANTITIES (NOT GUARANTEED)

| | |
|---|---|
| REINFORCED CONCRETE EXCAVATION | 5 CY |
| BRIDGE EXCAVATION | 60 CY |
| GRAVEL BORROW FOR BRIDGE FOUNDATION | 10 CY |
| GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES | 22 CY |
| CONTROLLED DENSITY FILL, NON-EXCAVATABLE | 5 CY |
| SUPERPAVE BRIDGE SURFACE COURSE | 10 TON |
| SUPERPAVE BRIDGE PROTECTIVE COURSE | 10 TON |
| CEMENT FOR POINTING | 4 BAG |
| MASONRY CLEANING | 1200 SF |
| TEMPORARY SUPPORT OF EXCAVATION, BRIDGE NO. W-38-011 | 45 SY |
| CONCRETE PENETRATING SEALER | 1 GAL |
| CLEAN AND RE-POINT MASONRY JOINTS | 207 LF |
| REPAIR OF VOIDS IN MASONRY | 4 EA |
| CONCRETE CRACK REPAIR, BRIDGE NO. W-38-011 | 55 LF |
| REPAIRS TO CONCRETE, BRIDGE NO. W-38-011 | 8 SF |
| CONTROL OF WATER, BRIDGE NO. W-38-011 | 1 LS |
| ALTERATION TO BRIDGE STRUCTURE, BRIDGE NO. W-38-011 | 1 LS |

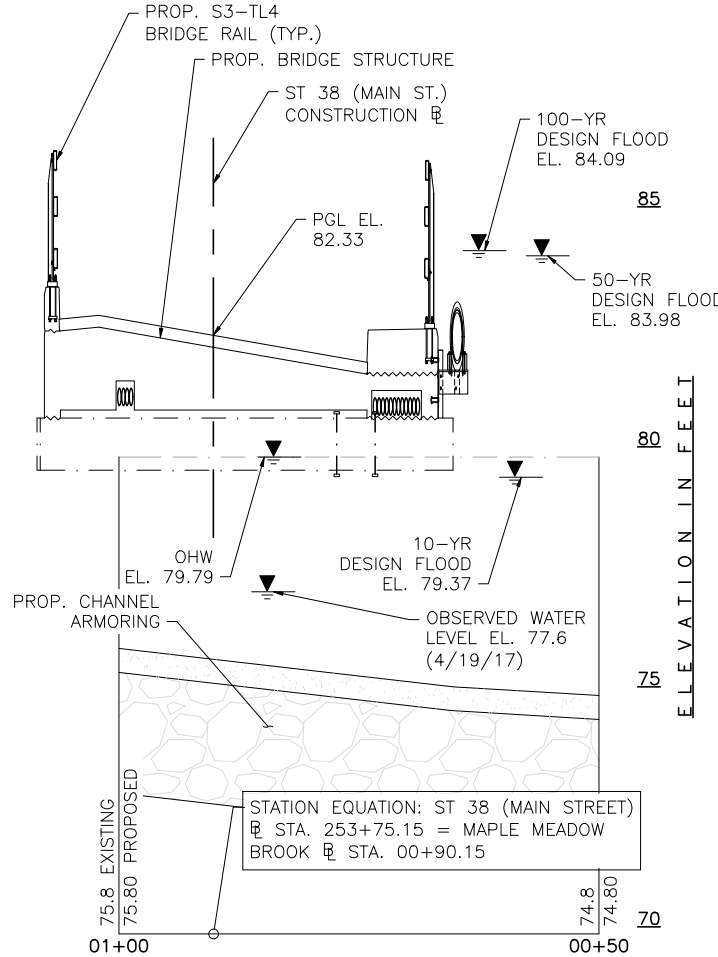
## INDEX OF DRAWINGS


| TITLE | SHEET NO. |
|---|---|
| TITLE SHEET | 1 |
| GENERAL NOTES | 2 |
| BORING LOGS | 3 |
| PROBE AND TEST PIT LOGS | 4 |
| GENERAL PLAN AND ELEVATION | 5 |
| DEMOLITION PLAN & SECTIONS | 6 |
| SUGGESTED BRIDGE DEWATERING PLAN | 7 |
| DECK REPAIR PLAN | 8 |
| ABUTMENT REPAIR DETAILS | 9 |
| CONCRETE REPAIR DETAILS | 10 |
| ABUTMENT DETAILS | 11 |
| WINGWALL DETAILS | 12 |
| PRECAST GUARDRAIL TRANSITION BASE DETAILS | 13 |
| MISCELLANEOUS SUBSTRUCTURE DETAILS | 14 |
| TRANSVERSE SECTION, SIDEWALK, AND CURB DETAILS | 15 |
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| MISCELLANEOUS SUPERSTRUCTURE DETAILS | 17 |
| S3-TL4 BRIDGE RAILING DETAILS | 18 |
| TOP OF PRECAST HIGHWAY GUARDRAIL FOR S3-TL4 RAILING | 19 |


PROFILE – ST 38 (MAIN STREET)

HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" =10'




PROFILE – MAPLE MEADOW BROOK

HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" =10'

Green International Affiliates, Inc.
A Lochner Company
101 Arnas Pond Drive, Suite 200, Tewksbury, MA 01876

MONTH DD, YYYY | ISSUED FOR CONSTRUCTION

MassDOT Massachusetts Department of Transportation Highway Division

PROPOSED BRIDGE REHABILITATION
**WILMINGTON**
ROUTE 38 (MAIN STREET)
OVER MAPLE MEADOW BROOK

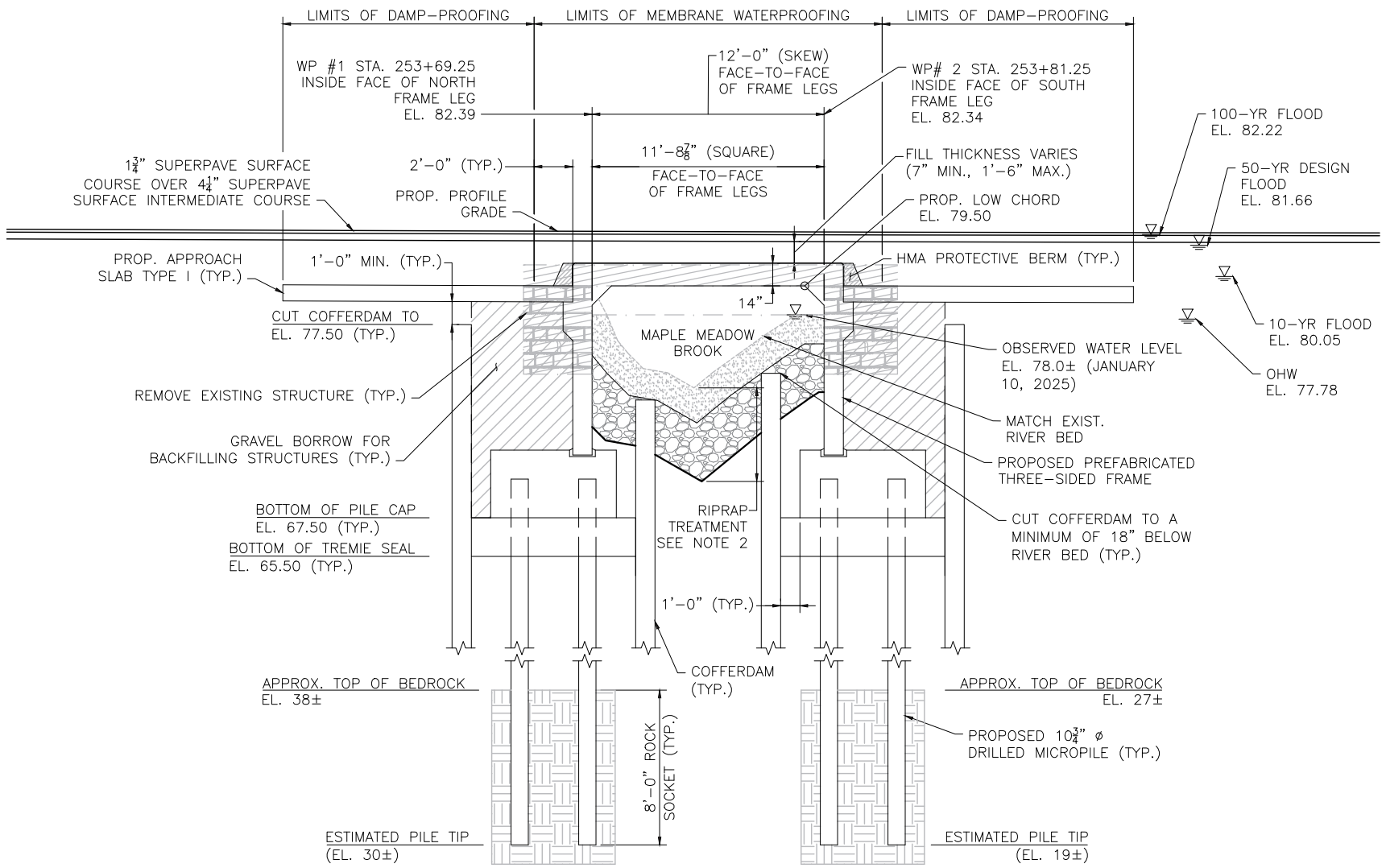
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

TITLE: | CHIEF ENGINEER

SHEET 1 OF 19 SHEETS BRIDGE NO. W-38-011 (802)

ACOE PLANS SHEET 21 OF 27

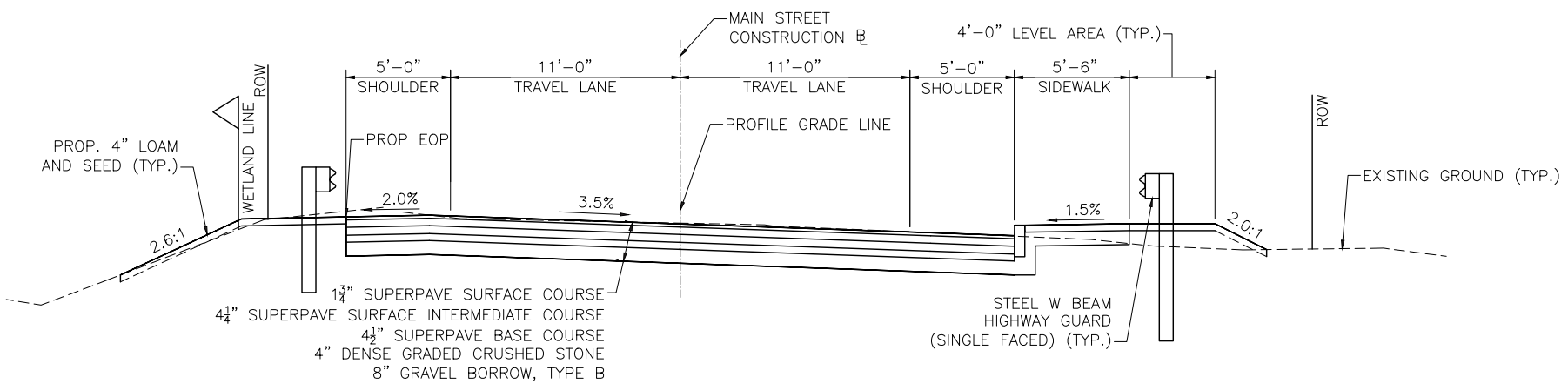

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608051_BR01.DWG Plotted on 22-May-2025 3:59 PM
Proposal No. 608051 - 132406
Second Structural Submission (S2) 19-January-2024




NOTES:
1. ALL HORIZONTAL DIMENSIONS PROVIDED FOR ROADWAY UNDER STRUCTURE ARE SQUARE.
2. 2'-6" DUMPED RIPRAP (M2.02.2) OVER GEOTEXTILE FABRIC. 1'-6" THICK LAYER OF NATURAL STREAMBED MATERIAL TO MATCH EXISTING STREAMBED ELEVATIONS.

## TYPICAL LONGITUDINAL SECTION

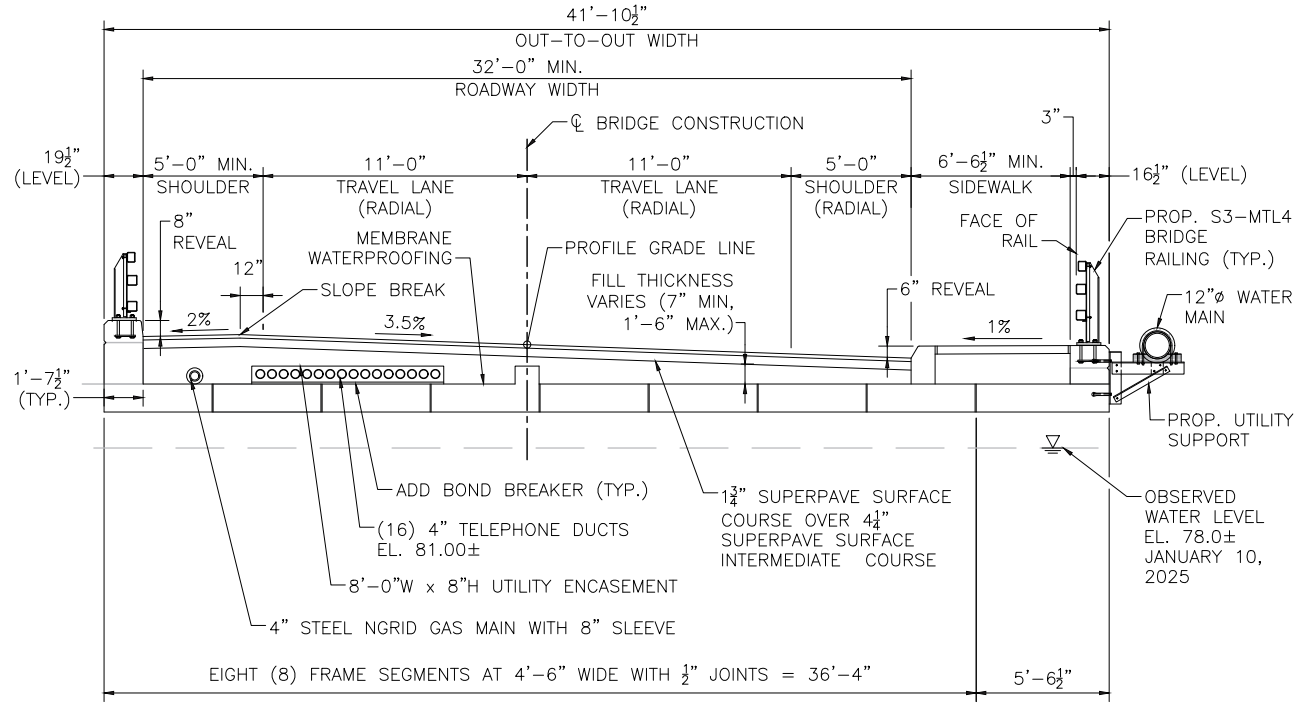
SCALE: ⅛" = 1'-0"




## TYPICAL APPROACH SECTION

SCALE: ⅛" = 1'-0"

4 0 4 8
SCALE IN FEET




## TYPICAL BRIDGE SECTION

SCALE: ⅛" = 1'-0"

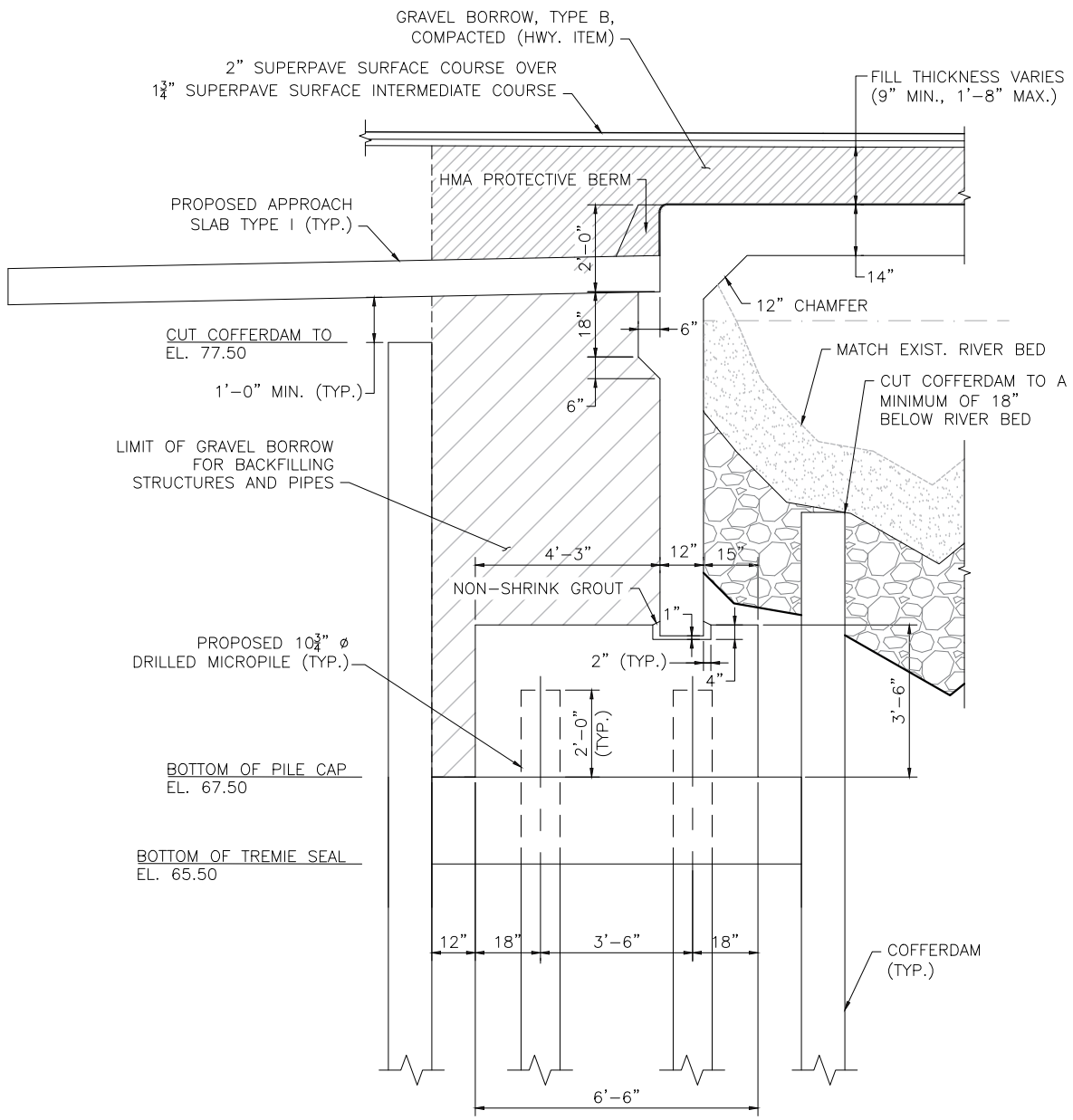
### GENERAL NOTES:

1. DIMENSIONS SHOWN INDICATE PRELIMINARY DESIGN DIMENSIONS. CONTRACTOR TO DETERMINE FINAL DIMENSIONS BASED UPON THEIR APPROVED DESIGN.
2. PAVEMENT SHALL CONSIST OF 1¾" SUPERPAVE SURFACE COURSE OVER 4¼" SUPERPAVE SURFACE INTERMEDIATE COURSE.

### PILE NOTES:

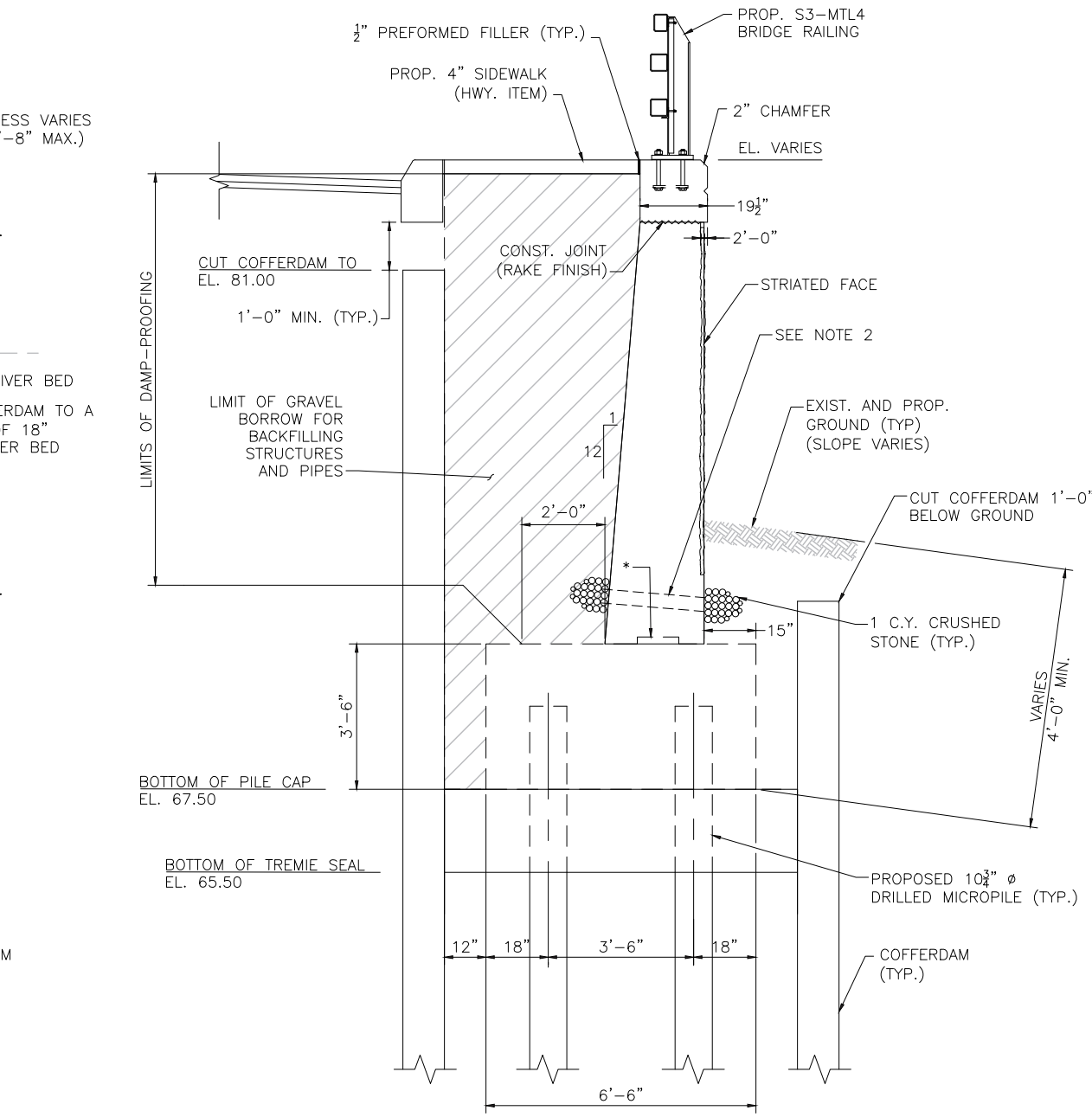
3. FACTORED AXIAL DESIGN LOAD PER MICROPILE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
   - STRENGTH I LIMIT STATE
     FACTORED AXIAL DESIGN LOAD = XXX.X KIPS.
4. THE FACTORED STRUCTURAL PILE RESISTANCE IS XXX.X KIPS AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF XXX.X KIPS AND A RESISTANCE FACTOR OF 0.XX.
5. THE FACTORED GEOTECHNICAL PILE RESISTANCE IS XXX.X KIPS AND IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF XXX.X KIPS AND A RESISTANCE FACTOR OF 0.XX.
6. THE ESTIMATED PILE TIP ELEVATION VARIES (EL. XX.XX TO XX.XX FEET AT NORTH FOOTING AND EL. XX.XX TO XX.XX FEET AT SOUTH FOOTING).

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Proposal No. 6080051 - 132406
608051_BR4.DWG Plotted on Mar-25 11:46 AM
14-February-2025
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ACOE PLANS SHEET 22 OF 27




## TYPICAL ABUTMENT SECTION

SCALE: 1/4" = 1'-0"




## TYPICAL WINGWALL SECTION

SCALE: 1/4" = 1'-0"

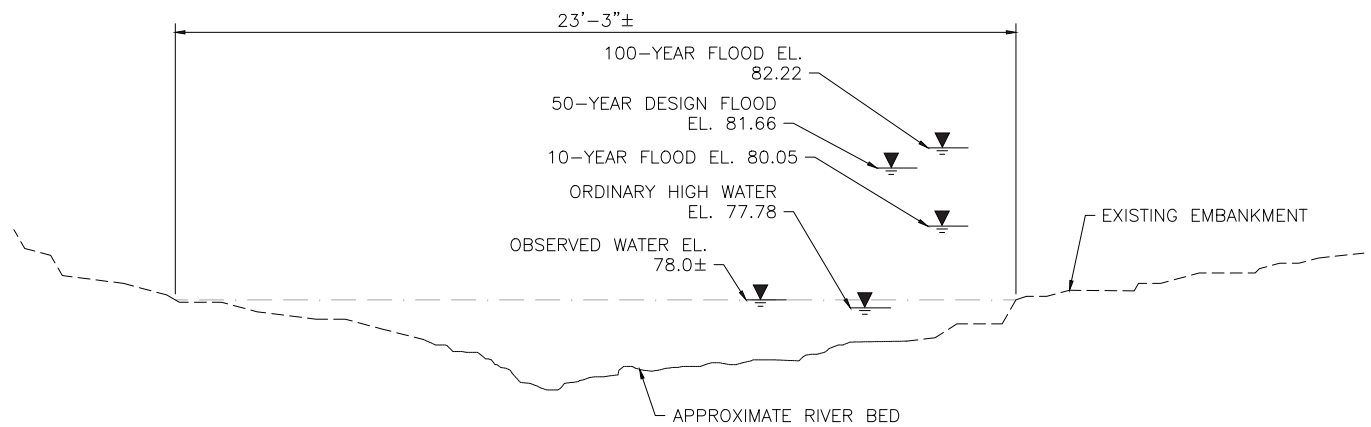
2 0 2 4

SCALE IN FEET

### NOTES:

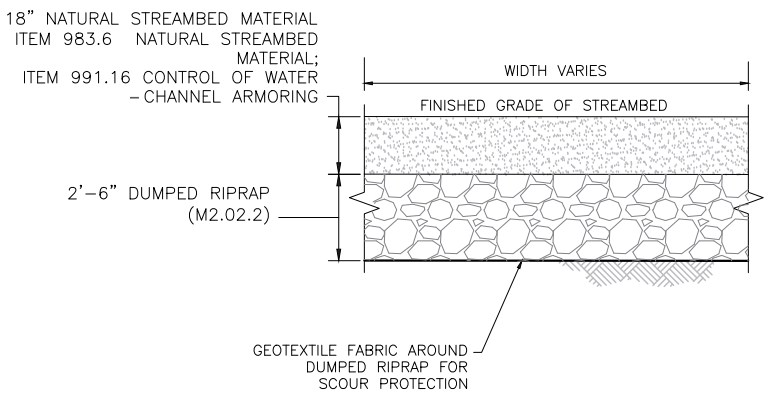
1. SEE RELATED MICROPILE NOTES ON SHEET 4.
2. 4" ø WEEP HOLES 10'-0" O.C. LOCATED 12" ABOVE THE HEEL OF THE FOOTING SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVICE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
3. ALL CONCRETE SHALL BE 5000 PSI HP CONCRETE.

*CONSTRUCTION JOINT WITH 12" X 2" KEY.




## TYPICAL CHANNEL SECTION

SCALE: 3/16" = 1'-0"




## CHANNEL ARMORING DETAIL

NOT TO SCALE

2'-8" 0 2'-8" 5'-4"

SCALE IN FEET

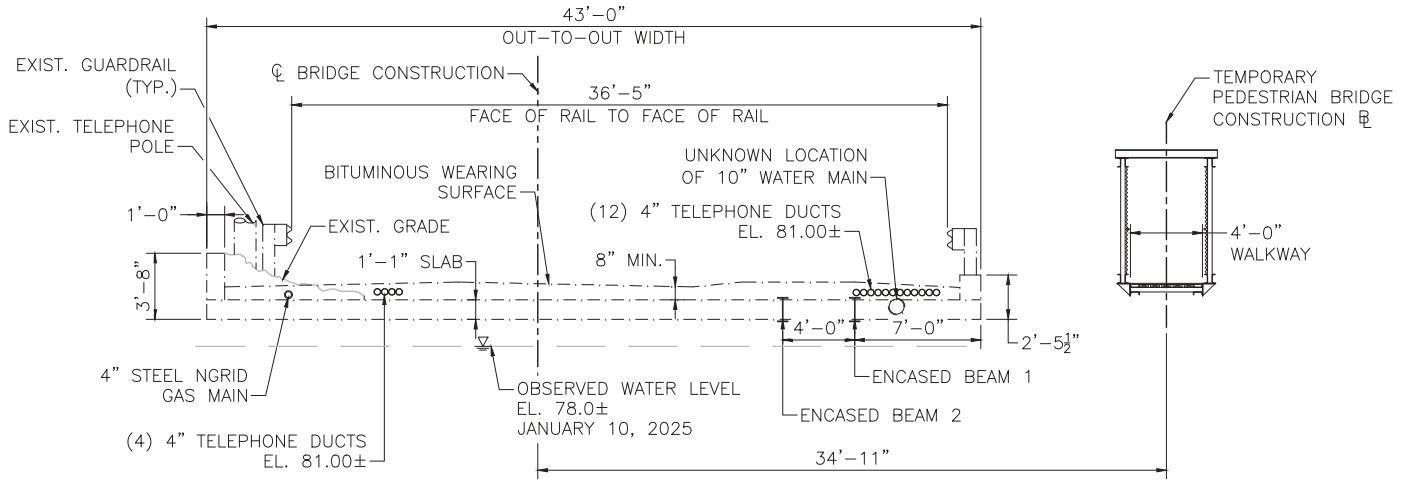


A00831 - 30

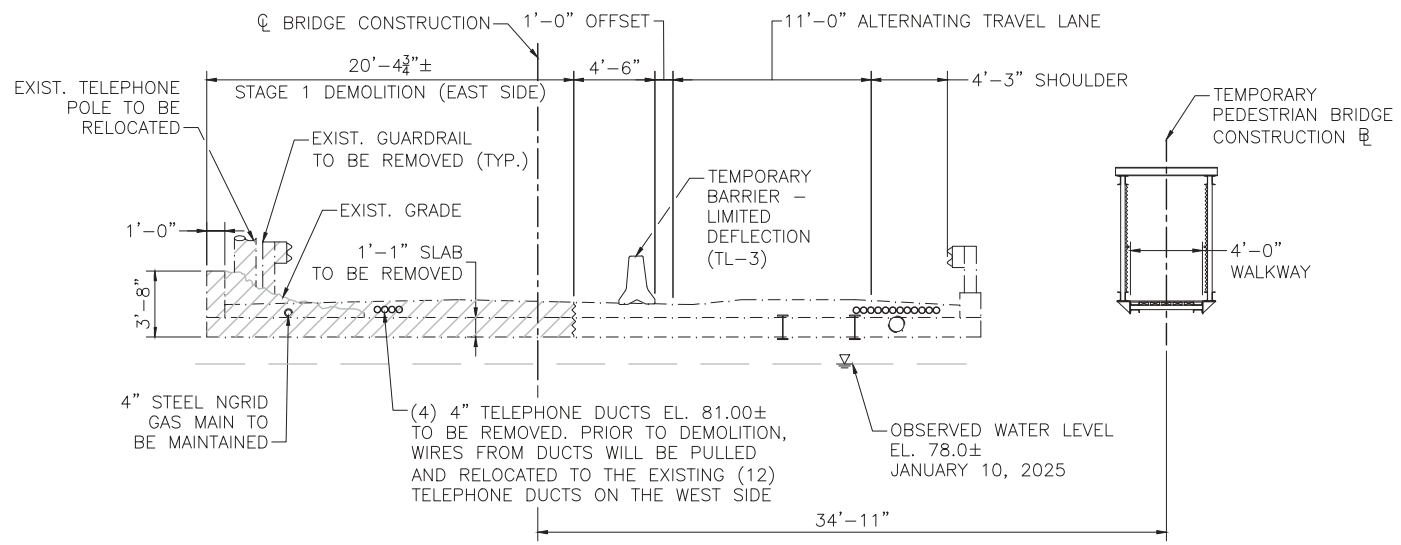
Proposal No. 608051 - 132406

608051_BR5.DWG Plotted on Mar-25 11:46 AM

14-February-2025 Initial Sketch Plan Submittal (SP1)



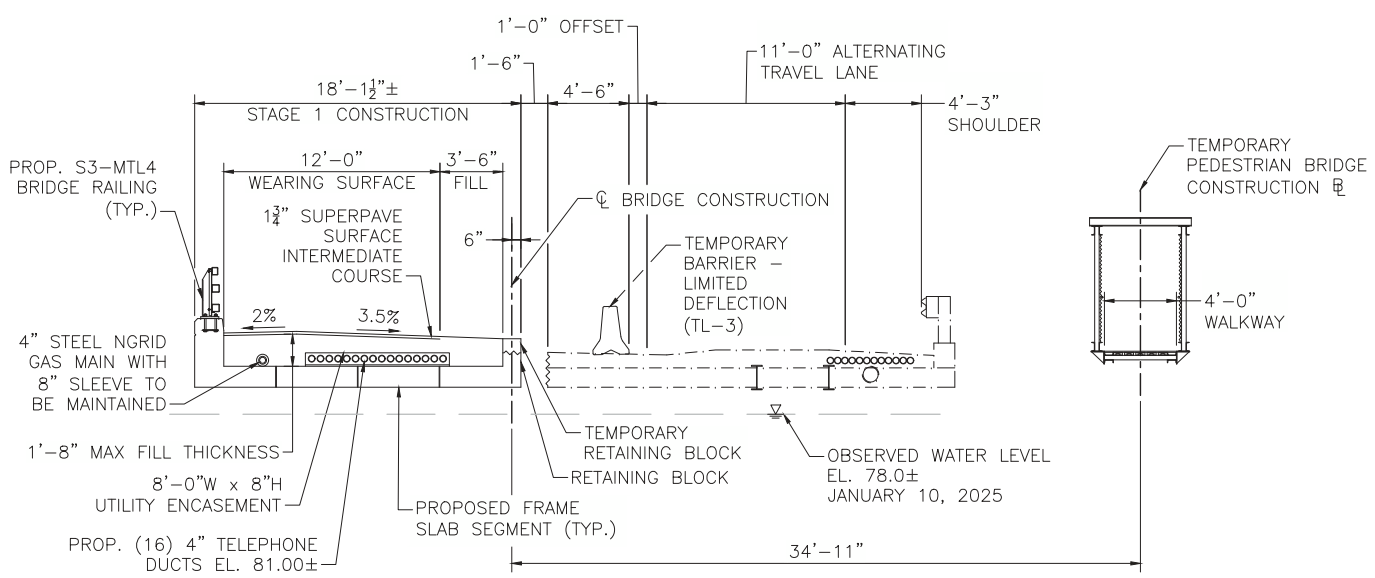

EXISTING BRIDGE SECTION




STAGE I – DEMOLITION OF EAST SIDE

## STAGE 1 DEMOLITION

SCALE: 3/32" = 1'-0"




STAGE I – CONSTRUCTION OF EAST SIDE

## GENERAL STAGE CONSTRUCTION NOTES:

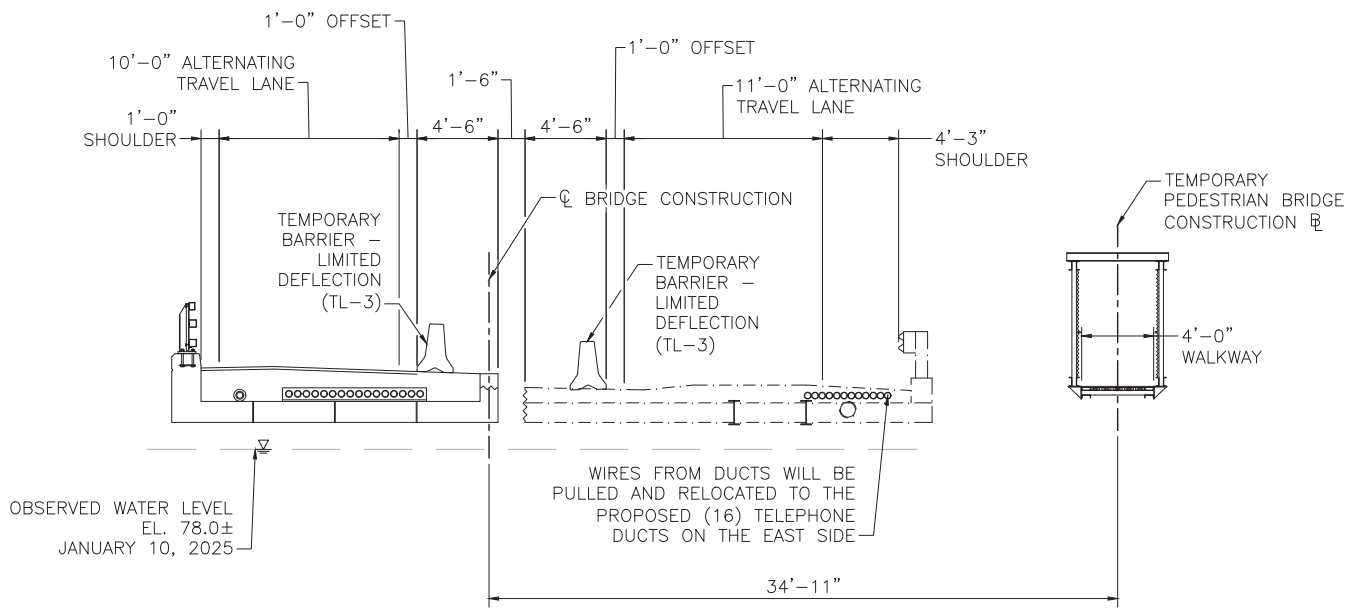
1. SEE HIGHWAY PLANS FOR ADDITIONAL TRAFFIC MANAGEMENT REQUIREMENTS.
2. ALL DIMENSIONS GIVEN ARE SQUARE, EXCEPT AS NOTED.
3. ALL TEMPORARY BARRIERS PLACED ON THE BRIDGE ARE TO BE LIMITED DEFLECTION (TL-3).
4. TEMPORARY BARRIER (TL-3) ON THE ROADWAY AND TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) ON THE BRIDGE TO MEET CRASH TEST LEVEL 3 STANDARDS.
5. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF TEMPORARY PEDESTRIAN BRIDGE, SEE SHEETS 8 AND 9 FOR DETAILS.

## SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 1

1. INSTALL TEMPORARY PEDESTRIAN BRIDGE AND APPROACH WALKWAYS.
2. VERIZON TO RELOCATE WIRES FROM THE (4) 4" DUCTS TO THE EXISTING (12) TELEPHONE DUCTS ON THE WESTERN SIDE PRIOR TO DEMOLITION.
3. INSTALL TEMPORARY PROTECTIVE SHIELDING.
4. INSTALL TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) WHERE SHOWN.
5. RELOCATE EXISTING TELEPHONE POLE.
6. TRANSITION TRAFFIC TO ONE-LANE ALTERNATING TRAVEL ON THE WESTERN PORTION OF THE BRIDGE.
7. REMOVE PORTION OF EXISTING STRUCTURE TO LIMIT SHOWN.
8. INSTALL PORTION OF PROPOSED STRUCTURE TO LIMIT SHOWN, INCLUDING FRAME SLAB SEGMENTS, BRIDGE RAILING AND FILL. THIRD FRAME SEGMENT TO INCLUDE RETAINING BLOCK AND TEMPORARY RETAINING BLOCK TO HOLD FILL AS SHOWN. INSTALL PROPOSED (16) TELEPHONE DUCTS AND UTILITY ENCASEMENT ON EASTERN SIDE OF THE NEWLY CONSTRUCTED BRIDGE PORTION.
9. INSTALL 1¾" SUPERPAVE SURFACE INTERMEDIATE COURSE FOR THE LIMITS SHOWN OF THE NEWLY CONSTRUCTED PORTION OF BRIDGE UNDER STAGE 1. AFTERWARDS, INSTALL TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) AS SHOWN.
10. VERIZON TO PULL WIRES FROM DUCTS AND RELOCATE TO PROPOSED (16) TELEPHONE DUCTS ON THE EASTERN SIDE.

### LEGEND

▨ LIMITS OF DEMOLITION




STAGE IA – VERIZON TELEPHONE LINES RELOCATION

## STAGE 1 CONSTRUCTION

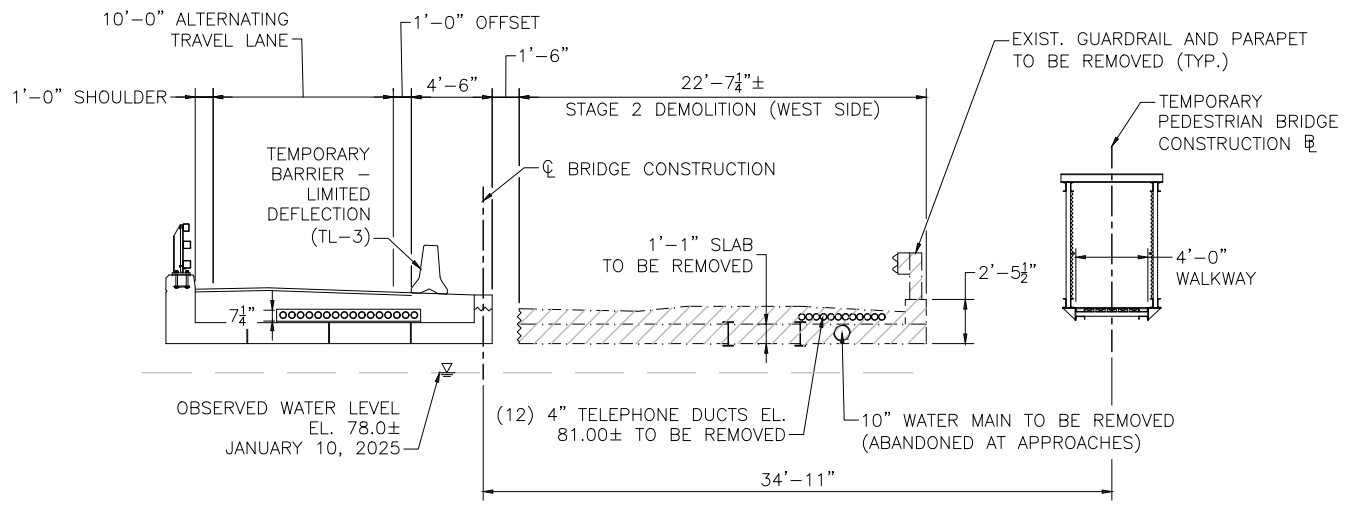
SCALE: 3/32" = 1'-0"

5'-4" 0 5'-4" 10'-8"
SCALE IN FEET

ACOE PLANS SHEET 24 OF 27

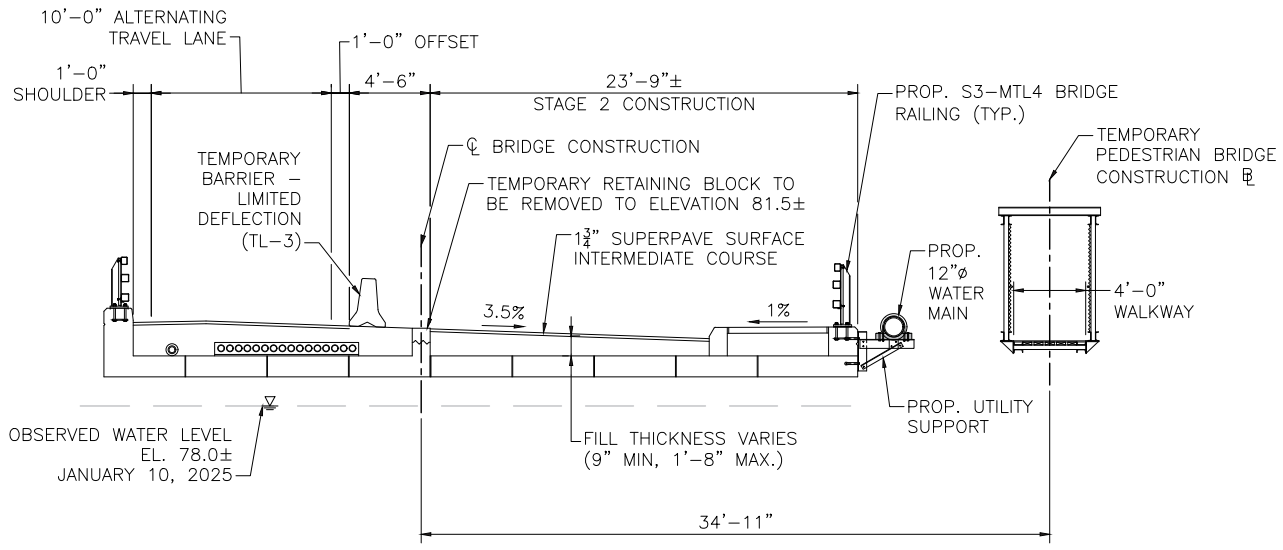


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608051_BR6-7.DWG Plotted on Mar-25 11:46 AM
Proposal No. 608051 - 132406
Initial Sketch Plan Submittal (SP1) 14-February-2025

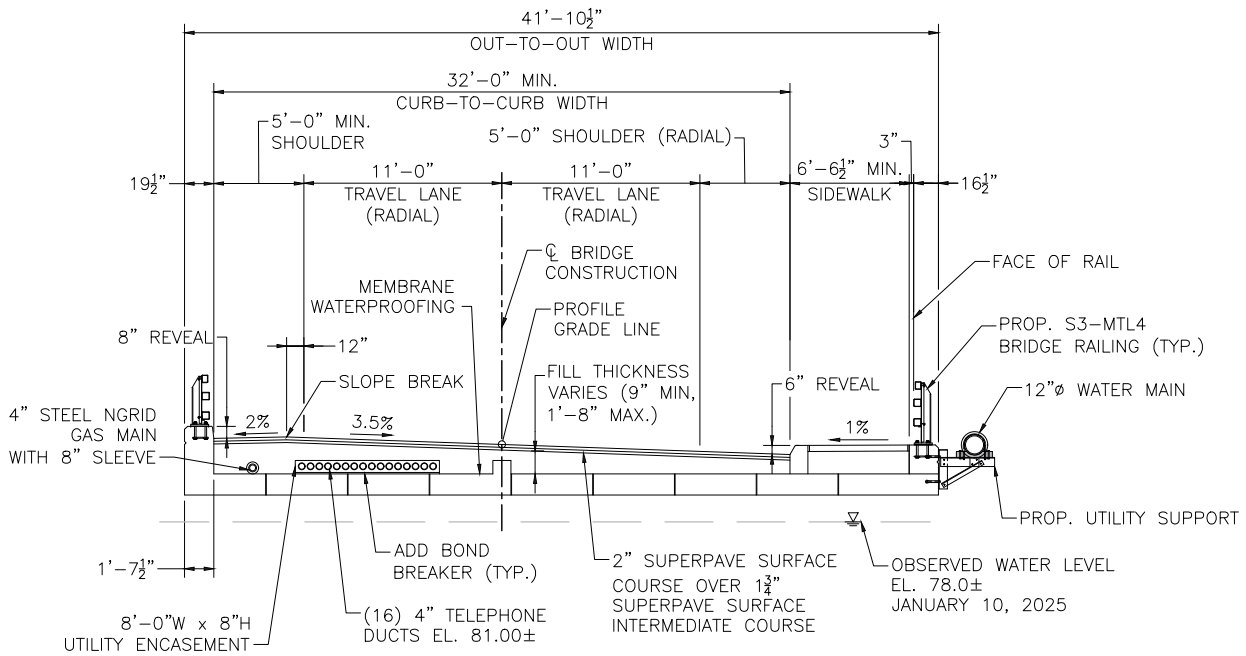



STAGE 2 – DEMOLITION OF WEST SIDE

SCALE: $\frac{3}{32}$" = 1'–0"




STAGE II – CONSTRUCTION OF WEST SIDE




FINAL SECTION

STAGE 2 CONSTRUCTION

SCALE: $\frac{3}{32}$" = 1'–0"

5'-4" 0 5'-4" 10'-8"

SCALE IN FEET

GENERAL STAGE CONSTRUCTION NOTES:

1. REFER TO SHEET 6 FOR GENERAL CONSTRUCTION NOTES.

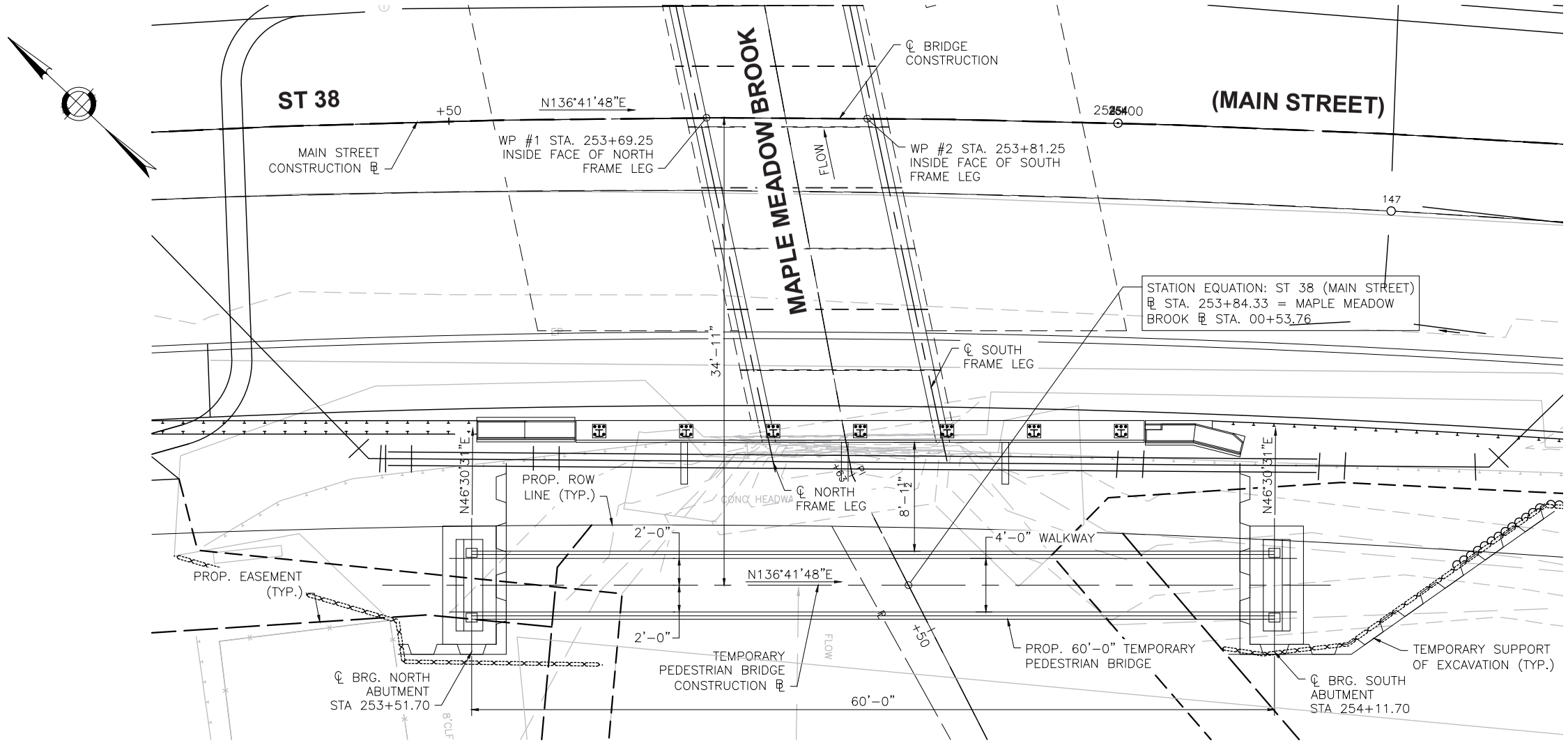
SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 2

1. RELOCATE ST 38 (MAIN STREET) ONE–WAY ALTERNATING TRAFFIC TO EASTERN NEWLY CONSTRUCTED PORTION OF THE BRIDGE.
2. REMOVE TEMPORARY BARRIER – LIMITED DEFLECTION (TL–3) FROM THE EXISTING WESTERN PORTION OF THE BRIDGE.
3. REMOVE 10" WATER MAIN.
4. REMOVE (12) 4" TELEPHONE DUCTS.
5. REMOVE THE REMAINING PORTION OF THE EXISTING STRUCTURE FOR THE LIMITS SHOWN.
6. INSTALL REMAINING PART OF THE STRUCTURE, INCLUDING FRAME SEGMENTS, SIDEWALK, BRIDGE RAILING AND FILL TO THE THICKNESS SHOWN, AND REMOVE TEMPORARY RETAINING BLOCK.
7. INSTALL 1¾" SUPERPAVE SURFACE INTERMEDIATE COURSE FOR THE LIMITS OF THE STAGE 2 CONSTRUCTION.
8. CONSTRUCT PROPOSED UTILITY SUPPORT AND INSTALL 12" DIAMETER WATER MAIN.
9. REMOVE TEMPORARY BARRIER – LIMITED DEFLECTION (TL–3).
10. AFTER CONSTRUCTION OF THE WORK SHOWN UNDER THE STAGE 2 LIMITS, 1¾" SUPERPAVE SURFACE INTERMEDIATE COURSE SHALL BE INSTALLED OVER REMAINING WIDTH OF THE BRIDGE (4'–6"). THEN, THE FINAL 2" SUPERPAVE SURFACE COURSE SHALL BE INSTALLED FOR THE FULL WIDTH OF THE STRUCTURE. .
11. OPEN THE STRUCTURE TO TWO–WAY TRAFFIC AND TO PEDESTRIAN TRAFFIC IN THE FINAL CONDITION.
12. REMOVE TEMPORARY PEDESTRIAN BRIDGE, APPROACH WALKWAYS, AND CUT/REMOVE TEMPORARY SHEETING.

LEGEND

LIMITS OF DEMOLITION

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608051_BR6-7.DWG Plotted on Mar-25 11:46 AM
Initial Sketch Plan Submittal (SP1) 14-February-2025
ACOE PLANS SHEET 25 OF 27

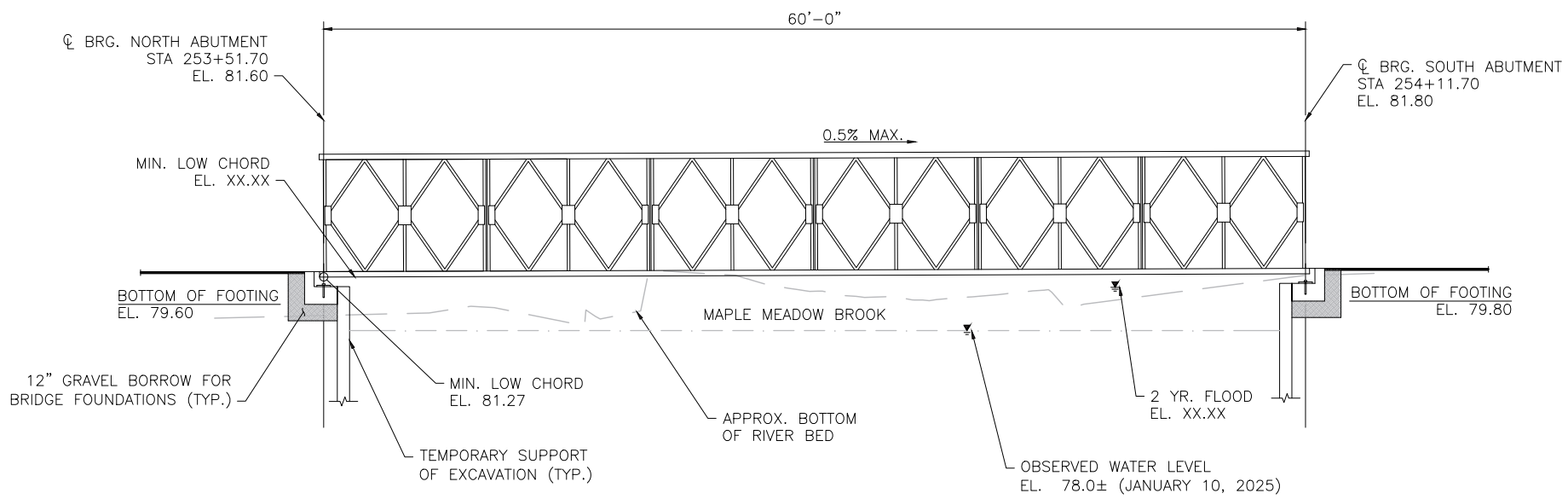



NOTE:

CHANNEL ARMORING NOT SHOWN FOR CLARITY.

## TEMPORARY PEDESTRIAN BRIDGE PLAN

SCALE: 1" =10'




## TEMPORARY PEDESTRIAN BRIDGE ELEVATION

SCALE: 1" = 10'

5 0 5 10

SCALE IN FEET

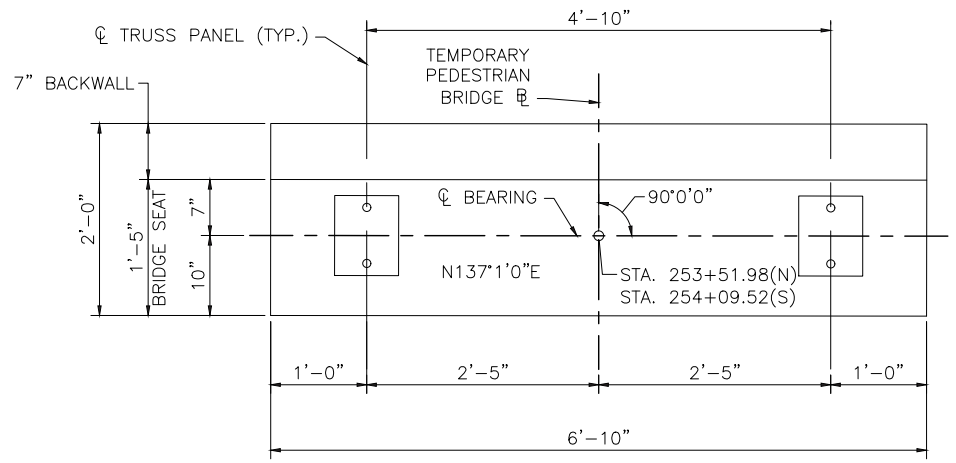
NOTES:

1. PRE-ENGINEERED TEMPORARY PANELIZED BRIDGE SHOWN. ACTUAL BRIDGE TYPE TO BE DETERMINED AND DESIGNED BY CONTRACTOR TO MEET SPAN, WIDTH AND LOW CHORD REQUIREMENTS.
2. THE TEMPORARY PEDESTRIAN BRIDGE SHALL BE DESIGNED ACCORDING TO THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THE LATEST EDITION OF THE AASHTO GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES AND THE FOLLOWING MINIMUM DESIGN LOAD:

   PEDESTRIAN LIVE LOAD: 90 PSF
   WIND LOAD: PER ABOVE AASHTO GUIDELINES

3. CONTRACTOR TO DESIGN SUBSTRUCTURE INCLUDING TEMPORARY ABUTMENTS AND BACKWALLS.
4. AFTER THE CONSTRUCTION AND OPENING OF THE PROPOSED VEHICULAR BRIDGE, THE TEMPORARY PEDESTRIAN BRIDGE, INCLUDING ABUTMENTS AND OTHER RELATED ITEMS SHALL BE REMOVED, AND THE AREA RESTORED TO ITS EXISTING OR PROPOSED CONDITION.
5. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS FOR THE TEMPORARY PEDESTRIAN BRIDGE.
6. CONCRETE FOR THE SUBSTRUCTURE OF TEMPORARY BRIDGE SHALL BE 4000 PSI, ¾ IN, 610 CEMENT CONCRETE.
7. CONTRACTOR TO COORDINATE WITH DIG-SAFE FOR ANY UNDERGROUND UTILITIES TO AVOID CONFLICT BEFORE PLACEMENT OF CRUSHED STONE FOR SLOPE TREATMENT AND TEMPORARY ABUTMENT.

608051_BR8.DWG Plotted on Mar-25 11:47 AM
Proposal No. 608051 - 132406
Initial Sketch Plan Submittal (SP1) 14-February-2025
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ACOE PLANS SHEET 26 OF 27

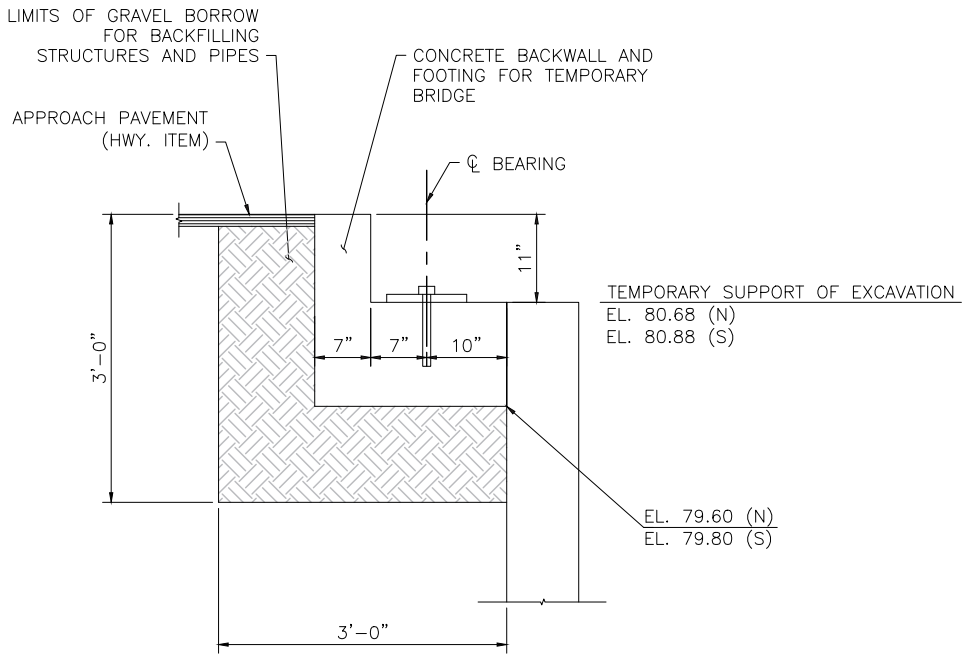



NOTE:

NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR.

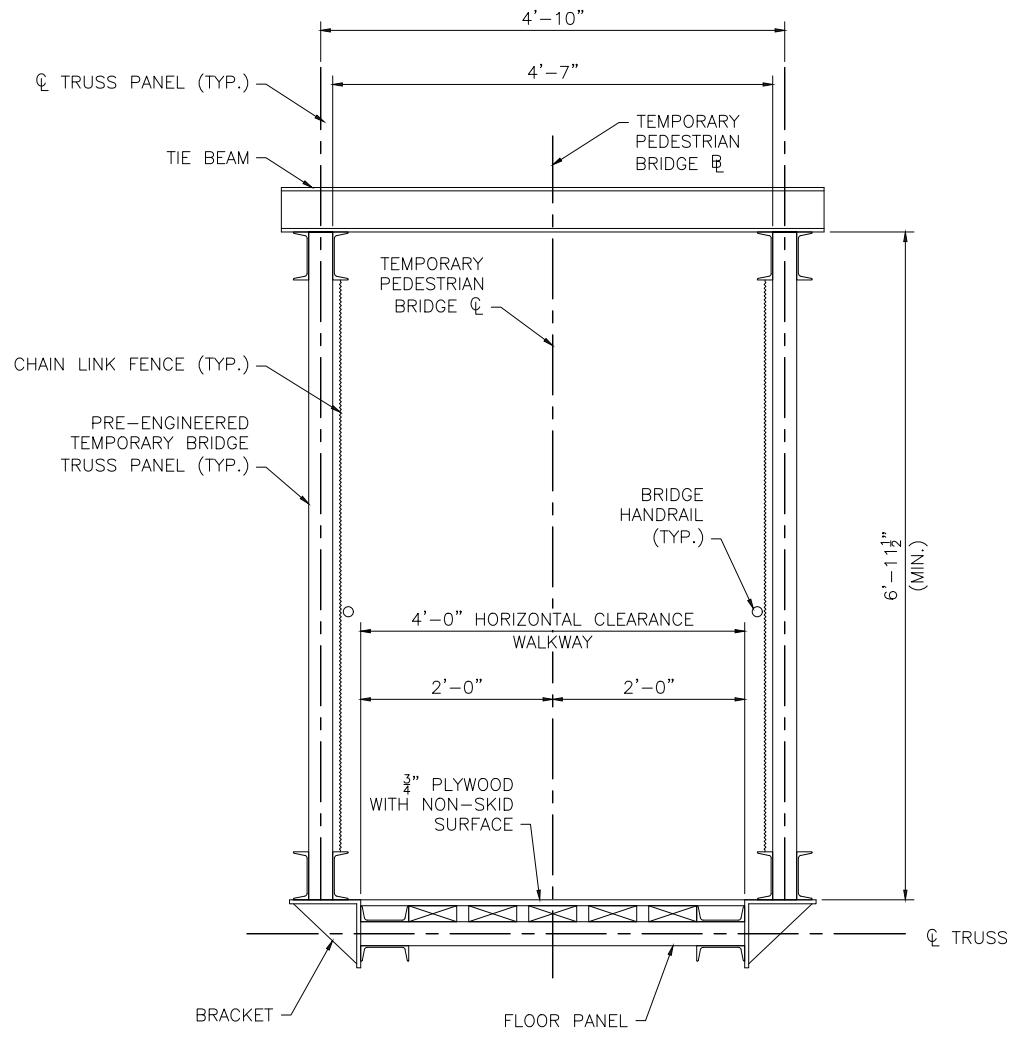
## TEMPORARY PEDESTRIAN BRIDGE ABUTMENT PLAN

SCALE: 1" = 2'–0"




## TEMPORARY PEDESTRIAN BRIDGE ABUTMENT SECTION

SCALE: 1" = 2'–0"




## TEMPORARY PEDESTRIAN BRIDGE TRANSVERSE SECTION

SCALE: 1" = 2'–0"

1 0 1 2

SCALE IN FEET

TEMPORARY PEDESTRIAN BRIDGE NOTES:

1. ALL DETAILS AND DIMENSIONS SHOWN ARE CONCEPTUAL. CONTRACTOR SHALL DESIGN THE TEMPORARY PEDESTRIAN BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE IN ACCORDANCE WITH NOTES ON SHEET 8.
2. ABUTMENT ELEVATIONS ARE BASED ON AVAILABLE BRIDGE DATA AND A 2 IN. BEARING HEIGHT. THE CONTRACTOR SHALL ADJUST AS NEEDED.

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Proposal No. 608051 - 132406

Initial Sketch Plan Submittal (SP1) 14-February-2025

ACOE PLANS SHEET 27 of 27

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
100 Cambridge Street Suite 900 Boston, MA 02114 • 617-292-5500

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Commissioner

August 5, 2025

Massachusetts Department of Transportation
Highway Division
10 Park Plaza, Room 7360
Boston, MA 02116
ATTN: Erica Larner

RE: 401 WATER QUALITY CERTIFICATION
BRP WW 10, Major Fill Project
BRP WW 08, Minor Dredge Project
Reconstruction of Route 38 (Main Street) from Route 62 to the Woburn City Line
Wilmington, MA

401 WQC Filing Number: 25-WW26-0013-APP
USACE Application No. NAE-2025-00171
MassDOT File Number: 608051

Dear Ms. Larner:

The Massachusetts Department of Environmental Protection (MassDEP) has reviewed your application for a Water Quality Certification (WQC), as referenced above. This application was deemed complete on August 1, 2025. In accordance with the provisions of MGL Ch. 21, §§26-53 and Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 et seq.), it has been determined there is reasonable assurance the proposed project will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The proposed project consists of corridor improvements along an approximately 2.1-mile stretch of Route 38 (Main Street) from Route 62 (Church Street/Burlington Avenue) to the Woburn city line in Wilmington (the Project). The Project includes roadway reconstruction and repaving, widening less than a lane, adding shoulders, intersection improvements, installation of sidewalks, bridge and culvert replacement, Bordering Vegetated Wetland (BVW) and Land Under Water (LUW) replication and restoration, and stormwater infrastructure improvements. The Project purpose is to improve the roadway infrastructure, reduce traffic back-ups on entering side streets, improve the existing drainage system, and provide increased safety for drivers, bicyclists, and pedestrians. The bridge over Maple Meadow Brook to be replaced (Bridge No. W-38-011) is stated as being structurally deficient.

This information is available in alternate format. Please contact MassDEP at 617-292-5500.
TTY# MassRelay Service 1-800-439-2370
MassDEP Website: www.mass.gov/dep

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*Existing Conditions*

Route 38 is classified as an Urban Principal Arterial and extends in a primarily north/south alignment from the Woburn city line to Route 62. Pavement widths generally vary from approximately 30 to 34 feet. Travel lanes are 12 to 14 feet wide with two- to five-foot-wide shoulders. Approximately 5.5-foot-wide sidewalks are present at various locations along Route 38 and its intersections along the Project corridor. There are no other pedestrian or bicycle accommodations along the roadway. Several underground and overhead utilities are present along the corridor including gas, water, sewer, stormwater, and electric.

Maple Meadow Brook is a perennial stream that flows northeast under Route 38 at approximate Station 253+75. The bridge over Maple Meadow Brook is a single span with a clear span width of 11.7 feet and a length of 43 feet. An unnamed intermittent stream flows northeast under Route 38 at approximate Station 218+00 through a 3.5-foot-wide, 1.5-foot-tall, 46-foot-long box culvert. As distinct bankfull width indicators are not present immediately upstream or downstream of the crossings, StreamStats was used to estimate a bankfull width of approximately 25 feet for Maple Meadow Brook and approximately 3.14 feet for the intermittent stream. BVWs are present at various locations along both sides of the Route 38 corridor.

A portion of the Project will occur within a Federal Emergency Management Agency (FEMA) 1% annual chance of flooding zone (Zone AE) and regulatory floodway associated with Maple Meadow Brook. The FEMA Flood Insurance Study identified a Base Flood Elevation (BFE) of 82.9 feet (NAVD88) upstream of the bridge and 81.5 feet downstream; however, a hydraulic study determined the BFE to be 84.09 feet. Nearly the entire Project is located within a Zone II Wellhead Protection Area. Stormwater currently flows untreated to adjacent areas through a combination of country drainage and closed drainage systems.

*Project Description*

Full depth reconstruction of Route 38 will occur from Route 62 to Eames Street, along with micromilling and resurfacing from Eames Street to the Woburn city line. The Project also includes intersection improvements including realignments to improve sight distances and geometry. Two 11-foot-wide travel lanes will be provided along Route 38, one in each direction, with five-foot-wide bicycle lanes on each side. The roadway will be widened by a maximum of 7.5 feet for approximately 900 feet south of the Route 62 intersection. A 5.5-foot-wide sidewalk will be installed along one or both sides of the roadway depending on location.

The existing bridge over Maple Meadow Brook will be replaced with a prefabricated open bottom three-sided structure supported by cast-in-place footings on micropiles. Due to potential downstream flooding concerns with a wider structure as demonstrated by a hydraulic study, the width of the new structure will maintain approximately the same clear span width as the existing structure. As such, the new bridge will not result in an increase in flood elevations. Natural streambed material will be placed to a depth of 18 inches to match the existing streambed elevation, over 2.5 feet of riprap scour protection. A temporary four-foot-wide pedestrian bridge will be installed west of the existing bridge to provide safe pedestrian access while the bridge is being replaced.

The existing culvert at Station 218+00 will be replaced with a four-foot-wide, three-foot-tall, 55.3-foot-long precast concrete box culvert. The box culvert will be embedded with 12 inches of natural streambed material; in addition, 12 inches of riprap scour protection will be installed at the ends topped with 12 inches of natural streambed material to meet grade.

A compensatory flood storage area will also be constructed on the west side of Route 38 from approximate Stations 257+50 to 260+00. Invasive species will be managed prior to any clearing or soil disturbance in accordance with an Invasive Plant Management Strategy to be approved by MassDEP. Several stormwater infrastructure improvements will be implemented as described below.

*BVW and LUW Impacts*

The Project will result in 2,630 square feet (sf) of permanent and 2,834 sf of temporary impacts to BVWs, and 2,195 sf of permanent and 601 sf of temporary impacts to LUW. Permanent BVW and LUW impacts are required for installation of the new stream crossing structures and riprap scour protection, and grading associated with roadway side slopes. Temporary BVW and LUW impacts are required for installation of erosion and sediment controls, construction period access to work areas, and for the temporary pedestrian bridge. A total of 715 cubic yards (cy) of dredging will be required; 650 cy in Maple Meadow Brook, and 65 cy in the unnamed intermittent stream. Dredging is required to install new stream crossing structures and riprap scour protection. In an email dated February 3, 2025, the Massachusetts Division of Fisheries and Wildlife stated no in-water work time of year restrictions are required for the Project.

*Alternatives Analysis*

Constraints adjacent to Route 38, including but not limited to commercial and residential properties, BVWs and LUW, and numerous utilities make realigning Route 38 to further avoid BVW and LUW impacts not practicable. Lane widths have been reduced from 12 feet to the minimum practicable width of 11 feet to minimize the roadway width and impervious surface. Permanent impacts from riprap scour protection have been avoided in BVWs on the downstream side of the Maple Meadow Brook crossing. Permanent BVW impacts associated with grading were also avoided on the downstream side of the intermittent stream crossing. A retaining wall was determined to be impractical to avoid or minimize BVW and LUW impacts along the west side of the roadway from Stations 238+50 to 241+00, and instead a 2:1 side slope is proposed to avoid and minimize BVW and LUW impacts to the extent practicable.

*BVW and LUW Replication and Restoration*

Permanent BVW impacts will be mitigated through construction of a 3,510 sf BVW replication area east of approximate Station 256+50 adjacent to BVW E under the supervision of a qualified Wetland Scientist. The area will be excavated to 12 to 18 inches below the adjacent BVW elevation, backfilled with wetland soil to the existing adjacent BVW elevation, planted with native trees and shrubs, and a native wetland seed mix will be applied. Temporary BVW impacts will be restored in place by grading to pre-construction contours as needed and applying a native wetland seed mix.

As previously discussed, Maple Meadow Brook and the unnamed intermittent stream will be restored by placement of 18 inches and 12 inches of natural streambed material, respectively, to match the existing

streambed elevations. Suitable native streambed material dredged during the Project will be stockpiled and reused as available.

*Stormwater Management Standards*

The Project will increase impervious surface by 1.4 acres (60,722 sf) and qualifies as a redevelopment project as defined at 314 CMR 9.02 as widening will be limited to less than the width of a single lane. Through construction of an infiltration basin and sediment forebay and two subsurface infiltration systems with isolator rows, and installation of deep sump catch basins throughout the corridor, Stormwater Management Standard 3 is exceeded using the macro approach. Stormwater Management Standard 2 is met to the maximum extent practicable, and Stormwater Management Standard 4 is met for all new impervious surfaces and met to the maximum extent practicable for existing impervious surfaces. A complete evaluation concluded additional locations for Stormwater Control Measures (SCMs) are not practicable within the Project area. Stormwater runoff will remain as country drainage where SCMs are not practicable.

Stormwater Management Standard 6 will be met to the maximum extent practicable by construction of an infiltration basin with a sediment forebay and deep sump catch basins for pretreatment within the Zone II Wellhead Protection Area. Infiltration basins are highly recommended within Zone II Wellhead Protection Areas per the Stormwater Handbook.

*Stream Crossing Standards*

The bridge over Maple Meadow Brook will meet all Stream Crossing Standards except Standard 3 which will be met to the maximum extent practicable in accordance with 314 CMR 9.06(2)(b)4. As demonstrated in the hydraulic study, a wider opening would cause downstream flooding; therefore, a crossing that meets 1.2 times the bankfull width is not practicable.

The box culvert at Station 218+00 will fully meet Stream Crossing Standards 3, 4, and 5, and will meet Standards 1, 2, and 6 to the maximum extent practicable in accordance with 314 CMR 9.06(2)(b)4. An open bottom or larger opening culvert is not practicable due to the presence of underground utilities immediately above and below the structure. The box culvert will be embedded with 12 inches of natural streambed material, which is the maximum depth practicable to maintain the hydraulic opening.

*Sediment Chemistry*

Sediment sample analytical results were compared to the Reportable Concentration (RC) S-1 criteria of the Massachusetts Contingency Plan. Results of the sediment samples analyzed indicated the presence of several Volatile and Semi-Volatile Organic Compounds, Extractable Petroleum Hydrocarbons, Polychlorinated Biphenyls, and metals in concentrations below the RC S-1 criteria. As previously discussed, suitable native streambed material dredged during the Project will be stockpiled and reused as available. Dredged materials determined to meet specifications for structural fill will be reused to the extent possible as backfill. All dredge and disposal activities shall occur in accordance with Special Conditions 37 through 44.

Based on a review of information provided by the applicant, MassDEP finds that this project complies with the standards described under 314 CMR 9.06 and 9.07. Public notice was provided in the Town Crier on April 17, 2025, and in the MEPA Environmental Monitor on May 7, 2025.

The Ipswich River Watershed Association (IRWA) submitted comments to MassDEP dated May 28, 2025, requesting additional information regarding the hydraulic study that was completed for the Maple Meadow Brook crossing. Specifically, the IRWA requested an illustration or discussion of the specific impacts of a wider hydraulic opening relative to downstream flooding. MassDOT provided the hydraulic study, which indicates there would be an increase in peak discharge rates and the downstream BFE if the hydraulic opening was 30 feet wide, the width required to meet 1.2 times the bankfull width of 25 feet.

Therefore, based on information currently in the record, MassDEP grants a WQC for this project subject to the following conditions to maintain water quality, to minimize impact on waters and wetlands, and to ensure compliance with appropriate state law. The Department further certifies in accordance with 314 CMR 9.00 that there is reasonable assurance the project or activity will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law. Finally, the Department has determined that upon satisfying the conditions and mitigation requirements of this approval, the project provides a level of water quality necessary to protect existing uses and accordingly finds that the project to be implemented satisfies the Surface Water Quality Standards at 314 CMR 4.00.

Pursuant to 314 CMR 9.09(1)(d); 314 CMR 9.06(6)(a); 310 CMR 9.06(2); 314 CMR 9.07; 314 CMR 9.07(1); 314 CMR 9.09(7)(5)(c); 314 CMR 9.11; and 314 CMR 9.09(1)(e), the following Special Conditions are necessary to ensure that construction practices and stormwater controls are implemented in such a manner as to prevent degradation to wetlands and waters; ensure that practicable steps have been taken which will avoid and minimize impacts to wetlands and waters; minimize turbidity and sediment caused by construction activities; ensure that water quality is not degraded, and that biology of the waters are not negatively impacted by potential discharges; and/or maintain a record of the dredged material for reference and to ensure accountability in its transportation.

**Those Special Conditions that require direct submittals to MassDEP for either review, or review and approval, are denoted by the following notation (Submittal) at the end of the condition and are summarized in Attachment A. In addition, those conditions with the (Submittal) designation shall be included in the Special Provisions and, as applicable, reviewed at the Pre-Construction Meeting.**

1. All work shall be performed in accordance with the following documents and plans:

    - Application for Water Quality Certification, with cover letter and attachments. Prepared by Green International Affiliates, Inc. on behalf of MassDOT. “Reconstruction of Route 38 (Main Street) from Route 62 to the Woburn City Line Including Replacement of Bridge No. W-38-011, Route 38 over Maple Meadow Brook, Wilmington, Massachusetts”. MassDOT Contract No. 608051. Dated April 10, 2025. 401 WQC Filing Number: 25-WW26-0013-APP.
    - Plans entitled: “Massachusetts Department of Transportation Highway Division Plan and Profile of Route 38 (Main Street), W-38-003 (C99), W-38-011 (802), W-38-002 (2NQ) in

the Town of Wilmington, Middlesex County, 100% Submittal". Sheets 1 through 4; 15-19, 94 through 114; 136 through 143; 212 through 224; 228 through 231; and Impact Plans 1 through 6. Prepared by Green International Affiliates, Inc. Last revised May 2024.

- MassDEP Administrative Completeness and Technical Deficiency Review. 401 WQC Transmittal No. 25-WW26-0013-APP. Reconstruction of Route 38 (Main Street), Route 62 to the Woburn City Line, Wilmington, MA. Dated May 1, 2025.
- MassDOT Response to MassDEP Administrative Completeness and Technical Deficiency Review, with attachments. 401 WQC Transmittal No. 25-WW26-0013-APP. Prepared by Green International Affiliates, Inc. Dated May 22, 2025.
- MassDEP Supplemental Administrative Completeness and Technical Deficiency Review via email. Subject: Re: Wilmington Rt. 38 Outstanding Items. Dated June 4, 2025.
- MassDOT Response to Supplemental Administrative Completeness and Technical Deficiency Review via email. Subject: Re: Wilmington Rt. 38 Outstanding Items. Prepared by Oxana Fartushnaya, Green International Affiliates, Inc. Dated June 18, 2025.
- Certificate of the Secretary of Energy and Environmental Affairs on the Final Environmental Impact Report Rollover, Reconstruction of Route 38 (Main Street), from Route 62 to the Woburn C.L., Wilmington. EOEEA Number 16942, dated August 1, 2025.
- Order of Conditions issued by the Wilmington Conservation Commission. DEP File No.: 344-1566. Issued July 17, 2025.
- Massachusetts Division of Fish and Wildlife comments via email. Subject: Re: 608051 Wilmington Maple Meadow Brook. Prepared by Adam Kautza, Coldwater Fisheries Project Leader. Dated February 3, 2025.
- Hydraulic Report. Reconstruction on Route 38 (Main Street), Wilmington, Massachusetts. MassDOT Contract No. 608051. Prepared by Green International Affiliates, Inc. Dated June 26, 2025.
- Comments from Ipswich River Watershed Association. Prepared by Neil Shea, Restoration Program Director. Dated May 28, 2025.

**Pre-Construction**

2. The permittee shall employ an **Environmental Monitor** (EM) to oversee all project activities with the potential to have an adverse impact on BVWs and LUW and to ensure compliance with this WQC and the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan (CP/PP) as required herein. The EM shall have a minimum of five years of professional experience with construction site CP/PP compliance. The EM shall complete the U.S. Environmental Protection Agency (EPA) Construction General Permit (CGP) Inspector Training, or other training that meets the CGP requirements, and provide proof of completion prior to the start of work. The name, contact information, and qualifications of the proposed EM shall be provided to MassDEP for approval prior to the Pre-Construction Meeting required in Condition 5. The name and contact information of the approved EM shall be provided to the Wilmington Conservation Commission prior to the start of work. **(Submittal)**

3. A qualified **Wetland Scientist** (WS) with a minimum of five years of relevant professional experience with wetland and stream replacement and restoration projects shall be employed to oversee all BVW and LUW replacement and restoration activities as proposed in the application, including but not limited to grading, placement of substrate, seeding, vegetation plantings, and placement of wildlife habitat features. The name, contact information, and qualifications of the WS shall be provided to MassDEP for approval prior to the Pre-Construction Meeting required in Condition 5. The name and contact information of the approved WS shall be provided to the Wilmington Conservation Commission prior to the start of work. The EM may also be the WS if the qualifications are met. **(Submittal)**

4. Prior to the Pre-Construction Meeting required in Condition 5, the applicant shall provide MassDEP with the name and contact information of the Resident Engineer (RE) responsible for ensuring that all work complies with the conditions of this WQC. **(Submittal)**

5. A minimum of 21 days prior to the start of ground disturbance or vegetation clearing, MassDOT shall contact MassDEP to schedule an onsite Pre-Construction Meeting to review the approved plans and terms and conditions of this WQC. The RE, the construction contractor, the EM, the WS, a representative from the MassDOT Environmental Section and/or the District Environmental Engineer shall attend the Pre-Construction Meeting. **No work shall commence prior to the Pre-Construction Meeting.**

6. MassDEP shall be copied on applicable submittals to the U.S. Army Corps of Engineers (USACE). These include but are not limited to: Self-Verification Notification Form (SVNF); Pre-Construction Notification (PCN); Work-Start Notification Form; Mitigation Work-Start Notification Form; and Compliance Certification Form. The Work-Start Notification Form shall be submitted at least 14 days before the anticipated start of work and the Compliance Certification Form shall be submitted within 30 days following the completion of the authorized work. **(Submittal)**

7. A CP/PP shall be developed and implemented as required by 314 CMR 9.06(6)(a)8. A minimum of 14 days prior to the start of work, MassDOT shall submit the CP/PP for review and approval. If the EPA CGP applies, the Stormwater Pollution Prevention Plan (SWPPP) may serve as the CP/PP, providing it includes the measures required to be in the CP/PP per these Special Conditions, in addition to the measures specifically required by the CGP. Any subsequent changes to the Final CP/PP (defined herein as including the construction period SWPPP if applicable) must be approved by MassDEP. **(Submittal)**

8. Training regarding erosion and sedimentation controls is required. The CP/PP Inspector, and any other relevant personnel responsible for erosion and sedimentation controls shall complete the EPA CGP Inspector Training, or other training that meets the CGP requirements, as well as complete a comprehensive review of the Final CP/PP. Proof of completion of the training shall be submitted to MassDEP prior to the start of work. **(Submittal)**

9. The CP/PP shall identify, but shall not be limited to, staging and laydown areas in relation to BVWs and LUW, proposed dewatering methods and locations, proposed stockpile locations and their proximity to catch basins or other drainage conveyances that discharge to wetland resource areas, and the location of construction-period erosion and sedimentation controls.

Stockpiles shall be located no less than 50 feet from BVWs, LUW, catch basins, or other drainage conveyances that discharge to BVWs or LUW.

10. A minimum of 14 days prior to the start of work, MassDOT shall submit a Control of Water Plan for review and approval. The Plan shall include a description of proposed methods to isolate and dewater work areas within streams while maintaining stream flow, including but not limited to the method of isolation (e.g., steel sheeting or sandbag cofferdam), dewatering methods and locations and specifications for stream bypass systems as applicable. The Control of Water Plan shall include a plan depicting BVW and LUW boundaries, and the location of all relevant methods and materials which shall be located within the BVW and LUW impact areas approved herein. The plan shall meet the requirements of the CP/PP and be specific to the Project. Dewatering and stream bypasses shall be conducted under the supervision of the RE or other project staff with knowledge of these practices and comply with the applicable conditions identified herein. **(Submittal)**

11. Prior to the start of work, approved erosion and sedimentation control measures shall be installed per the approved CP/PP and as applicable, the manufacturer specifications. Erosion and sedimentation control measures may consist of, but are not limited to, silt fence, staked straw bales, silt/turbidity curtains, compost filter tubes, etc.

12. Prior to the Pre-Construction Meeting, the boundaries of BVWs and LUW shall be re-flagged where they are within 50 feet of the limits of work. In the event BVW and LUW boundaries overlap, the outermost boundary (i.e., closest to the proposed work) shall be flagged. All boundary markers, once in place, shall remain in place throughout construction until all disturbed surfaces have been permanently stabilized. Boundary markers shall be fully evaluated annually and refreshed where needed. Implementation of and compliance with this requirement shall be documented by the EM or WS. All construction personnel shall be made aware of these markers.

13. Soil evaluations confirming at least two feet of separation between the infiltration SCMs and estimated seasonal high groundwater shall be provided prior to the Pre-Construction Meeting. If at least two feet of separation cannot be confirmed, an alternatives analysis shall be submitted to MassDEP demonstrating whether a redesigned infiltration SCM or alternative SCMs are practicable in that location. **(Submittal)**

14. The SCM inspection and maintenance frequencies in the Operations and Maintenance Plan shall be revised to be in accordance with Volume 2, Chapter 2 of the Stormwater Handbook. The revised Operations and Maintenance Plan shall be submitted to MassDEP for review and approval prior to the Pre-Construction Meeting. **(Submittal)**

15. Prior to any work within the 1% annual chance of flooding zone within Project limits, including mobilization or storage of equipment and materials, a Flood Contingency Plan shall be submitted to MassDEP for review and approval that includes at a minimum the following information and provisions: **(Submittal)**

a. The RE and/or Contractor shall monitor the National Weather Service forecast daily, and upon issuance of a flood watch or flood warning for the Project area, the Flood Contingency Plan shall be implemented.

b. Upon implementation of the Flood Contingency Plan, all construction equipment and materials located below the Base Flood Elevation (BFE) shall be removed and placed in an upland location above the BFE and outside of BVW and/or LUW.

c. Anchored stationary equipment may remain below the BFE if demonstrated to be required and upon written approval from MassDEP. In the event semi-stationary equipment cannot be feasibly removed before the arrival of the storm, they shall be adequately secured and MassDEP shall be notified prior to the storm.

d. A requirement to inspect and maintain all erosion and sedimentation controls, and stabilize all exposed soils as needed below the BFE prior to the storm shall be included.

e. A plan depicting at a minimum, but not limited to, BVW and/or LUW boundaries, the Project limits, and the BFE boundary based on ground elevations shall be included.

f. Staff and materials must be available 24 hours per day, seven days per week to implement the Flood Contingency Plan. The name, affiliation, title, email address, and phone number of each person responsible for implementing the Flood Contingency Plan shall be included.

g. No work shall commence until the flood watch or flood warning has ended, all areas below the BFE have been inspected, and erosion and sedimentation controls are maintained as needed.

16. The Contractor shall develop an Invasive Plant Management Strategy (IPMS) to be submitted to MassDEP for review and approval prior to the Pre-Construction Meeting. The IPMS shall be implemented as approved. **(Submittal)**

17. If needed, use of herbicides to control invasive species shall be implemented in accordance with the approved IPMS and with the following requirements:

a. Herbicides shall only be applied by a Licensed Applicator;

b. Only herbicides registered with the Massachusetts Pesticide Board Subcommittee shall be applied to the targeted area/species;

c. The manufacturer's label directions must be followed, in addition to any conditions imposed by other state or local authorities;

d. Herbicide application shall use no more than the minimum application rate to accomplish removal of the target species; and

e. Applicants must obtain a BRP WM04 Herbicide Permit from the MassDEP Wetlands Program, Dredge Unit before performing herbicide application in waterbodies (traditionally lakes and ponds).

18. Final Construction Plans (the plans provided to the contractor) shall be submitted for review at least 30 days prior to the Pre-Construction Meeting. Once MassDEP provides written approval, the updated set of plans shall become the "Final Plan of Record." The Plan shall be prepared and signed by a Professional Engineer in the Commonwealth of Massachusetts and shall incorporate all revisions and additions to the original plans that have been approved as discussed herein. **(Submittal)**

**Construction Period**

19. No more than **2,630 sf** of permanent and **2,834 sf** of temporary impacts to BVWs shall occur. No more than **2,195 sf** of permanent and **601 sf** of temporary impacts to LUW shall occur. No more than **715 cy** of dredging in LUW shall occur. All work shall avoid unapproved impacts to BVW and LUW.

20. EM inspections shall occur at least once every seven calendar days and within 24 hours of a storm event that produces 0.5 inches or more of rain within a 24-hour period. The EM duties shall include, but are not limited to, oversight of installation and maintenance of erosion and sedimentation controls and Stormwater Control Measures (SCMs), dewatering activities, cofferdam installation and removal, concrete washout containment, dust control, and hazardous or toxic material containment, as applicable. The EM shall only be responsible for the oversight of hazardous and toxic materials to the extent that the CP/PP requires. All erosion and sedimentation controls shall be inspected by the EM prior to the start of work in each area, and all dewatering methods and locations shall be inspected by the EM prior to use. The EM shall have the authority to require modifications to or additional erosion and sedimentation controls or dewatering controls as they deem necessary to comply with this WQC and the CP/PP.

21. The EM shall submit to MassDEP and the Wilmington Conservation Commission at least one report every two calendar weeks during active construction and once every month while work is shut down until the site achieves final stabilization. The permittee shall not participate in the preparation of any EM report. The report shall include:

    a. Relevant weather information including storm event amounts and durations since the last inspection;

    b. A general description of current and foreseeable construction activities;

    c. The status and effectiveness of erosion and sedimentation controls, stormwater control measures, and dewatering methods;

    d. Evidence of erosion, sedimentation, or improper material containment or spills;

    e. A description of any unauthorized discharges to BVWs or LUW, and actions taken to immediately stop the discharge;

    f. Recommendations to correct any deficiencies identified during the inspection;

g. Due dates to resolve corrective actions as specified in the CP/PP and WQC, and dates and descriptions of the resolutions as they are completed;

h. Representative photos of current site conditions, erosion and sedimentation controls, stormwater control measures, and dewatering methods;

i. Specific photos of any unauthorized discharges to BVWs or LUW, deficiencies or non-compliance requiring corrective actions, and corrective actions that have been undertaken; and

j. Any other recommendations for site management to promote compliance with this WQC and the CP/PP.

22. The EM shall immediately report any unauthorized discharges to BVWs or LUW, or any other significant non-compliance with this WQC or the CP/PP to MassDEP, MassDOT, the RE, and the Wilmington Conservation Commission. The EM shall have stop-work authority in the event of significant non-compliance with this WQC and/or the CP/PP. The EM shall be authorized to respond to and communicate directly with MassDEP on all matters related to compliance with this WQC. MassDEP may make any requests directly to the EM and copy MassDOT, and MassDOT shall authorize the EM to fulfill such request in direct coordination with MassDEP.

23. The Project shall identify one individual with at least three years of experience with construction period erosion and sedimentation control to be responsible for erosion and sedimentation control inspections (CP/PP Inspector). Under the direction of the CP/PP Inspector, inspection and maintenance of erosion and sediment controls in active work areas may be performed by both the Contractor and RE or other MassDOT project staff. Maintenance is the responsibility of the Contractor; however, the permittee shall be ultimately responsible for erosion and sedimentation control failure. The EM, RE, and/or contractor shall immediately notify MassDEP and the Wilmington Conservation Commission if any unauthorized discharges to BVWs or LUW occur.

24. CP/PP inspections shall occur at least once every seven calendar days and within 24 hours of a storm event that produces 0.5 inches or more of rain within a 24-hour period, or at a more stringent frequency if the CP/PP requires.

25. Copies of CP/PP Inspection and Maintenance Log Forms shall be submitted to MassDEP within 14 days upon request.

26. Disturbed areas shall be stabilized immediately after activities have permanently ceased or will be temporarily inactive for 14 or more calendar days. The installation of stabilization measures shall be implemented as soon as practicable, but no later than 14 calendar days after stabilization has been initiated.

27. Work within LUW shall be conducted in low or no-flow conditions to the extent practicable. Notice shall be provided to MassDEP and the Wilmington Conservation Commission within 24 hours prior to the commencement of dewatering. Dewatering methods and location(s) shall be approved by the RE or other project staff with knowledge of these practices prior to use to

ensure consistency with the approved Control of Water Plan, and shall be documented in the CP/PP. There shall be no discharge of untreated dewatered stormwater or groundwater to BVWs or LUW. Any discharges shall be visibly free of sediment.

28. Additional erosion and sedimentation control materials shall be stored on-site at all times for emergency and routine replacement. Materials shall be kept covered, dry, and accessible at all times. The CP/PP Inspector and EM shall be responsible for anticipating the need for and installation of additional erosion and sedimentation controls and shall have the authority to require additional erosion control measures to protect wetland resource areas beyond what is shown on the plans if field conditions or professional judgment dictate that additional protection is necessary.

29. The Contractor shall monitor the National Weather Service forecast for updates, and upon issuance of a flood watch for the 1% annual chance of flooding zone, shall implement the flood contingency plan referenced in Condition 15.

30. Any storm drains with potential to receive discharge from stockpiled materials or construction operations shall be managed to inhibit the inflow of sediment while not increasing the likelihood of roadway flooding during periods of precipitation. The CP/PP shall specify measures to implement this. Filter fabric stretched under storm drain inlet grates are not acceptable for this purpose.

31. Stockpiles shall be located no less than 50 feet from BVWs, LUW, catch basins, or other drainage conveyances that discharge to BVWs or LUW.

32. The contractor shall have designated washout areas for concrete equipment that will be comprised of impermeable material and sized to contain project concrete wastes and wash water. Concrete wash out areas shall be located no less than 50 feet from BVWs, LUW, and catch basins or other drainage conveyances that discharge directly or indirectly to BVWs or LUW.

33. Refueling, washing, and cleaning of vehicles and other construction equipment shall not take place within 50 feet of BVWs or LUW and any wash water shall be contained such that it does not drain toward BVWs or LUW. MassDEP shall explicitly approve in writing any deviation to this condition for oversized stationary vehicles.

34. The contractor shall have spill containment kits on site. In the event of a release of fuels and/or oils, the local fire department, MassDEP Emergency Response and MassDEP Wetlands Program Highway Unit shall be contacted, and in addition, the MassDEP Bureau of Waste Site Cleanup shall be notified per the requirements of the Massachusetts Contingency Plan, 310 CMR 40.0000.

35. Construction vehicles or other vehicles or heavy equipment are prohibited from traversing over the proposed infiltration SCMs to avoid compaction of soils during construction. These areas shall be demarcated by silt fence with signage, or high visibility fencing. If access through the

location of an infiltration SCM is unavoidable, MassDOT shall request written approval from MassDEP.

36. Construction vehicles and equipment shall not enter the BVW or LUW unless authorization is provided by way of this permit or amendment. The Contractor shall use equipment with boom reach capabilities and other measures to avoid inadvertent impacts to jurisdictional resource areas as a result of excavation, riprap placement, and/or bridge/pier demolition materials.

**Dredging**

37. MassDEP shall be notified one week prior to the start of dredging so that staff may inspect the work for compliance throughout the project.

38. No later than 21 days prior to commencement of dredging activity, a Dredged Material Dewatering Plan shall be submitted to MassDEP for review and approval. At a minimum, the Plan shall include but not be limited to the type of containment, method of dewatering (i.e. mechanical or by gravity), method of collecting the dewatered effluent and method of disposal. **(Submittal)**

39. Best Management Practices (BMPs) shall be employed by the contractor to protect resource areas located adjacent to the proposed staging/temporary dredged material stockpiling and dewatering areas. Sediment stockpiles shall be constructed in accordance with the MassDEP approved project plans, stabilized, bottom-lined if not placed on paved surfaces and securely covered with wind tear resistance tarpaulin, polyethylene sheeting or similar impermeable material at all times, and properly labeled. Stockpile covers shall be securely weighed down. Stockpiles shall also be secured to restrict access by the public and shall be set back at least 10 feet from temporary construction access roads or other areas and activities which could disturb the stockpiles and associated erosion controls; if the 10-foot setback cannot be met, then a MassDEP-approved barrier shall be provided. Inspection of the sediment containment and dewatering location and associated erosion controls shall be conducted daily and within 24 hours of a storm that produces 0.5 inches or more of rain. Any observed deficiency shall be corrected or repaired in a timely manner.

40. In the event of a precipitation or storm event, the site shall be secured beforehand in such a way as to protect resource areas and waters on site and downstream of the site, including covering of stockpiles of dredged material. Sediment stockpile areas shall be inspected in line with the frequency of the CP/PP required in Condition 7. Any observed deficiency shall be corrected or repaired in a timely manner to prevent discharge from the stockpiled material. If stormwater runoff and erosion is observed from stockpiled dredged material, additional erosion and/or damage prevention controls measures shall be implemented.

41. Measures shall be in place to prevent turbid waters, due to dredging, demolition, or debris removal activities, from extending past the limits of work into Maple Meadow Brook and the intermittent stream. These measures can be items such as turbidity curtains and/or sheet piles.

42. If visual turbidity escapes the controls in place, as described in Condition 41, work shall stop immediately and MassDEP shall be notified within 24 hours. Work shall not resume until the issue is corrected and to the satisfaction of MassDEP.

43. All turbidity controls shall be inspected daily by the EM or RE or a designated MassDOT Project Staff. If any damage is observed the controls in place will be replaced or repaired immediately.

44. If dredged sediment is disposed of off-site, MassDEP shall be notified in writing of the name and location of the upland licensed facilities accepting the dredged material for disposal or reuse for review and approval. If the licensed facility is located out of state, documentation shall be provided to MassDEP that the dredged material disposal/reuse has been approved and will be accepted by the receiving State. The dredged material shall not be transported to the facility without concurrence of MassDEP.

**Wetland Mitigation**

45. A minimum of 3,510 sf of wetland replication shall be completed in coordination with an approved WS. The WS shall oversee all BVW replication and restoration, including final grading, seeding, and planting. The WS shall confirm that constructed BVW replication and restoration areas have adequate soils and hydrology to promote wetland plant species prior to seeding and installation of plantings and shall recommend measures to amend soils and promote wetland hydrology as needed.

46. Planting and seeding shall not take place between November 15$^{th}$ and April 15$^{th}$, except as allowed by MassDEP in writing. The WS shall inspect trees and shrubs to ensure they are healthy prior to planting. Trees and shrubs deemed unhealthy in the professional judgment of the WS shall be replaced. Plantings and seed mixes shall consist of native and non-invasive species. Species may be substituted at the recommendation of the WS, and review and approval by MassDEP.

47. At least 75% of the surface area of the BVW replication and restoration areas shall be vegetated with indigenous wetland plant species within two growing seasons, or the period required by the Section 404 permit, whichever is longer. Additionally, evidence of hydrology, including hydric soil formation shall be submitted at the same time. Annual monitoring reports shall be submitted by the WS no later than January 15$^{th}$ each year. Monitoring reports shall include an assessment based on the approved success criteria, representative photos, and recommended corrective actions as needed. **(Submittal)**

48. MassDEP reserves the right to determine the success or failure of the BVW replication and restoration areas, and reserves the right to require additional plantings, regrading, invasives removal or other measures deemed necessary to promote success.

**Stream Mitigation**

49. The WS shall oversee all LUW restoration. Placement of streambed materials shall take place in no- or low-flow conditions. The Control of Water Plan required in Condition 10 shall include measures to create no-flow conditions for this work such as a pump bypass system or other

dewatering method, if needed. Placement of streambed materials during greater than low-flow conditions shall require a placement plan, with a narrative describing turbidity control measures, submitted to MassDEP for review and approval.

50. Upon completion of the LUW restoration, the WS shall provide photographs and a summary of the completed work to MassDEP and the Wilmington Conservation Commission. **(Submittal)**

51. Water shall be slowly introduced back into the restored and dewatered LUW work areas as to not cause erosion and sedimentation. This work shall be overseen by the WS.

52. MassDEP reserves the right to determine the success or failure of the LUW restoration areas and reserves the right to require additional measures deemed necessary to promote success.

**Post-Construction**

53. All temporary erosion controls shall be removed at the conclusion of work once the surrounding area has achieved final stabilization.

**General Conditions**

54. Any proposed alterations, minor plan changes, or amendment requests, as well as any required submittals shall be sent by email for review and approval to heidi.davis@mass.gov and ryan.hale@mass.gov. **(Submittal)**

55. This WQC remains in effect for the same duration as the Section 404 permit that requires it.

56. No Special Condition set forth herein shall be construed or operate to prohibit MassDEP from taking enforcement against MassDOT or its contractors for any failure to comply with the terms and requirements of this WQC.

57. No activity authorized by this WQC may begin prior to expiration of the 21-day appeal period, or until a final decision is issued by MassDEP in the event of an appeal.

Failure to comply with this Certification is grounds for enforcement, including civil and criminal penalties, under MGL Ch. 21 §42, MGL Ch. 21A §16, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

This Certification does not relieve the applicant of the obligation to comply with other appropriate state or federal statutes or regulations.

NOTICE OF APPEAL RIGHTS

a.) Appeal Rights and Time Limits

Certain persons shall have a right to request an adjudicatory hearing concerning certifications by MassDEP when an application is required: (a) the applicant or property owner; (b) any person aggrieved by the decision who has submitted written comments during the public comment period; (c) any ten

(10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; or (d) any governmental body or private organization with a mandate to protect the environment which has submitted written comments during the public comment period. Any person aggrieved, any ten (10) persons of the Commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. c.30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to MassDEP, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Case Administrator
Department of Environmental Protection
100 Cambridge Street, 9th Floor
Boston, MA 02114

A copy of the request shall at the same time be sent by certified mail or hand delivery to the Department of Environmental Protection at:

Department of Environmental Protection
Wetlands Program, Highway Unit
100 Cambridge Street, 8th floor
Boston, MA 02114

b.) Contents of Hearing Request

A Notice of Claim for Adjudicatory Hearing shall comply with MassDEP's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6), and shall contain the following information pursuant to 314 CMR 9.10(3):

1. the 401 Certification Transmittal Number;
2. the complete name of the applicant and address of the project;
3. the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax and telephone numbers, and address of the attorney;
4. if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
5. a clear and concise statement that an adjudicatory hearing is being requested;
6. a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to this Certificate, including specifically the manner in which it is alleged to be inconsistent with the MassDEP's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification; and
7. a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Conservation and Recreation (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private

water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

c.) Filing Fee and Address

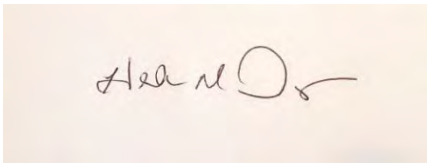
The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars ($100) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
Commonwealth Master Lockbox
PO Box 4062
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. MassDEP may waive the adjudicatory hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

Should you have any questions relative to this permit, please contact myself or Ryan Hale at heidi.davis@mass.gov and ryan.hale@mass.gov.

Very truly yours,



Heidi M. Davis
Highway Unit Supervisor

Ecc: DEP NERO – Jill Provencal
USACE – Dan Vasconcelos
USACE – Kevin Newton
MassDOT – Melissa Lenker
MassDOT – Kevin Thompson
MassDOT – Eamon Kernan
Green International Affiliates – Oxana Fartushnaya
Ipswich River Watershed Association - Neil Shea
Wilmington Conservation Commission – Cameron Lynch, Conservation Agent

**ATTACHMENT A**
**PRE-CONSTRUCTION SUBMITTAL CHECKLIST**

**Reconstruction of Route 38 (Main Street) from Route 62 to the Woburn City Line**
**Wilmington, MA**

**THIS CHECKLIST MUST BE COMPLETED PRIOR TO THE START OF WORK. NOTE THAT SOME CONDITIONS REQUIRE THAT INFORMATION BE SUBMITTED A SPECIFIC NUMBER OF DAYS PRIOR TO THE START OF WORK OR THE PRE-CONSTRUCTION MEETING.**

**Pre-Construction Meeting Date:** _____

| Condition | Required Submittal | Due Date | Date Submitted | Date Approved |
|---|---|---|---|---|
| **PRE-CONSTRUCTION SUBMITTAL REQUIREMENTS** | | | | |
| 2 and 3 | Name, contact information, and qualifications of the EM and WS, including specific experience and years to meet requirement | Prior to Pre-Construction Meeting | | |
| 4 | Name and contact information of the RE | Prior to Pre-Construction Meeting | | |
| 6 | USACE Work-Start Notification Form | 14 days prior to work start | | |
| 7 | CP/PP | 14 days prior to work start | | |
| 8 | EM Verification of SWPPP Training | Prior to work start | | |
| 10 | Control of Water Plan | 14 days prior to work start | | |
| 13 | Soil Evaluations | Prior to Pre-Construction Meeting | | |
| 14 | Revised Operations and Maintenance Plan | Prior to Pre-Construction Meeting | | |
| 15 | Flood Contingency Plan | Prior to any work within 1% annual chance of flooding zone | | |

| | | | | |
|---|---|---|---|---|
| 16 | Invasive Plant Management Strategy | Prior to Pre-Construction Meeting | | |
| 18 | Final Construction Plans | 30 days prior to Pre-Construction Meeting | | |

重要 महत्वपूर्ण σημαντικός Important կարեւոր quan trọng مهم

## Communication for Non-English-Speaking Parties

***This document is important and should be translated immediately.***

If you need this document translated, please contact MassDEP's Director of Environmental Justice at the telephone number listed below.

### Español Spanish

Este documento es importante y debe ser traducido inmediatamente. Si necesita traducir este documento, póngase en contacto con el Director de Justicia Ambiental de MassDEP (*MassDEP's Director of Environmental Justice*) en el número de teléfono que figura más abajo.

### Português Portuguese

Este documento é importante e deve ser traduzido imediatamente. Se você precisar traduzir este documento, entre em contato com o Diretor de Justiça Ambiental do MassDEP no número de telefone listado abaixo.

### 繁體中文 Chinese Traditional

本文檔很重要，需要即刻進行翻譯。
如需對本文檔進行翻譯，請透過如下列示電話號碼與 MassDEP 的環境司法總監聯絡。

### 简体中文 Chinese Simplified

*这份文件非常重要，需要立即翻译。*
如果您需要翻译这份文件，请通过下方电话与 MassDEP 环境司法主任联系。

### Ayisyen Kreyòl Haitian Creole

Dokiman sa a enpòtan epi yo ta dwe tradui l imedyatman. Si w bezwen tradui dokiman sa a, tanpri kontakte Direktè. Jistis Anviwònmantal MassDEP a nan nimewo telefòn ki endike anba a.

### Việt Vietnamese

Tài liệu này và quan trọng và phải được dịch ngay. Nếu quý vị cần bản dịch của tài liệu này, vui lòng liên hệ với Giám Đốc Phòng Công Lý Môi Trường của MassDEP theo số điện thoại được liệt kê bên dưới.

### ប្រទេសកម្ពុជា Khmer/Cambodian

ឯកសារនេះមានសារៈសំខាន់
ហើយគប្បីត្រូវបានបកប្រែភ្លាមៗ.
ប្រសិនបើអ្នកត្រូវការអោយឯកសារនេះបកប្រែ
សូមទាក់ទងនាយកផ្នែកយុត្តិធម៌បរិស្ថានរបស់
MassDEPតាមរយៈលេខទូរស័ព្ទដែលបានរាយដូចខាងក្រោម។

### Kriolu Kabuverdianu Cape Verdean

Es dokumentu sta important i tenki ser tradusidu immediatamenti. Se nho ta presisa ke es dokumentu sta tradisidu, por favor kontata O Diretor di Justisia di Environman di DEP ku es numero di telifoni menxionadu di baixo.

**Contact Deneen Simpson 857-406-0738**
**Massachusetts Department of Environmental Protection**
**100 Cambridge Street 9th Floor Boston, MA 02114**
TTY# MassRelay Service 1-800-439-2370 • https://www.mass.gov/environmental-justice
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

## Русский Russian

Это чрезвычайно важный документ, и он должен быть немедленно переведен. Если вам нужен перевод этого документа, обратитесь к директору Департамента экологического правосудия MassDEP (MassDEP's Director of Environmental Justice) по телефону, указанному ниже.

## العربية Arabic

*هذه الوثيقة مهمة وتجب ترجمتها على الفور.*

إذا كنت بحاجة إلى ترجمة هذه الوثيقة، فيرجى الاتصال بمدير العدالة البيئية في MassDEP على رقم الهاتف المذكور أدناه.

## 한국어 Korean

*이 문서는 중대하므로 즉시 번역되어야 합니다.*
본 문서 번역이 필요하신 경우, 매사추세츠 환경보호부의 "환경정의" 담당자 분께 문의하십시오. 전화번호는 아래와 같습니다.

## հայերեն Armenian

Այս փաստաթուղթը կարևոր է, և պետք է անհապաղ թարգմանել այն:
Եթե Ձեզ անհրաժեշտ է թարգմանել այս փաստաթուղթը, դիմեք Մասաչուսեթսի շրջակա միջավայրի պահպանության նախարարության (MassDEP) Բնապահպանական հարցերով արդարադատության ղեկավարին (Director of Environmental Justice)՝ ստորև նշված հեռախոսահամարով

## فارسی Farsi Persian

این نوشتار بسیار مهمی است و باید فوراً ترجمه شود.
اگر نیاز به ترجمه این نوشتار دارید لطفاً با مدیر عدالت محیط زیستی MassDEP در شماره تلفن ذکر شده زیر تماس بگیرید.

## Français French

Ce document est important et doit être traduit immédiatement. Si vous avez besoin d'une traduction de ce document, veuillez contacter le directeur de la justice environnementale du MassDEP au numéro de téléphone indiqué ci-dessous.

## Deutsch German

Dieses Dokument ist wichtig und muss sofort übersetzt werden. Wenn Sie eine Übersetzung dieses Dokuments benötigen, wenden Sie sich bitte an MassDEP's Director of Environmental Justice *(Direktor für Umweltgerechtigkeit in Massachusetts)* unter der unten angegebenen Telefonnummer.

## Ελληνική Greek

Το έγγραφο αυτό είναι πολύ σημαντικό και πρέπει να μεταφραστεί αμέσως. Αν χρειάζεστε μετάφραση του εγγράφου αυτού, παρακαλώ επικοινωνήστε με τον Διευθυντή του Τμήματος Περιβαλλοντικής Δικαιοσύνης της Μασαχουσέτης στον αριθμό τηλεφώνου που αναγράφεται παρακάτω

## Italiano Italian

Questo documento è importante e deve essere tradotto immediatamente. Se hai bisogno di tradurre questo documento, contatta il Direttore della Giustizia Ambientale di MassDEP al numero di telefono sotto indicato.

## Język Polski Polish

Ten dokument jest ważny i powinien zostać niezwłocznie przetłumaczony. Jeśli potrzebne jest tłumaczenie tego dokumentu, należy skontaktować się z dyrektorem ds. sprawiedliwości środowiskowej MassDEP pod numerem telefonu podanym poniżej.

## हिन्दी Hindi

*यह दस्तावेज महत्वपूर्ण है और इसका अनुवाद तुरंत किया जाना चाहिए।* यदि आपको इस दस्तावेज का अनुवाद कराने की जरूरत है, तो कृपया नीचे दिए गए टेलीफोन नंबर पर MassDEP के पर्यावरणीय न्याय निदेशक से संपर्क करें।

**Contact Deneen Simpson 857-406-0738**
**Massachusetts Department of Environmental Protection**
**100 Cambridge Street 9th Floor Boston, MA 02114**
TTY# MassRelay Service 1-800-439-2370 • https://www.mass.gov/environmental-justice
(Version revised 8.2.2023) 310 CMR 1.03(5)(a)

April 29th,
Dan Vasconcelos,
US Army Corp of Engineers

Subject: 404 Pre-Construction Notification
Response to Administrative Completeness and Technical Deficiency Review.
Reconstruction on Route 38 from Route 62 to Woburn C.L.

Comment 1: The plans are too large in terms of file size. I extracted them from the document and tried to minimize the file size, but they are still 60 MB. We typically ask that plans be no larger than 10 MB, but that may be difficult in this case. Please try to reduce the file size to the 10-20 MB range or below. If this is not possible, you may need to delete some sheets. For Corps purposes the plans should focus on impacts within Corps jurisdiction (plan views and relevant cross-sections). If you do need to remove plans, I would suggest starting with the drainage plans (sheets 16-36 and 42-44), some of the detail sheets (sheets 53, 55), and the boring logs (sheets 61-62) and seeing if that brings the file size down sufficiently. If not, we could probably cut some of the landscape plans if necessary (e.g. sheet 51). If the file is still very large we can discuss possibly removing other sheets. If sheets are removed, please renumber the sheets to form a sequentially numbered set. **–**

**Response: The plans have been reduced to the maximum extent we could (they were over 100 MB before). After removing the suggested sheets and applying multiple file size reduction techniques, the file size went down to about 23.5 MB. We revised this set to be called "ACOE PLANS" since they ACOE doesn't need the selected sheets while DEP needs the Drainage plans, details, and other sheets we removed for ACOE. If this size is still too big for ACOE, we will split them up into parts not to exceed 20MB.**

Comment 2: On plan sheet 10 of 68, it lists 2,378 square feet of permanent impacts to WOTUS. This appears to be a typo, since in other locations the impact total is listed as 2,380 square feet. Please revise accordingly. **–**

**Response: The impacts were revised per comments # 3. The impacts numbers were updated accordingly.**

Comment 3: On plan sheet 10, the area within the culvert is typically considered a permanent discharge of fill. Please revise the plans and impact calculations accordingly.

**Response: Addressed. See revised Impacts Sheets.**

Comment 4: On plan sheet 10, the proposed culvert dimensions are listed as 3'W x 1'6"H. This may be a typo since the culvert is listed as 3' x 3' elsewhere. Please revise accordingly.

**Response: Addressed. See revised Impacts Sheets.**

Comment 5: On plan sheet 10, on the east side of the road, the unnamed intermittent stream appears to end abruptly and is surrounded by Wetland A and associated wetland impacts. Is this drawn accurately, and if so, can you please explain why the stream and OHW delineation ends in this manner? Do you have photos of this location that would help to illustrate the site conditions?

**Response: Original impacts didn't extend as far. We extended the bank accordingly. See revised Impacts Plans and the additional photo log of the Unnamed Intermittent Stream's outlet on the east side of Route 38.**

Comment 6: On plan sheet 13, there appear to be permanent wetland impacts due to stone placement in the northeast and northwest bridge quadrants, but these are not shaded in. Please revise the plans to shade these impact areas appropriately, and ensure the impact numbers reflect these impacts.

**Response: Shading was inadvertently frozen. Addressed – see revised Impacts Plans.**

Comment 7: On plan sheet 56, the culvert section shows embedment with 12" of natural streambed material, whereas on sheet 59 the culvert reinforcement detail shows 6" of natural streambed material over 6" of crushed stone. Please clarify.

**Response: Addressed. See revised culvert detail sheets.**

Comment 8: Since the project crosses a FEMA Floodway, I will need to coordinate with FEMA as required under our GP coordination procedures. The narrative states the project "will neither result in any increase in flood elevations within the community during the occurrence of Maple Meadow Brook's base flood discharge, nor necessitate any revision to the river's existing floodway delineation in proximity to the project location and thereby meets applicable NFIP base floodplain development performance standards." FEMA often requests to review the hydraulic study report that led to such conclusions. Is such a study available that you could provide to me to share with FEMA?

**Response: The Hydraulic Report is currently under MassDOT Hydraulic Section's review until 5/9. MassDOT Environmental will follow up with the completed Hydraulic Report when it becomes available**

Comment 9: When the ESA screening was completed on IPaC, the monarch butterfly was listed as a Candidate species. It has since been updated to a Proposed Threatened species. I will need the lead federal agency (FHWA, or MassDOT acting on behalf of FHWA) to provide an updated statement on whether or not the project is expected to jeopardize the continued existence of the monarch butterfly and if a conference with USFWS is therefore required.

**Response: See attached email with the requested statement from MassDOT Wildlife Unit.**

## Oxana Fartushnaya

**From:** Hoogeboom, Julia A. (DOT) <Julia.A.Hoogeboom@dot.state.ma.us>
**Sent:** Tuesday, April 22, 2025 10:03 AM
**To:** Oxana Fartushnaya; Larner, Erica N. (DOT)
**Cc:** Kernan, Eamon (DOT); Thompson, Kevin S. (DOT); Paulson, David J. (DOT); 1303319X MassDOT Wilmington Rte 38; Lenker, Melissa (DOT); Dennis Vertiyev; Joshua Ward; Sam Spelman
**Subject:** RE: Wilmington (608051) PCN Submittal - RECONSTRUCTION ON ROUTE 38 (MAIN STREET), FROM ROUTE 62 TO THE WOBURN C.L.

Erica,

MassDOT, on behalf of FHWA, has reviewed the project's action and determined the project will not jeopardize the continued existence of the proposed species, Monarch Butterfly (*Danaus Plexippus)* and Tricolored Bat *(Perimyotis subflavus)*.

Please forward this email to Dan V. It should be sufficient for ACOE's needs without updating the documentation.

Thank you,
Julia

**Julia Hoogeboom (she/her)**
**Wildilfe and Endangered Species Unit Coordinator**
**MassDOT – Highway Division**
10 Park Plaza, Boston MA 02116
857-772-1749

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**From:** Hoogeboom, Julia A. (DOT)
**Sent:** Friday, April 18, 2025 9:18 AM
**To:** Oxana Fartushnaya <ofartushnaya@greenintl.com>; Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Cc:** Kernan, Eamon (DOT) <Eamon.Kernan@dot.state.ma.us>; Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>; Paulson, David J. (DOT) <David.J.Paulson@dot.state.ma.us>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>; Lenker, Melissa (DOT) <Melissa.Lenker@dot.state.ma.us>; Dennis Vertiyev <dvertiyev@greenintl.com>; Joshua Ward <jward@greenintl.com>; Sam Spelman <sspelman@greenintl.com>
**Subject:** RE: Wilmington (608051) PCN Submittal - RECONSTRUCTION ON ROUTE 38 (MAIN STREET), FROM ROUTE 62 TO THE WOBURN C.L.

Hi All,

I will update the Section 7 document today.

Thanks,
Julia

**Julia Hoogeboom (she/her)**
**Wildilfe and Endangered Species Unit Coordinator**
**MassDOT – Highway Division**

**Photo Log – January 11, 2025**




**Photo 01 –** View east/northeast from Route 38




**Photo 02 –** View south-southeast on Route 38 (approx. Sta. 218)

# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
# HIGHWAY DIVISION

| WILMINGTON<br>ROUTE 38 (MAIN STREET) | | | |
|---|---|---|---|
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
| MA | - | 1 | 391 |
| PROJECT FILE NO. | 608051 | | |

**TITLE SHEET & INDEX**

PLAN AND PROFILE OF

## ROUTE 38 (MAIN STREET)

W-38-003 (C99), W-38-011 (802), W-38-002 (2NQ)

IN THE TOWN OF

## WILMINGTON

## MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. -

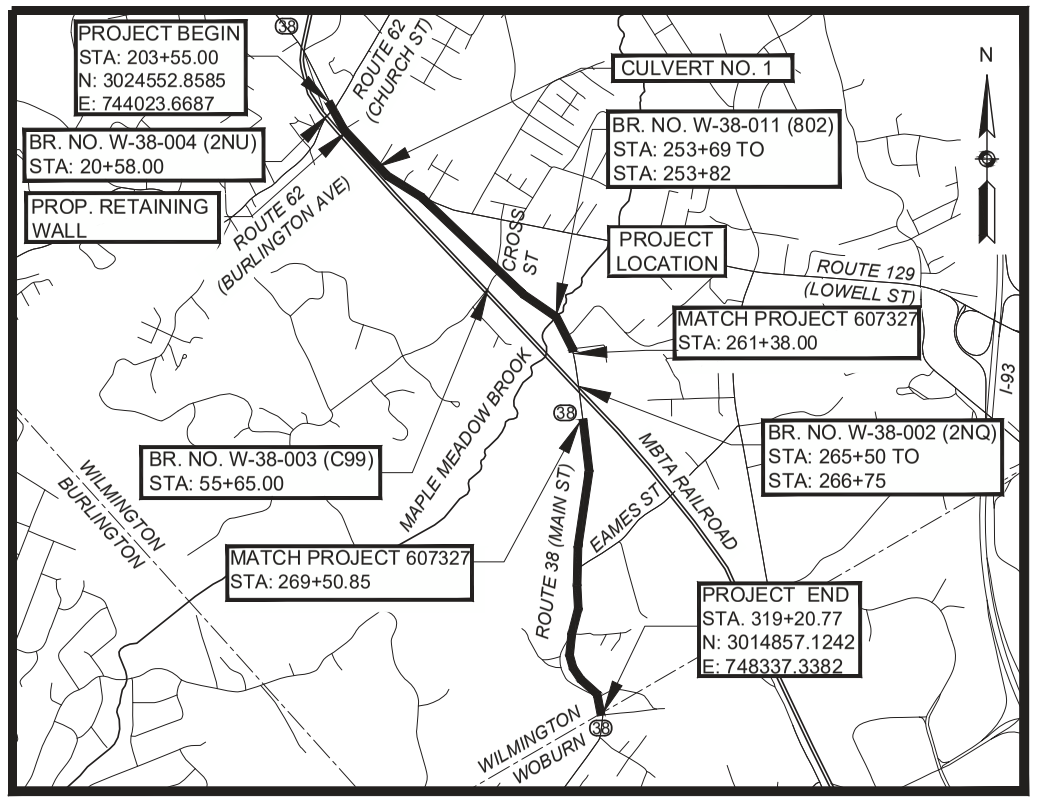
# 100% SUBMITTAL

THESE PLANS ARE SUPPLEMENTED BY THE 2024 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

**ACOE PLAN SET**
**04/10/2025**
**REVISED 04/23/2025**

INDEX


| SHEET NO. | DESCRIPTION |
|---|---|
| 1 | TITLE SHEET & INDEX |
| 2 | LEGEND & ABBREVIATIONS |
| 3 | GENERAL NOTES |
| 4 | KEY PLAN |
| ~~5~~ | ~~BORING LOCATION PLAN~~ |
| ~~6 – 8~~ | ~~BORING LOGS~~ |
| 15 - 19 | TYPICAL SECTIONS |
| N/A | IMPACT PLANS 1-3 |
| ~~20 – 40~~ | ~~CONSTRUCTION PLANS~~ |
| ~~41 – 64~~ | ~~CONSTRUCTION PROFILES~~ |
| ~~65 – 85~~ | ~~CURB TIE & GRADING PLANS~~ |
| ~~86 – 93~~ | ~~BASELINE TIES & SKETCHES PLANS~~ |
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| 136 - 143 | DRAINAGE & UTILITY DETAILS (SELECTED SHEETS) |
| ~~144 – 165~~ | ~~PAVEMENT MARKING AND SIGNS PLANS~~ |
| ~~166 – 170~~ | ~~SIGN SUMMARY~~ |
| ~~171~~ | ~~PAVEMENT MARKING DETAILS~~ |
| ~~172 – 181~~ | ~~TRAFFIC SIGNAL PLANS~~ |
| ~~182 – 206~~ | ~~TEMPORARY TRAFFIC CONTROL PLANS~~ |
| ~~207 – 211~~ | ~~PEDESTRIAN CURB RAMP & DRIVEWAY DETAILS~~ |
| 212 - 217 | LANDSCAPING PLANS 2-6 (SELECTED SHEETS) |
| 218 | WETLAND REPLICATION PLAN |
| 219 | ~~COMPENSATORY FLOOD STORAGE PLAN~~ |
| ~~220~~ | ~~INFILTRATION BASIN PLAN~~ |
| 221 - 224 | CONSTRUCTION & LANDSCAPE DETAILS (SELECTED SHEETS) |
| ~~225 – 227~~ | ~~RETAINING WALL PLANS~~ |
| 228 - 231 | CULVERT PLANS |
| ~~232 – 385~~ | CROSS SECTIONS |
| N/A | BRIDGE PLANS (SELECTED SHEETS) |


LENGTH OF PROJECT = 10850.00 FEET = 2.055 MILES

## DESIGN DESIGNATION - (ROUTE 38/MAIN STREET)

DESIGN SPEED
40 MPH - PROJECT BEGIN TO STA. 236+60
45 MPH - STA. 236+60 TO 300+00
30 MPH - STA. 300+00 TO PROJECT END

| | 800 FEET NORTH OF LOWELL STREET | 700 FEET SOUTH OF CROSS STREET | 450 FEET SOUTH OF EAMES STREET |
|---|---|---|---|
| ADT (2016) | 21,383 | 12,490 | 14,954 |
| ADT (2036) | 26091 | 15240 | 18247 |
| K | 7.5 | 9.1 | 9.0 |
| D | 72.9% | 78 | 67.9% |
| T (PEAK HOUR) | 6.0% | 9.2% | 4.1% |
| T (AVERAGE DAY) | 6.2 | 10.1% | 8.0% |
| DHV | 1957 | 1387 | 1642 |
| DDHV | 1427 | 1090 | 1115 |
| FUNCTIONAL CLASSIFICATION | URBAN PRINCIPAL ARTERIAL | URBAN PRINCIPAL ARTERIAL | URBAN PRINCIPAL ARTERIAL |

PLANS ARE FOR PERMIT SUBMISSION ONLY AND NOT FOR CONSTRUCTION

| DATE | DESCRIPTION | REV # |
|---|---|---|
| 5/XX/2024 | PS&E SUBMISSION | 0 |
| 1/19/2024 | 100% SUBMISSION | 0 |
| 1/15/2021 | 75% SUBMISSION | 0 |
| 10/25/2017 | 25% SUBMISSION | 0 |

massDOT Massachusetts Department of Transportation Highway Division

**APPROVED**

CHIEF ENGINEER _____ DATE _____

PREPARED BY:

Green International Affiliates, Inc.
Civil and Structural Engineers



608051_HD01(TITLE).DWG Plotted on 12-Mar-2025 2:26 PM
Proposal No. 608051 - 132406
A0083119 - 1380

# GENERAL SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| JB | JB | JERSEY BARRIER |
| CB | CB | CATCH BASIN |
| | | CATCH BASIN CURB INLET |
| FP | FP | FLAG POLE |
| GP | GP | GAS PUMP |
| MB | MB | MAIL BOX |
| | | POST SQUARE |
| | | POST CIRCULAR |
| WELL | WELL | WELL |
| EHH | EHH | ELECTRIC HANDHOLE |
| | | FENCE GUARD POST |
| GG | GG | GAS GATE |
| BHL # | BHL # | BORING HOLE |
| MW # | MW # | MONITORING WELL |
| TP # | TP # | TEST PIT |
| | | HYDRANT |
| | | LIGHT POLE |
| CO.BD. | | COUNTY BOUND |
| | | GPS POINT |
| | | CABLE MANHOLE |
| | | DRAINAGE MANHOLE |
| | | ELECTRIC MANHOLE |
| | | GAS MANHOLE |
| | | MISC MANHOLE |
| | | SEWER MANHOLE |
| | | TELEPHONE MANHOLE |
| | | WATER MANHOLE |
| MHB | MHB | MASSACHUSETTS HIGHWAY BOUND |
| MON | | MONUMENT |
| SB | | STONE BOUND |
| TB | | TOWN OR CITY BOUND |
| | | TRAVERSE OR TRIANGULATION STATION |
| TPL or GUY | TPL or GUY | TROLLEY POLE OR GUY POLE |
| HTP | | TRANSMISSION POLE |
| UFB | UFB | UTILITY POLE W/ FIREBOX |
| UPDL | UPDL | UTILITY POLE WITH DOUBLE LIGHT |
| ULT | ULT | UTILITY POLE W / 1 LIGHT |
| UPL | UPL | UTILITY POLE |
| | | BUSH |
| SIZE & TYPE | | TREE |
| | | STUMP |
| | | SWAMP / MARSH |
| WG | WG | WATER GATE |
| PM | PM | PARKING METER |
| | | OVERHEAD CABLE/WIRE |
| | | CURBING |
| 100 99 | | CONTOURS (ON-THE-GROUND SURVEY DATA) |
| 100 99 | | CONTOURS (PHOTOGRAMMETRIC DATA) |
| | | UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER) |
| | | UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER) |
| | | BALANCED STONE WALL |
| | | GUARD RAIL - STEEL POSTS |
| | | GUARD RAIL - WOOD POSTS |
| x | x | CHAIN LINK OR METAL FENCE |
| | | WOOD FENCE |
| | | TREE LINE |
| | | SAWCUT LINE |
| | | TOP OR BOTTOM OF SLOPE |
| | | LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY |
| | | BANK OF RIVER OR STREAM |
| | | BORDER OF WETLAND |
| | | 100 YEAR FLOOD PLAIN |
| | | 100 FT WETLAND BUFFER |
| | | 200 FT RIVERFRONT BUFFER |
| | | 50 FT NO BUILD |
| | | 15 FT NO DISTURB |
| | | STATE HIGHWAY LAYOUT |
| | | TOWN OR CITY LAYOUT |
| | | COUNTY LAYOUT |
| | | RAILROAD SIDELINE |
| | | TOWN OR CITY BOUNDARY LINE |
| | | PROPERTY LINE OR APPROXIMATE PROPERTY LINE |
| | | EASEMENT |
| | | CONC RETAINING WALL |
| | | SEDIMENT CONTROL BARRIER |
| | | COIR LOG |
| x | | FLOATING SILT FENCE |
| | | STONE FOR PIPE ENDS |
| | | MODIFIED ROCK FILL |

# TRAFFIC SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| 1 | 1 | CONTROLLER PHASE ACTUATED |
| | | TRAFFIC SIGNAL HEAD (SIZE AS NOTED) |
| | | VIDEO DETECTION CAMERA |
| | | MICROWAVE DETECTOR |
| | | PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE |
| | * | EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT |
| | | VEHICULAR SIGNAL HEAD |
| | | VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED |
| | | FLASHING BEACON |
| | | PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED) |
| RRSG | RRSG | RAILROAD SIGNAL |
| OR | | SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED) |
| 20' | 20' | MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED) |
| | | HIGH MAST POLE OR TOWER |
| | | SIGN AND POST |
| | | SIGN AND POST (2 POSTS) |
| | 20' | MAST ARM WITH LUMINAIRE |
| | | OPTICAL PRE-EMPTION DETECTOR |
| | | CONTROL CABINET, GROUND MOUNTED |
| | | CONTROL CABINET, POLE MOUNTED |
| | | FLASHING BEACON CONTROL AND METER PEDESTAL |
| | | LOAD CENTER ASSEMBLY |
| | | PULL BOX 12"x12" (OR AS NOTED) |
| | | ELECTRIC HANDHOLE 12"x24" (OR AS NOTED) |
| | | TRAFFIC SIGNAL CONDUIT |
| | | VIDEO VEHICLE DETECTION ZONE |
| | | VIDEO BICYCLE DETECTION ZONE |
| | | WIRE LOOP DETECTOR WITH BICYCLE DETECTION (6' x 23' TYP UNLESS OTHERWISE SPECIFIED) |

# PAVEMENT MARKINGS SYMBOLS

| EXISTING | PROPOSED | DESCRIPTION |
|---|---|---|
| | | PAVEMENT ARROW - WHITE |
| ONLY | ONLY | LEGEND "ONLY" - WHITE |
| | SL | STOP LINE |
| | CW | CROSSWALK |
| | SWL | 6" SOLID WHITE LINE |
| | SYL | 6" SOLID YELLOW LINE |
| | BWL | 6" BROKEN WHITE LINE (10' LINE SEGMENT, 30' GAP) |
| | BYL | 6" BROKEN YELLOW LINE (10' LINE SEGMENT, 30' GAP) |
| | DWL | 6" DOTTED WHITE LINE (3' LINE SEGMENT, 9' GAP) |
| | DYL | 6" DOTTED YELLOW LINE (3' LINE SEGMENT, 9' GAP) |
| | DWLEx | 6" DOTTED WHITE LINE EXTENSION (2' LINE SEGMENT, 6' GAP) |
| | DYLEx | 6" DOTTED YELLOW LINE EXTENSION (2' LINE SEGMENT, 6' GAP) |
| | DBWL | 6" DOUBLE WHITE LINE |
| | DBYL | 6" DOUBLE YELLOW LINE |
| | RWT | RECESSED ALL-WEATHER THERMOPLASTIC |

# ABBREVIATIONS

## GENERAL

| | |
|---|---|
| AADT | ANNUAL AVERAGE DAILY TRAFFIC |
| ABAN | ABANDON |
| ADJ | ADJUST |
| APPROX. | APPROXIMATE |
| A.C. | ASPHALT CONCRETE |
| ACCM PIPE | ASPHALT COATED CORRUGATED METAL PIPE |
| BIT. | BITUMINOUS |
| BC | BOTTOM OF CURB |
| BD. | BOUND |
| BL | BASELINE |
| BLDG | BUILDING |
| BM | BENCHMARK |
| BO | BY OTHERS |
| BOS | BOTTOM OF SLOPE |
| BR. | BRIDGE |
| CB | CATCH BASIN |
| CB W/F&C | CATCH BASIN WITH FRAME AND COVER |
| CBCI | CATCH BASIN WITH CURB INLET |
| CC | CEMENT CONCRETE |
| CCM | CEMENT CONCRETE MASONRY |
| CEM | CEMENT |
| CI | CURB INLET |
| CIP | CAST IRON PIPE |
| CLF | CHAIN LINK FENCE |
| CL | CENTERLINE |
| CMP | CORRUGATED METAL PIPE |
| CSP | CORRUGATED STEEL PIPE |
| CO. | COUNTY |
| CONC | CONCRETE |
| CONT | CONTINUOUS |
| CONST | CONSTRUCTION |
| CR GR | CROWN GRADE |
| CTE | CONNECT TO EXISTING |
| DHV | DESIGN HOURLY VOLUME |
| DI | DROP INLET |
| DIA | DIAMETER |
| DIP | DUCTILE IRON PIPE |
| DW | STEADY DON'T WALK - PORTLAND ORANGE |
| DWY | DRIVEWAY |
| ECC | ECCENTRIC |
| ELEV (or EL.) | ELEVATION |
| EMB | EMBANKMENT |
| EOP | EDGE OF PAVEMENT |
| EXIST (or EX) | EXISTING |
| EXC | EXCAVATION |
| F&C | FRAME AND COVER |
| F&G | FRAME AND GRATE |
| FDN. | FOUNDATION |
| FLDSTN | FIELDSTONE |
| GAR | GARAGE |
| GD | GROUND |
| GG | GAS GATE |
| GI | GUTTER INLET |
| GIP | GALVANIZED IRON PIPE |
| GRAN | GRANITE |
| GRAV | GRAVEL |
| GRD | GUARD |
| HDW | HEADWALL |
| HMA | HOT MIX ASPHALT |
| HOR | HORIZONTAL |
| HYD | HYDRANT |
| INV | INVERT |
| JCT | JUNCTION |
| L | LENGTH OF CURVE |
| LB | LEACH BASIN |
| LP | LIGHT POLE |
| LSA | LANDSCAPED AREA |
| LT | LEFT |
| MAX | MAXIMUM |
| MB | MAILBOX |
| MH | MANHOLE |
| MHB | MASSACHUSETTS HIGHWAY BOUND |
| MIN | MINIMUM |
| NG | NATIONAL GRID |
| NIC | NOT IN CONTRACT |
| NO. | NUMBER |
| PC | POINT OF CURVATURE |
| PCC | POINT OF COMPOUND CURVATURE |
| PCR | PEDESTRIAN CURB RAMP |
| P.G.L. | PROFILE GRADE LINE |
| PI | POINT OF INTERSECTION |
| POC | POINT ON CURVE |
| POT | POINT ON TANGENT |
| PRC | POINT OF REVERSE CURVATURE |
| PROJ | PROJECT |
| PROP | PROPOSED |
| PSB | PLANTABLE SOIL BORROW |
| PT | POINT OF TANGENCY |

# ABBREVIATIONS (cont.)

## GENERAL

| | |
|---|---|
| PVC | POINT OF VERTICAL CURVATURE |
| PVI | POINT OF VERTICAL INTERSECTION |
| PVT | POINT OF VERTICAL TANGENCY |
| PVMT | PAVEMENT |
| PWW | PAVED WATER WAY |
| R | RADIUS OF CURVATURE |
| R&D | REMOVE AND DISPOSE |
| R&R UP | REMOVE AND REPLACE UTILITY POLE |
| R&R | REMOVE AND RESET |
| RCP | REINFORCED CONCRETE PIPE |
| RD | ROAD |
| RDWY | ROADWAY |
| REM | REMOVE |
| RET | RETAIN |
| RET WALL | RETAINING WALL |
| RMD | REMODEL |
| ROW | RIGHT OF WAY |
| RR | RAILROAD |
| R&R | REMOVE AND RESET |
| R&S | REMOVE AND STACK |
| RT | RIGHT |
| SB | STONE BOUND |
| SHLD | SHOULDER |
| SMH | SEWER MANHOLE |
| ST | STREET |
| STA | STATION |
| SSD | STOPPING SIGHT DISTANCE |
| SHLO | STATE HIGHWAY LAYOUT LINE |
| SW | SIDEWALK |
| T | TANGENT DISTANCE OF CURVE/TRUCK % |
| TAN | TANGENT |
| TEMP | TEMPORARY |
| TC | TOP OF CURB |
| TOS | TOP OF SLOPE |
| TYP | TYPICAL |
| UP | UTILITY POLE |
| VAR | VARIES |
| VERT | VERTICAL |
| VC | VERTICAL CURVE |
| VP | VENT PIPE |
| VZ | VERIZON |
| WG | WATER GATE |
| WIP | WROUGHT IRON PIPE |
| WM | WATER METER/WATER MAIN |
| X-SECT | CROSS SECTION |

## TRAFFIC SIGNAL

| | |
|---|---|
| CAB. | CABINET |
| CCVE | CLOSED CIRCUIT VIDEO EQUIPMENT |
| DW | STEADY DON'T WALK |
| FDW | FLASHING DON'T WALK |
| FR | FLASHING CIRCULAR RED |
| FRL | FLASHING RED LEFT ARROW |
| FRR | FLASHING RED RIGHT ARROW |
| FY | FLASHING CIRCULAR AMBER |
| FYL | FLASHING AMBER LEFT ARROW |
| FYR | FLASHING AMBER RIGHT ARROW |
| G | STEADY CIRCULAR GREEN |
| GL | STEADY GREEN LEFT ARROW |
| GR | STEADY GREEN RIGHT ARROW |
| GSL | STEADY GREEN SLASH LEFT ARROW |
| GSR | STEADY GREEN SLASH RIGHT ARROW |
| GV | STEADY GREEN VERTICAL ARROW |
| OL | OVERLAP |
| PED | PEDESTRIAN |
| PTZ | PAN, TILE, ZOOM |
| R | STEADY CIRCULAR RED |
| RL | STEADY RED LEFT ARROW |
| RR | STEADY RED RIGHT ARROW |
| TR SIG | TRAFFIC SIGNAL |
| TSC | TRAFFIC SIGNAL CONDUIT |
| W | STEADY WALK |
| Y | STEADY CIRCULAR AMBER |
| YL | STEADY AMBER LEFT ARROW |

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 2 | 391 |
| PROJECT FILE NO. | 608051 | | |

**LEGEND & ABBREVIATIONS**



A0083162
608051_HD02(LEGEND).DWG Plotted on 12-Mar-2025 2:26 PM
Proposal No. 608051 - 132406

## GENERAL NOTES

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES AND PROCEDURES; AND FOR SAFETY PRECAUTIONS AND PROGRAMS REQUIRED FOR THE WORK UNDER THIS CONTRACT. THE CONTRACTOR SHALL COMPLY WITH OSHA REQUIREMENTS.
2. ALL TREE REMOVALS AND TREE TRIMMING SHALL BE APPROVED BY THE RESIDENT ENGINEER. ANY TREES IMPACTED BY PROPOSED WORK, THAT ARE NOT MARKED TO BE REMOVED ON THE PLAN SHALL BE EVALUATED BY A MASSACHUSETTS CERTIFIED ARBORIST. ALL TREE TRIMMING SHALL BE OVERSEEN BY A MASSACHUSETTS CERTIFIED ARBORIST.
3. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
4. MINIMUM CLEAR PATH ON THE SIDEWALK SHALL BE 3'-0" EXCLUDING THE SURFACE OF THE CURB. THE CONTRACTOR SHALL MAINTAIN AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE AROUND ALL EXISTING UTILITY POLES AND RELOCATED MAILBOXES.
5. CURB RAMPS SHALL CONFORM TO THE LATEST ADA/AAB STANDARDS.
6. TRANSITION CURB AT PROJECT LIMITS TO MATCH EXISTING ELEVATIONS (PAVEMENT OR EXISTING CURB). WITHIN ABUTTING PROPERTIES, UNLESS NOTED OTHERWISE. WHEN RETAINING THESE ITEMS IS NOT PRACTICAL IN THE OPINION OF THE ENGINEER, THE CONTRACTOR SHALL REMOVE, STOCKPILE, PROTECT AND RESET THE ITEMS. THE CONTRACTOR SHALL REPLACE ITEMS DAMAGED DURING REMOVAL, STOCKPILING, OR RESETTING DUE TO NEGLIGENCE, CARELESSNESS, OR MISHANDLING WITH EQUIVALENT NEW ITEMS AT NO COST TO THE OWNER.
7. ALL TREES CALLED OUT TO BE RETAINED ON THE CONSTRUCTION PLANS SHALL HAVE TREE PROTECTION - INDIVIDUAL AND TREE PROTECTION - TEMPORARY FENCE.
8. THE CONCRETE SLAB OF BRIDGE NO. W-38-011 (802) SHALL BE RETAINED DURING THE CONSTRUCTION OF THE PROJECT. THE DEPTH OF THE PROPOSED ROADWAY SUBBASE SHALL VARY IN DEPTH ACROSS THE BRIDGE.
9. ROCKS AND BOULDERS IDENTIFIED R&R ON THE PLANS SHALL BE REMOVED DURING CONSTRUCTION AND RESET AS DIRECTED PER THE ENGINEER.
10. MILLED LONGITUDINAL RUMBLE STRIP SHALL BE INSTALLED ACCORDING TO ENGINEERING DIRECTIVE E20-007.
11. THE CONTRACTOR SHALL FIELD VERIFY ALL MAILBOXES ARE INSTALLED PER MASSDOT STANDARD DETAIL E 504.1.0, AND MEETS ADA REQUIREMENTS.

## SURVEY NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASE MAP ARE THE RESULT OF AN ON THE GROUND INSTRUMENT SURVEY PERFORMED BETWEEN OCTOBER 11, 2016 AND DECEMBER 7, 2016 BY GREEN INTERNATIONAL AFFILIATES, INC. (GREEN). SEE FIELD NOTES IN MASSDOT DISTRICT 4 FIELD BOOK 41142.
2. HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED BY GREEN ON OCTOBER 28, 2016 WITH STATIC GPS VECTORS CALCULATED BY NATIONAL GEODETIC SURVEY'S OPUS SERVICE, IN MASSDOT DISTRICT 4 FIELD BOOK 41142, PAGE 84. HORIZONTAL DATUM IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD83 (2011) EPOCH 2010.0000, VERTICAL DATUM IS NAVD 88 (COMPUTED USING GEOID12B) USING THE FOLLOWING CONTROL POINTS:

| POINT | GRID NORTHING | GRID EASTING | ELEVATION | COMBINED GROUND TO GRID SCALE FACTOR |
|---|---|---|---|---|
| 2-MDHL | 3024249.8723 | 744113.8185 | 108.896 | 0.99998182 |
| 28-MMAG | 3014918.9153 | 748357.2529 | 91.352 | 0.99998006 |

THE UNIT OF MEASUREMENTS IS US FEET. THE PROJECT COMBINED SCALE FACTOR IS 0.99998094.

3. THE RIGHT OF WAY LINES SHOWN ON THIS BASE MAP ARE THE DIRECT RESULT OF AN INSTRUMENT SURVEY PERFORMED ON THE GROUND BY GREEN, WITH A TRAVERSE CLOSURE OF 1 IN 92,559 AND FROM PLANS AND DEEDS OF RECORD. PRIVATE PROPERTY LINES HAVE NOT BEEN SURVEYED, THEY ARE COMPILED FROM GIS & RECORD PLAN INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE. THE SAID PARCELS SHOWN HEREON ARE SUBJECT TO RIGHTS AND EASEMENTS AS CONTAINED IN THE VARIOUS DEEDS OF RECORD DESCRIBING SAID PREMISES. THE LOCATIONS AND EXTENT OF SAID RIGHTS AND EASEMENTS ARE NOT SUBJECT TO THE SURVEY.
4. WETLANDS WERE DELINEATED AND FIELD LOCATED BY GREEN IN NOVEMBER, 2016.

## EROSION AND SEDIMENT CONTROL NOTES

1. ALL EROSION CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBANCE / EARTHWORK ACTIVITIES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR, REPLACEMENT AND MAINTENANCE OF ALL SEDIMENTATION / EROSION CONTROL MEASURES UNTIL ALL DISTURBED AREAS ARE STABILIZED.

## UTILITY NOTES

1. ALL UNDERGROUND UTILITIES AS SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION.
2. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD. IN ADDITION, ANY UTILITIES NORMALLY LOCATED IN THE STREETS AND NOT SHOWN ON THESE PLANS SHALL BE ANTICIPATED BY THE CONTRACTOR IN ALL HIS OPERATIONS.
3. SUBSURFACE UTILITY LOCATIONS HAVE BEEN PLOTTED TO MEET UTILITY QUALITY LEVEL "C" AS DESCRIBED IN ASCE STANDARD 38-02 AND SUMMARIZED BELOW. THE UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS BASED ON ABOVE-GROUND FIELD OBSERVATION AND EXISTING RECORD INFORMATION RECEIVED FROM UTILITY STAKE-HOLDERS.

   SUMMARY OF UTILITY MAPPING QUALITY LEVELS:

   THE FOLLOWING IS A SUMMARY OF THE SURVEY MAPPING LEVELS FOR UTILITIES AS DESCRIBED IN ASCE STANDARD 38-02, "STANDARD GUIDELINE FOR THE DEPICTION OF EXISTING SUBSURFACE UTILITY DATA". THESE GUIDELINES ARE MORE FULLY DESCRIBED IN THE ASCE STANDARD.

   - UTILITY QUALITY LEVEL A:
     PRECISE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED AND SURVEYED UTILITIES) AND SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT IS TYPICALLY USED TO MINIMIZE THE POTENTIAL FOR UTILITY DAMAGE. A PRECISE HORIZONTAL AND VERTICAL LOCATION, AS WELL AS OTHER UTILITY ATTRIBUTES, IS SHOWN ON PLAN DOCUMENTS. ACCURACY IS TYPICALLY SET TO 15-MM VERTICAL AND TO APPLICABLE HORIZONTAL SURVEY AND MAPPING ACCURACY AS DEFINED OR EXPECTED BY THE PROJECT OWNER.
   - UTILITY QUALITY LEVEL B:
     INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE AND APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT AND REDUCED ONTO PLAN DOCUMENTS.
   - UTILITY QUALITY LEVEL C:
     INFORMATION OBTAINED BY SURVEYING AND PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES AND BY USING PROFESSIONAL JUDGMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.
   - UTILITY QUALITY LEVEL D:
     INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.
4. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS) PRIOR TO EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
5. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL "DIG SAFE" (1-888-344-7233) 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS. MUNICIPALITIES, THE STATE AND THE MBTA ARE NOT MEMBERS OF DIG-SAFE AND SHALL BE CONTACTED INDIVIDUALLY BY THE CONTRACTOR.
6. THE EXISTING INVERTS ARE SHOWN FOR BIDDING PURPOSES ONLY. ACTUAL INVERT ELEVATIONS SHALL BE CONFIRMED IN THE FIELD BY THE CONTRACTOR PRIOR TO ORDERING STRUCTURES.
7. THE CONTRACTOR SHALL INVESTIGATE ALL UNKNOWN MANHOLES TO DETERMINE OWNERSHIP AND CONTACT THE APPROPRIATE UTILITY AGENCIES TO COORDINATE WORK. THE ENGINEER SHALL BE NOTIFIED OF ANY MANHOLES DETERMINED TO BE PART OF SEWER, DRAIN OR WATER SYSTEMS.
8. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
9. THE CONTRACTOR SHALL EXERCISE EXTREME CARE WHEN EXCAVATING NEAR AND BACKFILLING IN THE VICINITY OF EXISTING UTILITIES. CONTRACTOR SHALL USE HAND EXCAVATION WHERE APPROPRIATE TO PROTECT EXISTING UTILITIES.
10. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES IN SERVICE AT ALL TIMES. IF THE CONTRACTOR DAMAGES UTILITY SYSTEMS, THEY SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL REPAIR/REPLACE THE AFFECTED SYSTEM AT HIS OWN EXPENSE.
11. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES AND MAKE ARRANGEMENTS FOR ADJUSTMENTS, ALTERATIONS, AND REPLACEMENT OF PRIVATE UTILITIES WHICH ARE TO BE DONE BY THE UTILITY COMPANY.
12. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SEWER STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER, SEWER, DRAINAGE SURFACE CASTINGS, TRAFFIC SIGNALS, PUBLIC ELECTRICAL ITEMS, AND PRIVATE LIGHTING (ETC.) WITHIN THE LIMITS OF CONSTRUCTION TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2. IF AN EXISTING UTILITY STRUCTURE WITHIN IN THE PROJECT LIMITS IS WITHIN A PROPOSED ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE SURFACE.
13. THE CONTRACTOR SHALL CONSIDER THE INDIVIDUAL SERVICE LINES TO EACH BUILDING FROM ALL UTILITIES, WHETHER MARKED OUT OR NOT, WHEN PROCEEDING WITH EXCAVATION.
14. SURPLUS MATERIALS OBTAINED FROM ANY TYPE OF EXCAVATION, AND ALL EXISTING AND OTHER MATERIALS NOT REQUIRED TO BE REMOVED AND STACKED OR NEEDED FOR USE ON THE PROJECT, AS DETERMINED BY THE ENGINEER, SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF SUBJECT TO THE REGULATIONS AND REQUIREMENTS OF LOCAL AUTHORITIES GOVERNING THE DISPOSAL OF SUCH MATERIALS, AT NO ADDITIONAL COMPENSATION.
15. THE CONTRACTOR SHALL SUPPORT AND PROTECT EXISTING UTILITIES IN AND AROUND EXCAVATIONS, AND, IN PARTICULAR, WHEN CROSSING UNDER OR OVER ANY DUCT OR PIPE. ALL PROTECTIVE MEASURES AND SUPPORTS SHALL BE CONSIDERED INCIDENTAL WORK AND SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE ITEM BEING INSTALLED.
16. A MINIMUM 24-INCHES OF SEPARATION IS REQUIRED BETWEEN THE HIGH PRESSURE GAS MAIN AND DRAINAGE LINE AND ALSO BETWEEN THE HIGH PRESSURE GAS MAIN AND WATER MAIN.
17. PROPOSED WATER MAIN SHALL BE INSTALLED WITH VERTICAL BENDS TO CROSS UNDER EXISTING WATER MAIN TO AVOID CONFLICTS AND CONNECTION FOR THE HYDRANTS.
18. GUTTER INLETS AND CATCH BASINS WITH FRAME AND COVER ARE PROPOSED DUE TO CONFLICTS WITH EXISTING UTILITIES. IN LOCATIONS WHERE THE CONTRACTOR HAS DETERMINED NO SUCH CONFLICTS EXIST, THE CONTRACTOR SHALL USE MASSDOT STANDARD CATCH BASINS.
19. THE CONTRACTOR SHALL PROTECT PRIVATE IRRIGATION SYSTEM TO EACH PRIVATE PROPERTY, WHETHER MARKED OUT OR NOT, WHEN PROCEEDING WITH EXCAVATION AND GRADING. REPAIR TO DAMAGED IRRIGATION SYSTEM SHALL BE INCIDENTAL TO THE WORK PERFORMED AND INCLUDED IN THE UNIT PRICE BID FOR THE ITEM BEING INSTALLED.

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608051_HD03(GENERAL NOTES).DWG Plotted on 12-Mar-2025 2:27 PM
Proposal No. 608051 - 132406

# WILMINGTON
# ROUTE 38 (MAIN STREET)

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 4 | 391 |
| PROJECT FILE NO. | 608051 | | |

**KEY PLAN**
**REVISED**
**04/23/2025**

Plotted on: 12-Mar-2025 2:27 PM
608051_HD04(KEY PLAN).DWG

Proposal No. 608051 - 132406

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N

END PAVEMENT MILLING AND RESURFACING
BEGIN FULL DEPTH RECONSTRUCTION
STA 207+00.00

205+99.91 MAIN STREET ALIGNMENT=
20+00.00 BURLINGTON AVENUE ALIGNMENT

206+08.29 MAIN STREET ALIGNMENT=
10+00.00 CHURCH STREET ALIGNMENT

**IMPACT PLANS**
**SHEET 1 OF 3**

END FULL DEPTH RECONSTRUCTION
BEGIN PAVEMENT MILLING AND RESURFACING
STA 223+35.00

**IMPACT PLANS**
**SHEET 2 OF 3**

BEGIN PROJECT
BEGIN PAVEMENT
MILLING
AND RESURFACING
STA 203+55.00
N 3024552.8585
E 744023.6687

CHURCH STREET (ROUTE 62)
BURLINGTON AVENUE (ROUTE 62)
KIRK STREET
MAIN STREET (ROUTE 38)
DUBLIN AVENUE
HERNAN AVENUE
LOWELL STREET (ROUTE 129)
CROSS STREET
BUTTERS ROW
MBTA RAILROAD

END PAVEMENT MILLING AND RESURFACING
BEGIN FULL DEPTH RECONSTRUCTION
STA 229+85.00

241+58.84 MAIN STREET ALIGNMENT=
40+00.00 CROSS STREET ALIGNMENT

228+22.82 MAIN STREET ALIGNMENT=
30+00.00 LOWELL STREET ALIGNMENT

FOR CONTINUATION SEE BELOW

FOR CONTINUATION SEE ABOVE

MATCH PROJECT
NO.607327
STA 261+38.00

MATCH PROJECT
NO. 607327
STA 269+50.85

BRIDGE # W-38-011 (802)

**IMPACT PLANS**
**SHEET 3 OF 3**

ROUTE 62

MAIN STREET (ROUTE 38)

MBTA RAILROAD

FOR CONTINUATION SEE ABOVE

FOR CONTINUATION SEE BELOW

EAMES STREET

293+90.31 MAIN STREET ALIGNMENT=
60+00.00 EAMES STREET ALIGNMENT

306+37.34 MAIN STREET ALIGNMENT=
70+00.00 OLD MAIN STREET (NORTH) ALIGNMENT

END FULL DEPTH
RECONSTRUCTION
BEGIN PAVEMENT MILLING AND
RESURFACING WITH OVERLAY
STA 295+00.00

OLD MAIN STREET

END PROJECT
END PAVEMENT MILLING
AND RESURFACING WITH OVERLAY
STA 319+20.77
N 3014857.1242
E 748337.3382

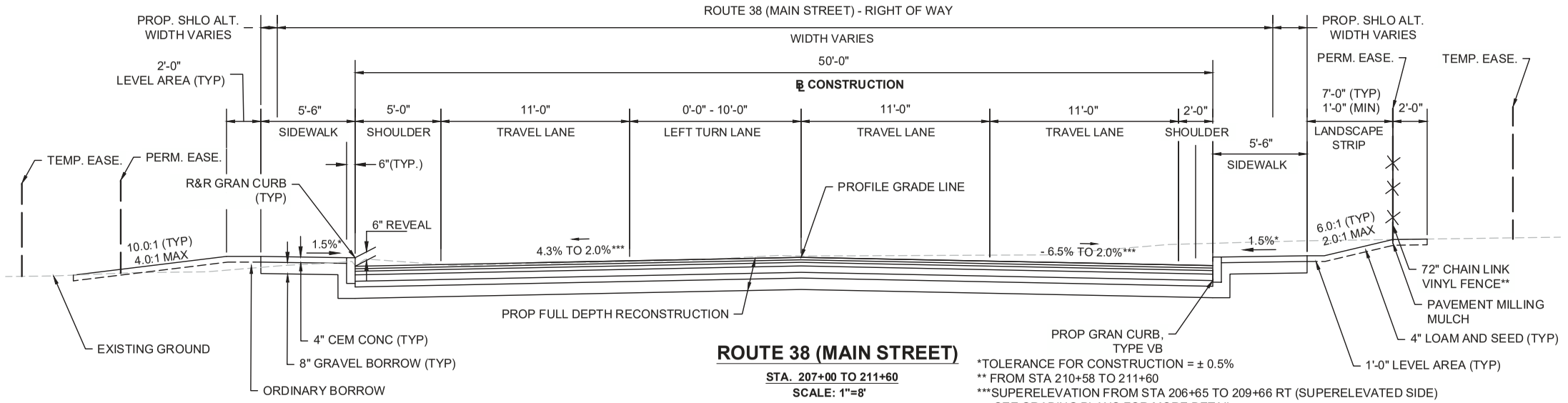
313+78.87 MAIN STREET ALIGNMENT=
80+00.00 OLD MAIN STREET (SOUTH)

END FULL DEPTH

## LEGEND

- (X) CONSTRUCTION PLANS
- [X] CONSTRUCTION PROFILES
- ◇X CURB TIE AND GRADING PLANS
- ⬡X DRAINAGE PLANS
- ⬡X UTILITY PLANS
- ⬡X PAVEMENT MARKINGS AND SIGNS PLANS
- (X) TRAFFIC SIGNAL PLANS

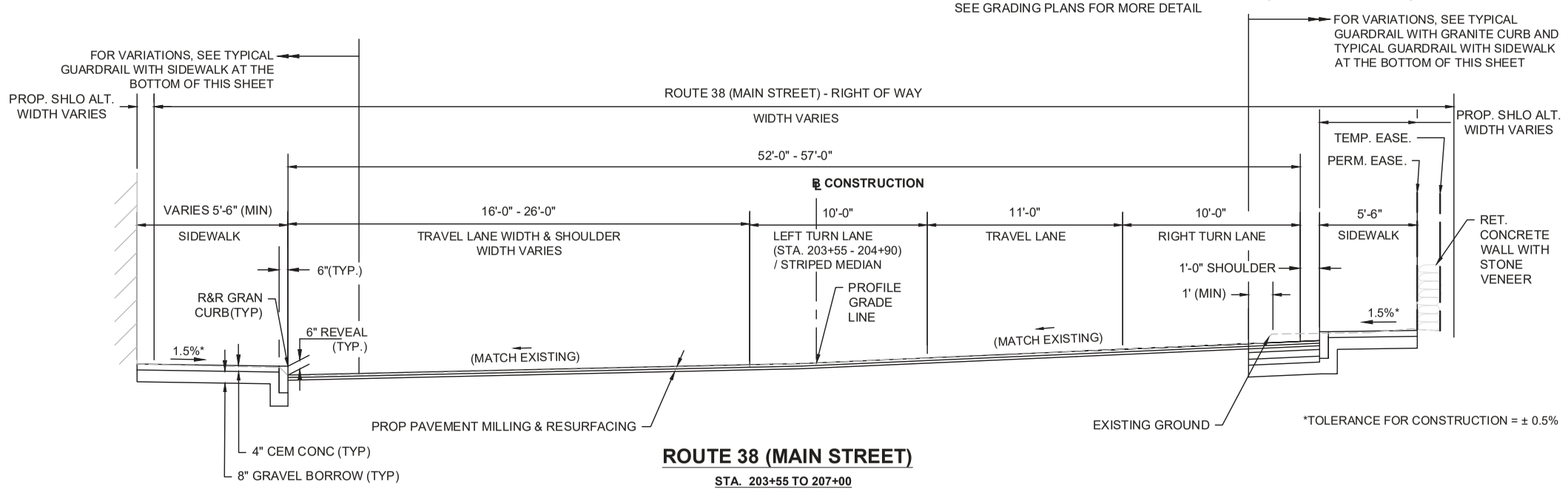
SCALE: 1" = 300'




## ROUTE 38 (MAIN STREET)

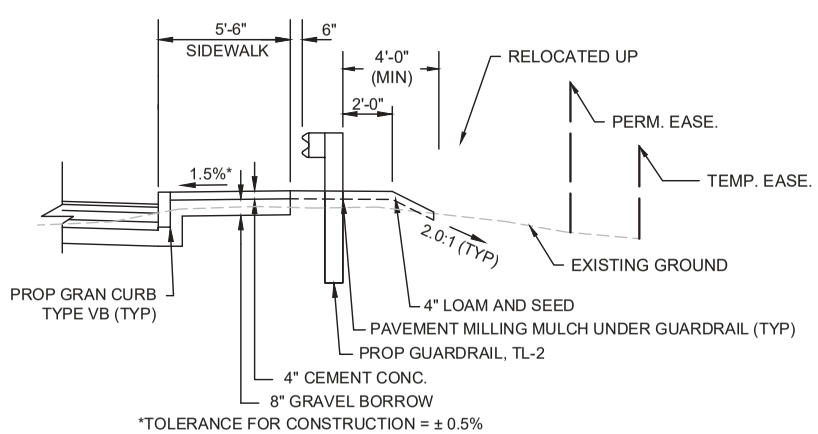
**STA. 207+00 TO 211+60**
**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
** FROM STA 210+58 TO 211+60
***SUPERELEVATION FROM STA 206+65 TO 209+66 RT (SUPERELEVATED SIDE)
SEE GRADING PLANS FOR MORE DETAIL




## ROUTE 38 (MAIN STREET)

**STA. 203+55 TO 207+00**
**SCALE: 1"=8'**




## TYPICAL GUARDRAIL WITH SIDEWALK

| | | |
|---|---|---|
| STA. 206+71 RT - 209+05 RT | STA. 40+29 LT - 41+30 LT | STA. 260+78 RT - 261+38 RT |
| STA. 216+75 RT - 218+34 RT | STA. 52+16 LT - 52+84 LT | STA. 274+93 RT - 276+14 RT |
| STA. 217+61 LT - 218+33 LT | STA. 252+13 RT - 252+89 RT | STA. 316+37 LT - 317+62 LT |
| STA. 216+75 RT - 218+34 RT | STA. 253+50 RT - 257+92 RT | |
| STA. 236+88 RT - 53+00 RT | STA. 260+14 LT - 260+73 LT | |

**SCALE: 1"=8'**

4 0 4 8
SCALE IN FEET

# PAVEMENT NOTES

PROPOSED FULL DEPTH RECONSTRUCTION

| | |
|---|---|
| SURFACE: | 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER |
| INTERMEDIATE COURSE: | 2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER |
| BASE COURSE: | 4.5" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) PLACED IN ONE COURSE |
| SUBBASE: | 4" DENSE GRADED CRUSHED STONE FOR SUBBASE (COMPACTED) OVER 8" GRAVEL BORROW (TYPE B)(COMPACTED) |

PROPOSED BRIDGE PAVEMENT

| | |
|---|---|
| SURFACE: | 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-B-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) |
| SUBBASE: | OVER 8" GRAVEL BORROW (TYPE B)(COMPACTED)(DEPTH VARIES) |

PROPOSED PAVEMENT MILLING & RESURFACING

| | |
|---|---|
| SURFACE: | 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) OVER<br>ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER MILLED SURFACE. |
| MILLING: | 3.5" PAVEMENT STANDARD MILLING |

PROPOSED MILLING & STRUCTURAL OVERLAY

| | |
|---|---|
| SURFACE: | 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) OVER<br>ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER MILLED SURFACE. |
| MILLING: | 3" PAVEMENT STANDARD MILLING |

PROPOSED FULL DEPTH RECONSTRUCTION LESS THAN 4 FEET WIDE

| | |
|---|---|
| SURFACE: | 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 POLYMER (SIC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT (RS-1H) OVER |
| BASE COURSE: | 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE OVER |
| SUBBASE: | 8" GRAVEL BORROW (TYPE B) |

PROPOSED TEMPORARY TRENCH PATCHES

| | |
|---|---|
| SURFACE: | 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) |
| INTERMEDIATE COURSE: | 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) |
| SUBBASE: | SUITABLE BACKFILL COMPACTED |

PROPOSED CEMENT CONCRETE WALK/ WHEELCHAIR RAMP

| | |
|---|---|
| SURFACE: | 4" CEMENT CONCRETE (AIR ENTRAINED 4000 PSI, 3/4", 610) |
| FOUNDATION: | 8" GRAVEL BORROW (TYPE B) |

PROPOSED HMA DRIVEWAY

| | |
|---|---|
| SURFACE: | 4" SUPERPAVE (1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER 2.5" SUPER PAVE SURFACE COURSE - 12.5 (SSC-12.5)) |
| SUBBASE: | 8" GRAVEL BORROW (TYPE B) |

PROPOSED HMA WALK SURFACE

| | |
|---|---|
| SURFACE: | 3" SUPERPAVE (1.25" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER 1.75" SUPER PAVE SURFACE COURSE - 12.5 (SSC-12.5)) |
| SUBBASE: | 8" GRAVEL BORROW (TYPE B) |

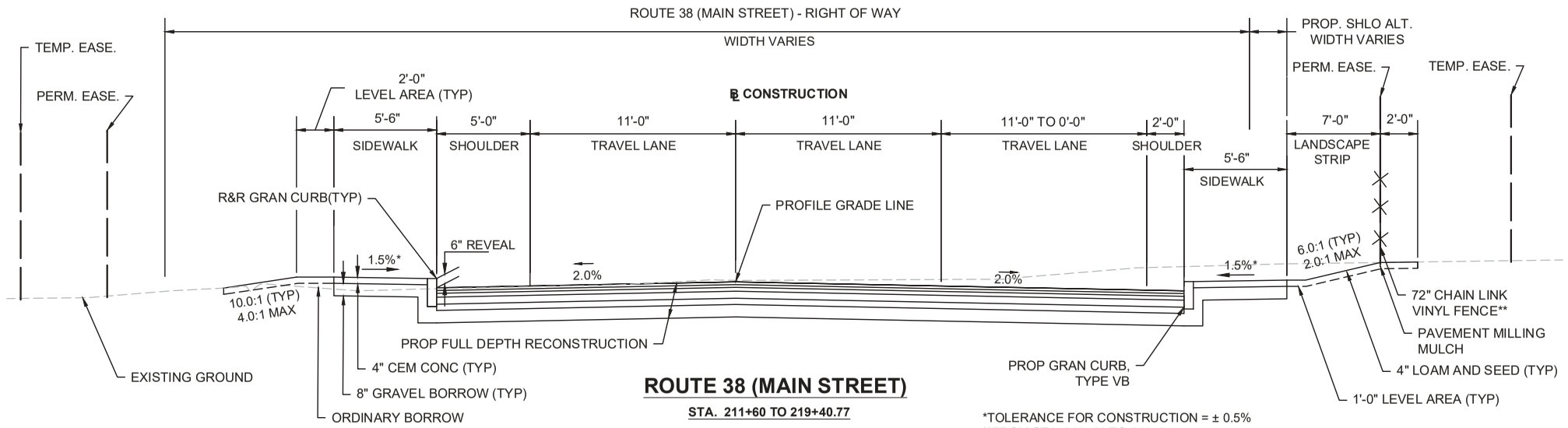
NOTE:
1. TACK COAT SHALL BE APPLIED BETWEEN PAVEMENT LAYERS AT A RATE PER THE LATEST MASSDOT STANDARD SPECIFICATION SUBSECTION 450.
2. TEMPORARY TRENCH PATCHES ARE PAID UNDER ITEM 472 TEMPORARY ASPHALT PATCHING.

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608051_HD05(TYPICAL SECTIONS).DWG
Proposal No. 608051 - 132406
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**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 16 | 391 |
| PROJECT FILE NO. | 608051 | | |

**TYPICAL SECTIONS - 2**



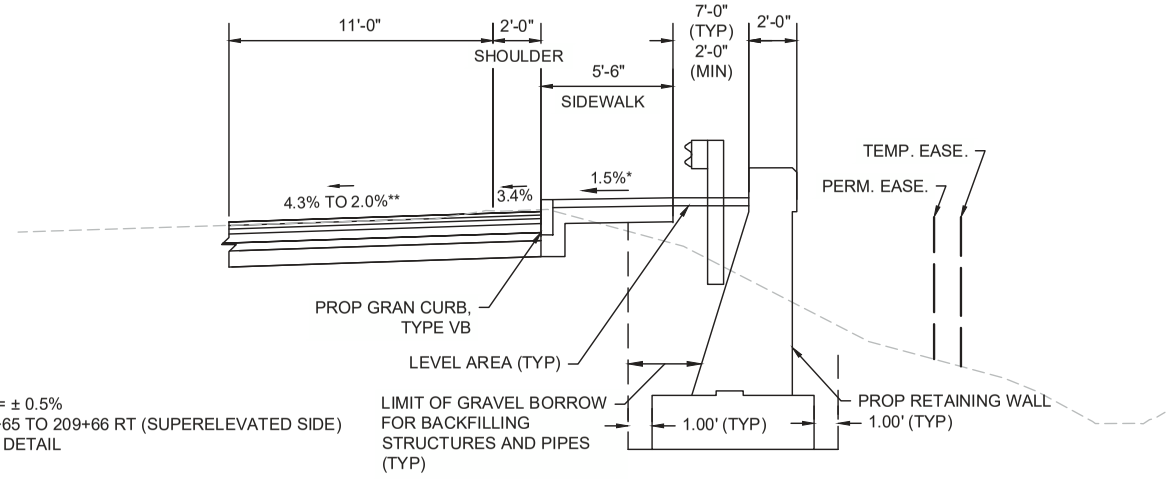

## ROUTE 38 (MAIN STREET)

**STA. 211+60 TO 219+40.77**

**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**FROM STA. 211+60 TO 218+35

4 0 4 8
SCALE IN FEET

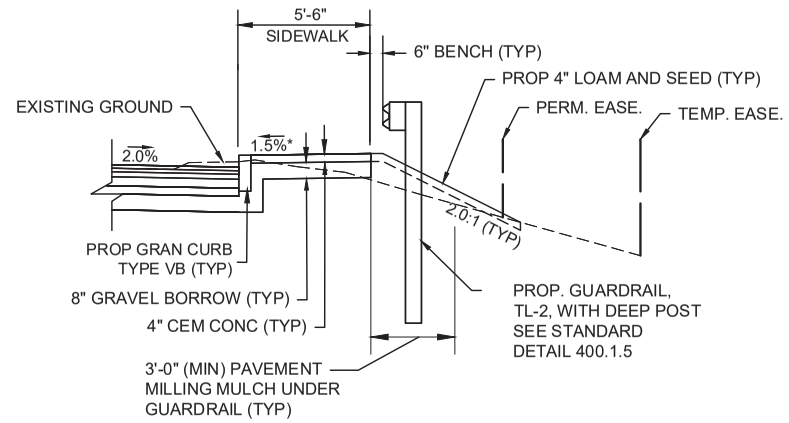



*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**SUPERELEVATION FROM STA 206+65 TO 209+66 RT (SUPERELEVATED SIDE)
SEE GRADING PLANS FOR MORE DETAIL

## ROUTE 38 (MAIN STREET)

**STA. 207+22 TO 209+00**

**SCALE: 1"=8'**




## TYPICAL GUARDRAIL WITH DEEP POST AND SIDEWALK

**STA. 217+77 TO 217+96 LT & RT**
**STA. 237+00 TO 240+75 RT**
**STA. 253+30 TO 257+92 RT**
**STA. 260+78 TO 261+38 RT**

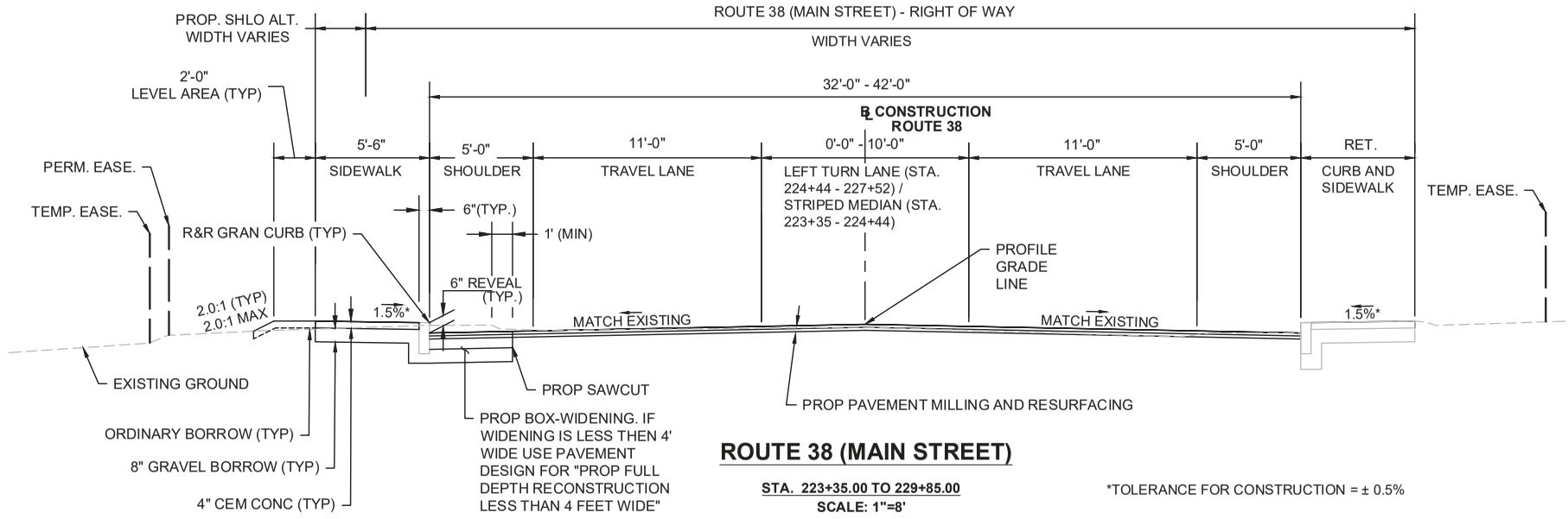
**SCALE: 1"=8'**

608051_HD05(TYPICAL SECTIONS).DWG Plotted on 12-Mar-2025 2:28 PM
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ACOE PLANS SHEET 6 OF 27

WILMINGTON
ROUTE 38 (MAIN STREET)

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 17 | 391 |
| PROJECT FILE NO. | 608051 | | |

TYPICAL SECTIONS - 3




## ROUTE 38 (MAIN STREET)

STA. 223+35.00 TO 229+85.00
SCALE: 1"=8'

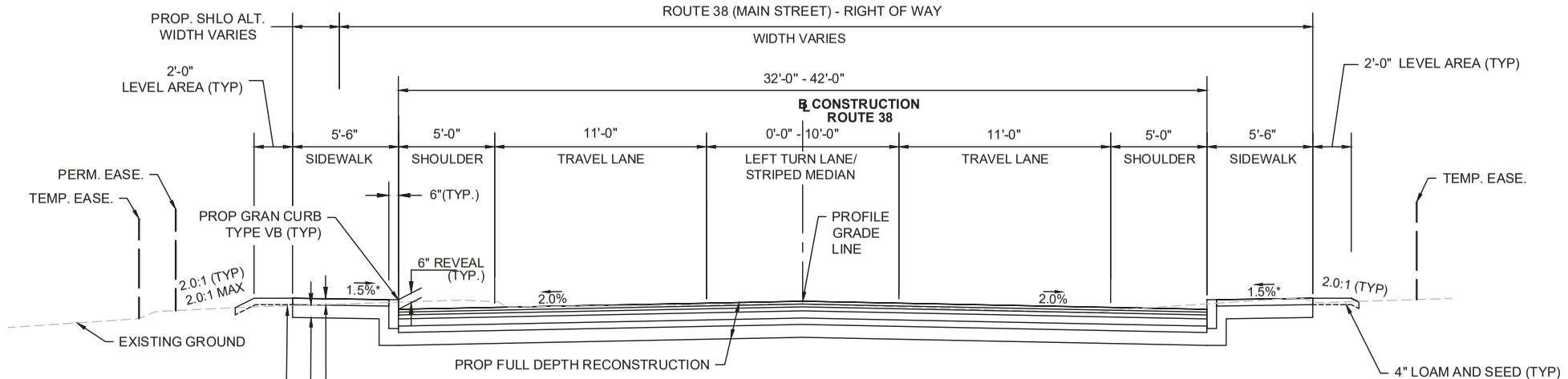
*TOLERANCE FOR CONSTRUCTION = ± 0.5%




## TYPICAL GUARDRAIL AT EOP

STA 248+24 TO 255+50 LT
SCALE: 1"=8'

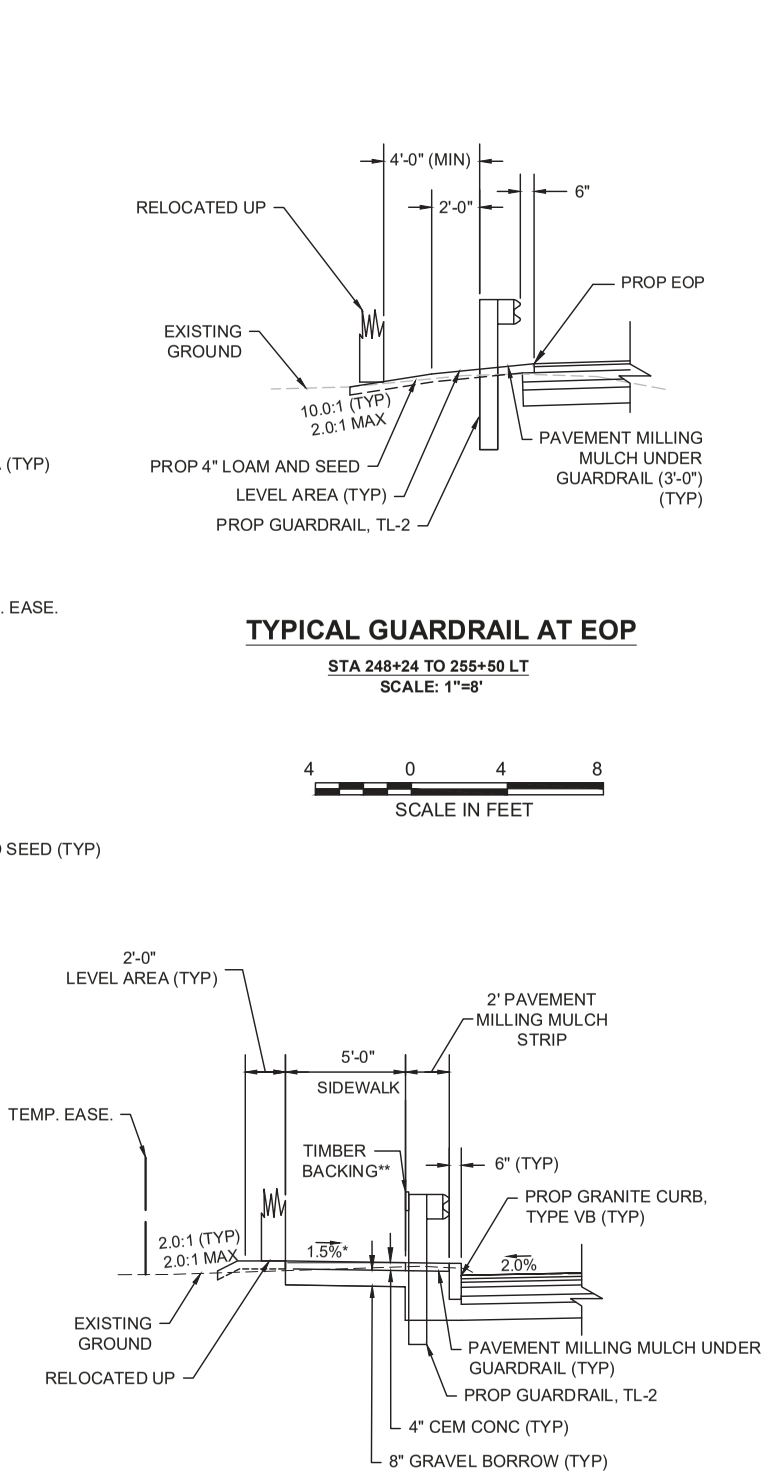
4 0 4 8
SCALE IN FEET




## ROUTE 38 (MAIN STREET)

STA. 222+20.00 TO 223+35.00
STA. 229+85.00 TO 230+32.00
STA. 238+50.00 TO 245+00.00
SCALE: 1"=8'

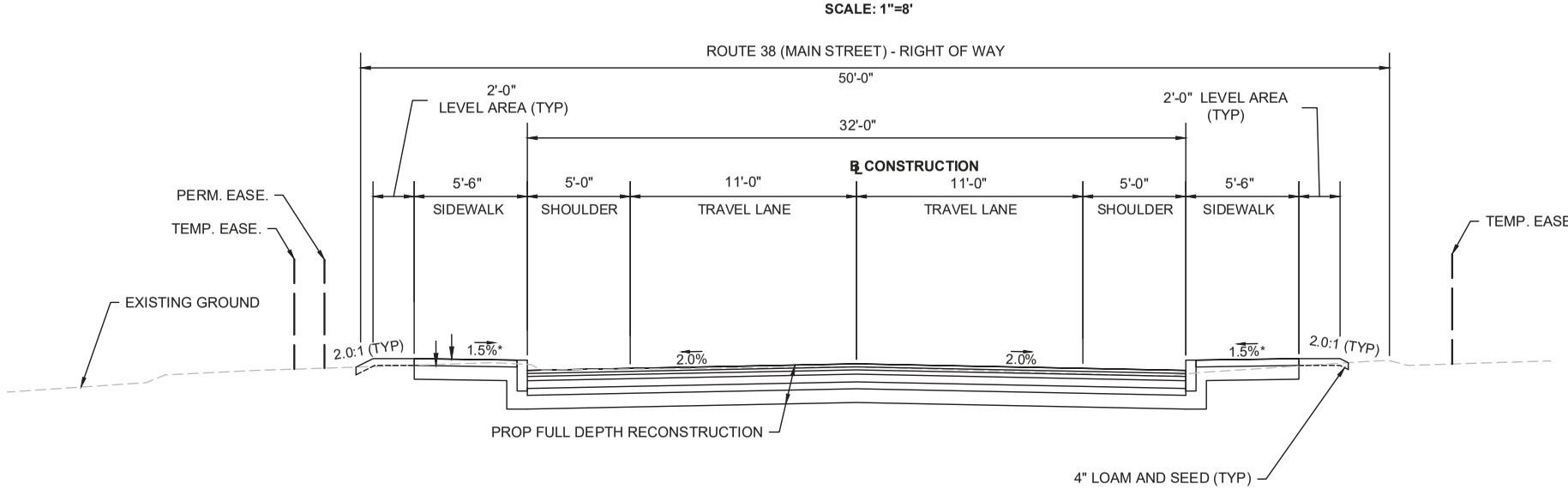
*TOLERANCE FOR CONSTRUCTION = ± 0.5%




**SEE MASSDOT CONSTRUCTION STANDARD DETAILS 400.5.1

## TYPICAL GUARDRAIL AT FACE OF CURB

STA. 236+36 TO 240+81 LT
SCALE: 1"=8'




## ROUTE 38 (MAIN STREET)

STA. 219+40.77 TO 222+20.00
STA. 230+32.00 TO 238+50.00
STA. 245+00.00 TO 248+18.00
SCALE: 1"=8'

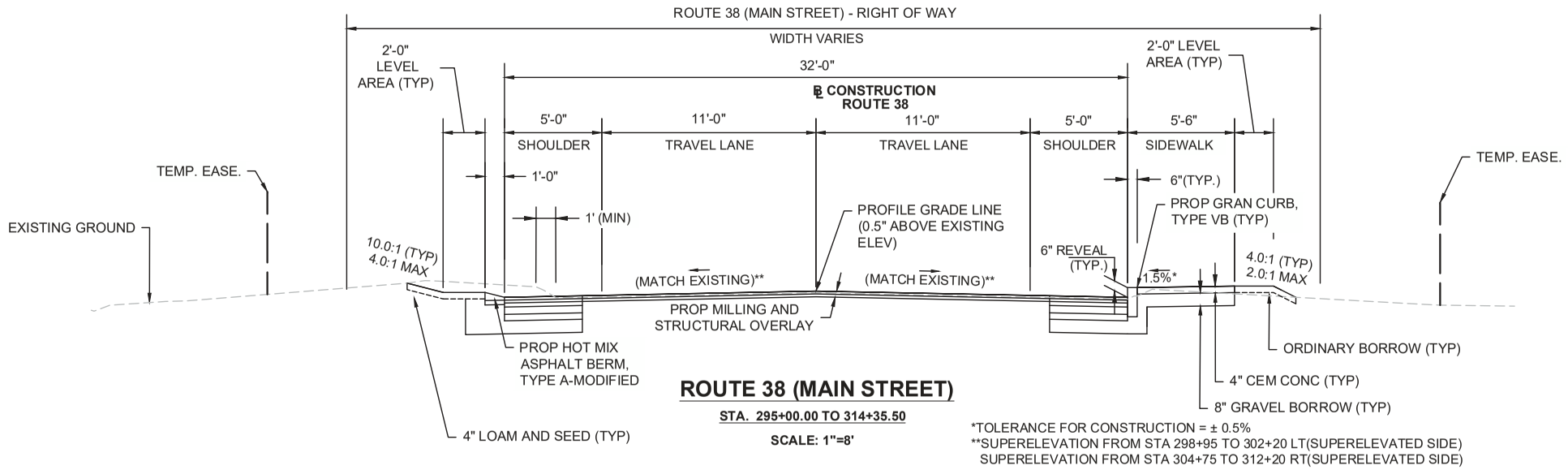
*TOLERANCE FOR CONSTRUCTION = ± 0.5%

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608051_HD05(TYPICAL SECTIONS).DWG
A00831 - 67

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 18 | 391 |
| PROJECT FILE NO. | 608051 | | |

**TYPICAL SECTIONS - 4**

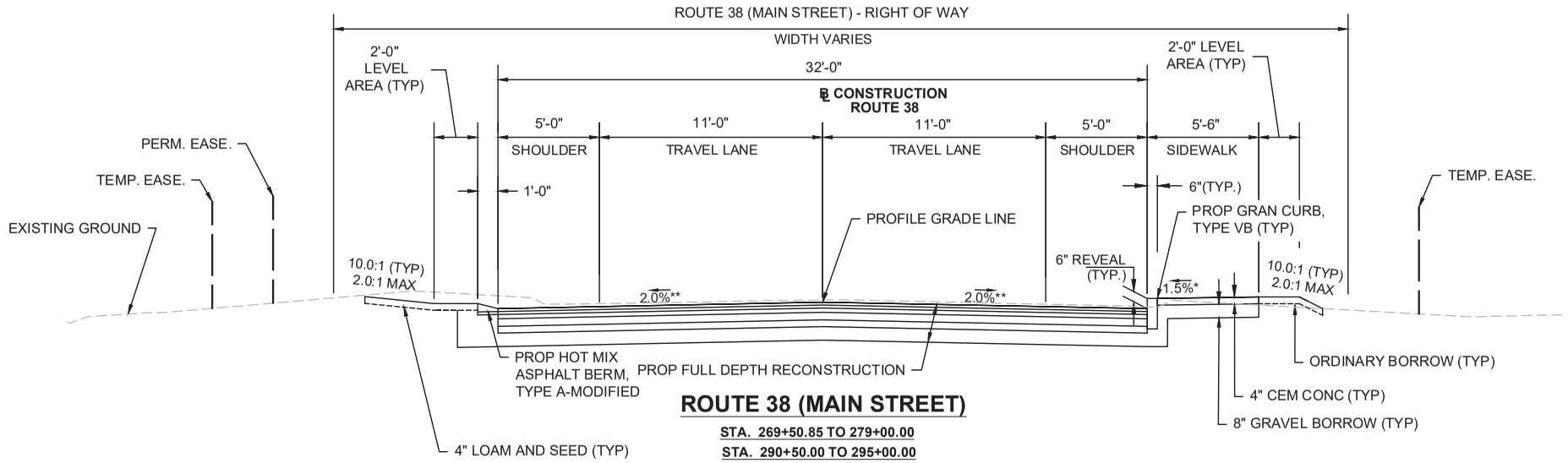



## ROUTE 38 (MAIN STREET)

**STA. 295+00.00 TO 314+35.50**

**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**SUPERELEVATION FROM STA 298+95 TO 302+20 LT(SUPERELEVATED SIDE)
SUPERELEVATION FROM STA 304+75 TO 312+20 RT(SUPERELEVATED SIDE)

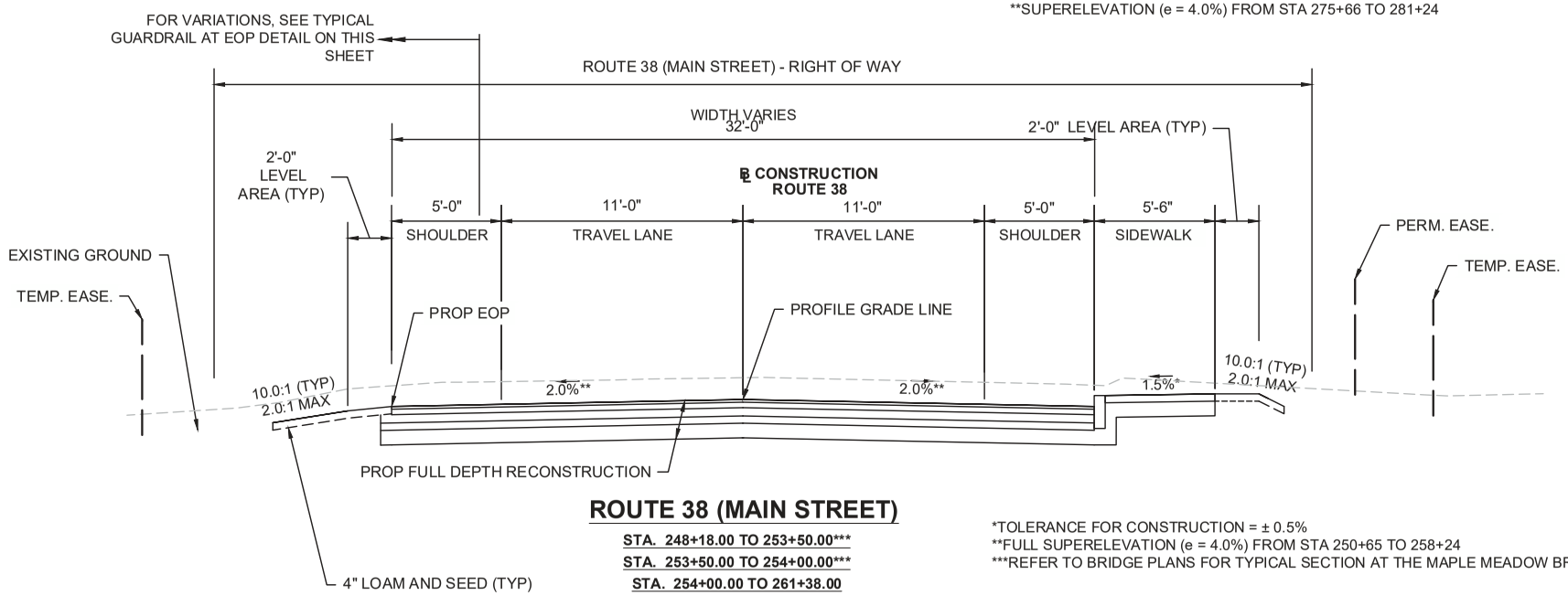



## ROUTE 38 (MAIN STREET)

**STA. 269+50.85 TO 279+00.00**
**STA. 290+50.00 TO 295+00.00**

**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**SUPERELEVATION (e = 4.0%) FROM STA 275+66 TO 281+24

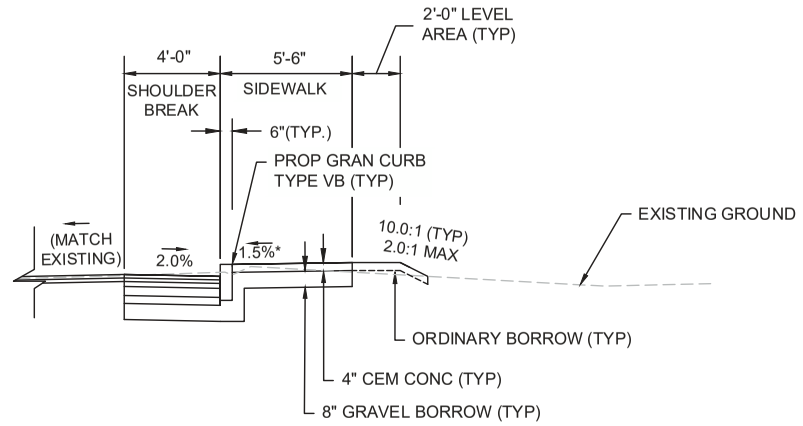



## ROUTE 38 (MAIN STREET)

**STA. 248+18.00 TO 253+50.00*****
**STA. 253+50.00 TO 254+00.00*****
**STA. 254+00.00 TO 261+38.00**
**STA. 279+00.00 TO 290+50.00**

**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**FULL SUPERELEVATION (e = 4.0%) FROM STA 250+65 TO 258+24
***REFER TO BRIDGE PLANS FOR TYPICAL SECTION AT THE MAPLE MEADOW BROOK BRIDGE




## TYPICAL SHOULDER BREAK IN SUPERELEVATED SECTION

**STA 298+95 TO 302+20 LT (NO SIDEWALK)**
**STA 302+75 TO 312+20 RT**
**STA 313+90 TO 318+70 LT**

**SCALE: 1"=8'**

4 0 4 8
SCALE IN FEET

A00831 - 68

ACOE PLANS SHEET 8 OF 27

Proposal No. 608051 - 132406

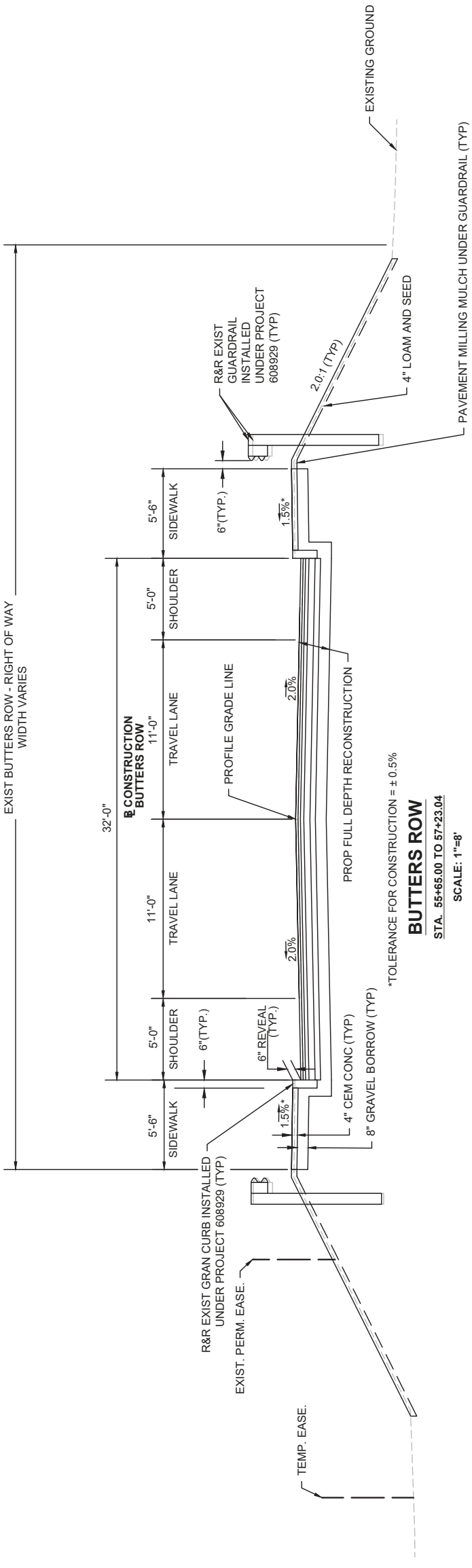
608051_HD05(TYPICAL SECTIONS).DWG Plotted on 12-Mar-2025 2:28 PM

608051_HD05(TYPICAL SECTIONS).DWG Plotted on 12-Mar-2025 2:28 PM

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

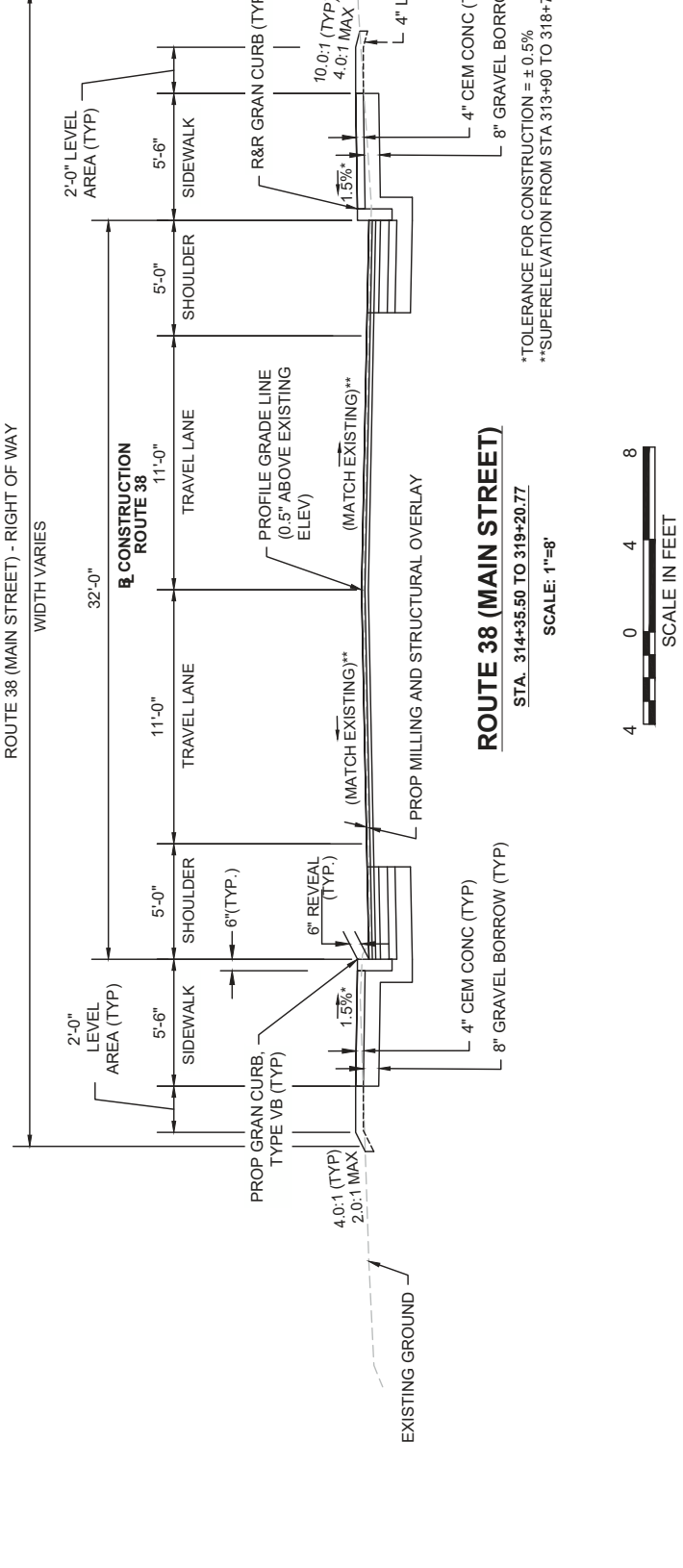
| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 19 | 391 |
| PROJECT FILE NO. 608051 | | | |

**TYPICAL SECTIONS - 5**




*TOLERANCE FOR CONSTRUCTION = ± 0.5%

**BUTTERS ROW**
**STA. 55+65.00 TO 57+23.04**
**SCALE: 1"=8'**




**ROUTE 38 (MAIN STREET)**
**STA. 314+35.50 TO 319+20.77**
**SCALE: 1"=8'**

*TOLERANCE FOR CONSTRUCTION = ± 0.5%
**SUPERELEVATION FROM STA 313+90 TO 318+70 LT(SUPERELEVATED SIDE)

4 0 4 8
SCALE IN FEET

ACOE PLANS SHEET 9 OF 27

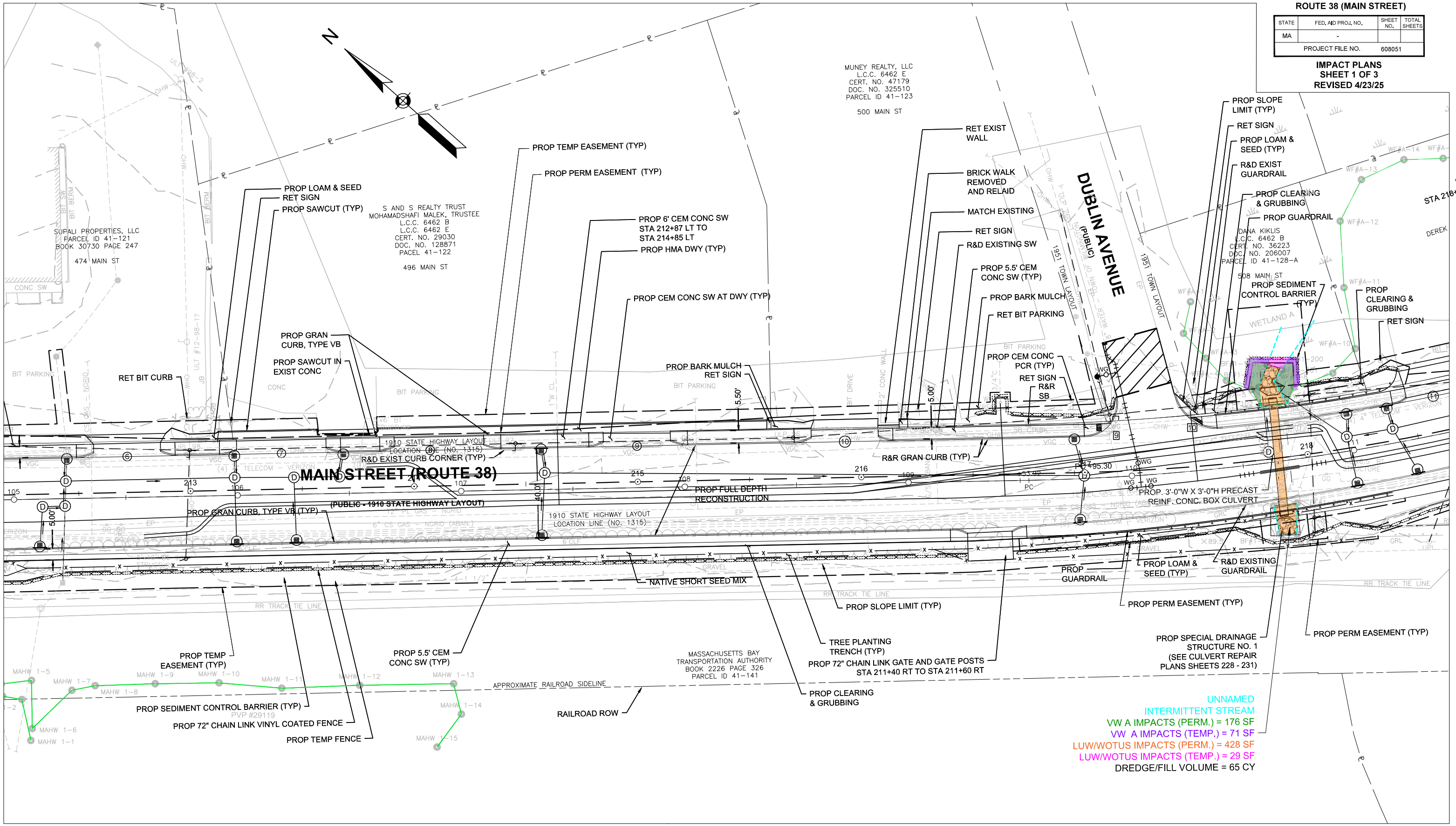
**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | | |
| PROJECT FILE NO. | 608051 | | |

**IMPACT PLANS**
**SHEET 1 OF 3**
**REVISED 4/23/25**

Plotted on 23-Apr-2025 9:33 AM
608051_EV(IMPACT-PLANS).DWG






PERMANENT VW IMPACT AREA = 3,276 SF ±

PERMANENT LUW/WOTUS IMPACT AREA = 2,394 SF ±

TOTAL PERMANENT IMPACT AREA = 5,670 SF ±

TEMPORARY VW IMPACT AREA = 2,825 SF ±

TEMPORARY LUW/WOTUS IMPACT AREA = 575 SF ±

TOTAL TEMPORARY IMPACT AREA = 3,400 SF ±

VEGETATED WETLAND (VW)

BANK/OHW (PERENNIAL STREAM)

BANK/OHW (INTERMITTENT STREAM)

TOTAL DREDGE/FILL WITHIN LUW/WOTUS VOLUME = 715 CY

ACOE PLANS SHEET 10 OF 27

0 20 50 100

SCALE: 1" = 40'

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | | |
| PROJECT FILE NO. | 608051 | | |

**IMPACT PLANS**
**SHEET 2 OF 3**
**REVISED 4/23/25**

PROP 1.5' MILLING MULCH STRIP (TYP)
PROP GUARDRAIL
PROP SAWCUT (TYP)
PROP CEM CONC SW AT DWY (TYP)
PROP HMA BERM, TYPE A-MODIFIED SEE DETAIL ON SHEET 222
RET GUARDRAIL
EXISTING PHRAGMITES PROVIDE INVASIVE SPECIES MANAGEMENT PLAN FOR PLANTS AND DISTURBED SOIL WHERE THEY ARE WITHIN THE LIMIT OF WORK
R&D SIGN
R&D EXIST BIT BERM (TYP)
PROP GRAN CURB TYPE VB (TYP)
R&D STUMP
RET SIDEWALK (TYP)
ONE CROSS LLC BOOK 35186 PAGE 80 PARCEL ID 40-11
CROSS ST
PROP TEMP EASEMENT (TYP)
PROP SLOPE LIMIT (TYP)
R&S SIGN
PROP SEDIMENT CONTROL BARRIER (TYP)
R&D EXISTING GUARDRAIL
PROP LOAM & SEED (TYP)
VERIZON NEW ENGLAND INC. PARCEL ID 40-12 BOOK 1212 PAGE 352
MAIN ST
VW D
VW IMPACTS (PERM.) = 270 SF
VW IMPACTS (TEMP.) = 655 SF
PROP. SEDIMENT CONTROL BARRIER (TYP.)
PROP HMA DWY (TYP)
PROP PERM EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
R&D EXISTING GUARDRAIL
PROP 5' CEM CONC SW (TYP)
TAKING ON BEHALF OF THE TOWN
PROP SAWCUT & MATCH EXISTING
LIMIT OF WORK
END PAVEMENT FINE MILLING AND RESURFACING STA. 41+95.00
END FULL DEPTH RECONSTRUCTION MATCH EXISTING GRADE & ELEVATION STA. 40+70.00
RET BERM
PROP TEMP EASEMENT (TYP)
TOWN OF WILMINGTON PARCEL ID 40-13-A BOOK 35162 PAGE 138
CROSS ST
CROSS STREET
(2023 TOWN ALTERATION - VARIABLE WIDTH)
1908 TOWN LAYOUT
PROP GUARDRAIL - CURVED
PROP CLEARING & GRUBBING
PROP PERM EASEMENT (TYP)
2023 TOWN ALTERATION SECTION 3 (PLAN BK 251 PG 51)
(DEED BK 37867 PG 1)
MAIN STREET (ROUTE 38)
(PUBLIC - 1910 STATE HIGHWAY LAYOUT)
SEE NOTE 1
RET EXIST HEADWALL
PROP GUARDRAIL
PROP FULL DEPTH RECONSTRUCTION
PROP GRAN CURB, TYPE VB (TYP)
PROP CLEARING AND GRUBBING
R&D EXIST BIT BERM (TYP)
LOCATION LINE OF 1910 STATE HIGHWAY LAYOUT (SHEET NO. 1315)
N 45° 08' 01" E 57.49'
GRAN CURB PROPOSED UNDER PROJECT 608929
PROP CONC HEADWALL
PROP STONE FOR PIPE END
PROP PERM EASEMENT (TYP)
PROP GUARDRAIL
PROP 5.5' CEM CONC SW (TYP)
PROP CLEARING & GRUBBING
PROP SEDIMENT CONTROL BARRIER (TYP)
PROP SLOPE LIMIT (TYP)
PROP LOAM & SEED (TYP)
SUBJECT TO VERIZON EASEMENT BOOK 36483 PAGE 73 (NOT PLOTTABLE)
VW C
VW IMPACTS (PERM.) = 2,315 SF
VW IMPACTS (TEMP.) = 1,443 SF
PROP TEMP EASEMENT (TYP)
BUTTERS ROW
2023 TOWN ALTERATION, SECTION 2 (DEED BK 37867 PG 51) (PLAN BK 251 PG 51)
PC +06+25
PC +56.92
L=166.69'
R=200.00'
Δ=47°-45'-47"
N 85° 59' 00" E 200.00'
WETLANDS
WETLAND C
TREES
GRASS
1 STORY BRICK
CONC RET WALL
STONE RET WALL
BIT BERM
OHW
GRL
WG
SMH
CB
D-PUE-1-T BOOK 37867 PAGE 1
D-2-T BOOK 37867 PAGE 1
GR-PUE-1-T BOOK 37867 PAGE 1

PERMANENT VW IMPACT AREA
TEMPORARY VW IMPACT AREA
TEMPORARY LUW/WOTUS IMPACT AREA
VEGETATED WETLAND (VW)
BANK/OHW (PERENNIAL STREAM)
BANK/OHW (INTERMITTENT STREAM)

0 20 50 100
SCALE: 1" = 40'



A00831 - 71
Proposal No. 608051 - 132406
608051_EV(IMPACT-PLANS).DWG Plotted on 23-Apr-2025 3:53 PM

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | | |
| PROJECT FILE NO. | 608051 | | |

**IMPACT PLANS**
**SHEET 3 OF 3**
**REVISED 4/23/25**

TRAFFIC SIGNAL CONDUIT
N/A

WATER SUPPLY ALTERATIONS
SEE SHEET 124

DRAINAGE DETAILS
SEE SHEET 103

MAPLE MEADOW BROOK
VW E IMPACTS (PERM.) = 486 SF
VW E IMPACTS (TEMP.) = 346 SF
LUW/WOTUS (PERM.) = 2,118 SF
LUW/WOTUS (TEMP.) = 515 SF
VW G IMPACTS (TEMP.) = 221 SF
DREDGE/FILL VOLUME = 650 CY

MAPLE MEADOW BROOK
W E IMPACTS (PERM.) = 29 SF
W E IMPACTS (TEMP.) = 89 SF
LUW/WOTUS (TEMP.) = 31 SF

MAPLE MEADOW BROOK
FLOW
OHW EL. 77.78' (NAVD88)

PROP SLOPE LIMIT (TYP)
PROP CLEARING & GRUBBING
PROP LOAM & NATIVE SEED (TYP)
PROP SEDIMENT CONTROL BARRIER (TYP)
PROP PERM EASEMENT (TYP)
PROP. CHANNEL ARMORING
PROP. FLOATING SILT FENCE (TYP)
PROP COFFERDAM (TYP)
BRIDGE NO. W-38-011 (802)
PROP COMPOST AND SEASONALLY FLOODED SEED MIX OVER STONE (TYP)
PROP. STONE FOR PIPE ENDS (TYP.)
PROP PERM EASEMENT (TYP)
PROP SEDIMENT CONTROL BARRIER
R&D EXIST GUARDRAIL
PROP GUARDRAIL
PROP GRAN CURB TYPE VB (TYP)
PROP HMA DWY (TYP)
(RET)
PROP SAWCUT (TYP)
PROP CEM CONC SW AT DWY (TYP)
PROP TEMP EASEMENT (TYP)
R&D EXISTING GUARDRAIL
PROP PERMANENT IMPACT ATTENUATOR, NON-REDIRECTIVE, TL-3
PROP EOP (TYP)
PROP ROUTE 38 CONST BL
MAIN STREET (ROUTE 38)
(PUBLIC - 1911 STATE HIGHWAY LAYOUT)
PROP FULL DEPTH RECONSTRUCTION
R=1000.00'
L=639.08'
T=330.88'
R&D EXISTING GUARDRAIL
PROP SLOPE LIMIT (TYP)
PROP 5.5' CEM CONC SW (TYP)
PROP CLEARING & GRUBBING
PROP TEMP PEDESTRIAN BRIDGE AND WALKWAY
PROP LOAM & NATIVE SEED (STA 253+91 - 257+38)
PROP NATURAL STREAMBED MATERIAL OVER M2.02.2 (TYP) SEE DRAINAGE AND UTILITY DETAIL SHEETS
PROP LOAM & NATIVE SEED
PROP JUTE MESH (STA 253+54 RT - 253+73 RT)
PROP GUARDRAIL
100-YEAR FLOOR ZONE (TYP)
100-YEAR FLOODPLAIN UPSTREAM EL. 82.9'
REM TREE
COMPENSATORY FLOOD STORAGE AREA SEE SHEET: 219
PROP WETLAND REPLICATION AREA - 3,510 SF (SEE SHEET 212)
LIMIT OF REPLICATION AREA
PROP WETLAND REPLICATION AREA: SEE SHEET: ###
PROP HMA DWY (TYP)
RET SIGN
PROP SAWCUT (TYP)
PCC +18.67
100 FOOT WETLAND BUFFER ZONE
ACCESS EASEMENT BOOK 8666 PAGE 82 BOOK 36783 PAGE 145 BOOK 37155 PAGE 33
SUBJECT TO RECIPROCAL EASEMENTS BOOK 37155 PAGE 258 (NOT PLOTTABLE)
1911 STATE HIGHWAY LAYOUT LOCATION LINE (NO. 1352)

N/F
TOWN OF WILMINGTON
PARCEL ID 39-5
BOOK 26062 PAGE 215
9 CROSS ST

TOWN OF WILMINGTON
PARCEL ID 39-5
BOOK 26062 PAGE 215
9 CROSS ST

TEXTRON SYSTEMS CORPORATION
PARCEL ID 48-73-A
BOOK 24103 PAGE 25
BOOK 35305 PAGE 130
BOOK 35305 PAGE 132
201 LOWELL ST

U-HAUL REAL ESTATE COMPANY
PARCEL ID 39-11-A
BOOK 5015 PAGE 103
687 MAIN ST

TOWN OF WILMINGTON
BOOK 2299 PAGE 288
PARCEL ID 39-9
MAIN ST

PERMANENT VW IMPACT AREA
TEMPORARY VW IMPACT AREA
TEMPORARY LUW/WOTUS IMPACT AREA
PERMANENT LUW/WOTUS IMPACT AREA

VEGETATED WETLAND (VW)
BANK/OHW (PERENNIAL STREAM)
BANK/OHW (INTERMITTENT STREAM)

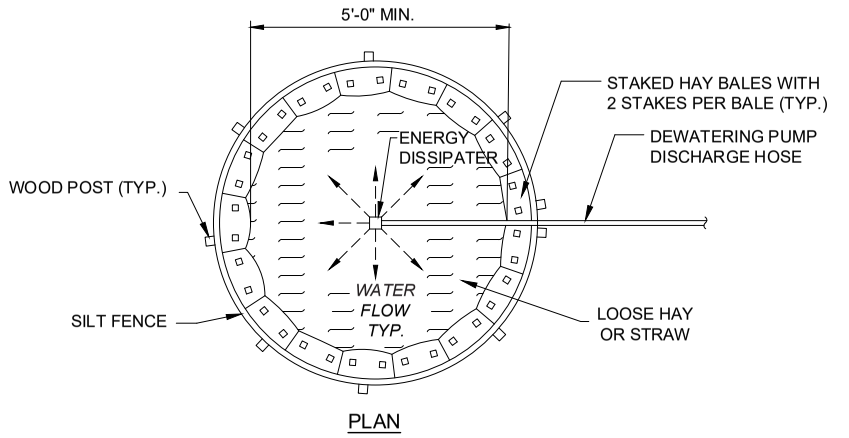
0 20 50 100
SCALE: 1" = 40'

ACOE PLANS SHEET 12 OF 27

FOR PROFILE:
SEE SHEET NO. 50

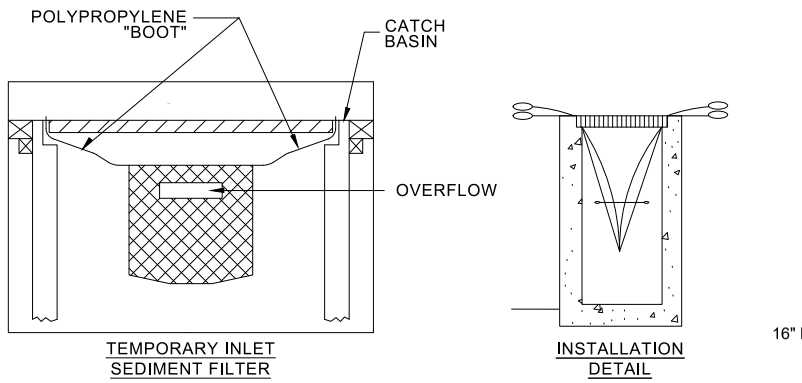

608051_EV(IMPACT-PLANS).DWG Plotted on 23-Apr-2025 3:21 PM

Plotted on 20-Mar-2025 5:38 PM
608051_UT02(DRAINAGE-DETAILS).DWG
Proposal No. 608051 - 132406
A00831 - 73




NOTE:
THIS DETAIL SHOWS ONE METHOD OF SEDIMENTATION CONTROL DURING DEWATERING.

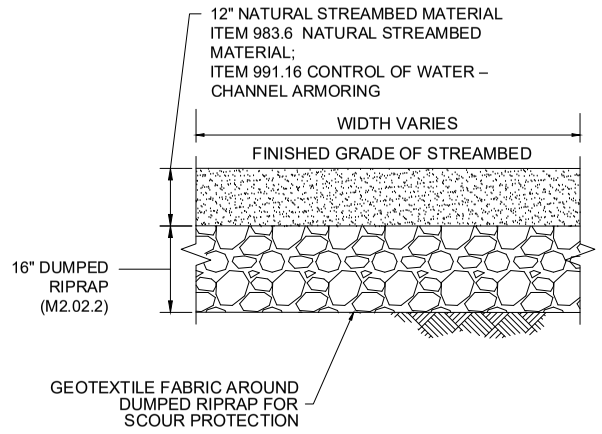
## DEWATERING SEDIMENTATION BASIN DETAIL
NOT TO SCALE



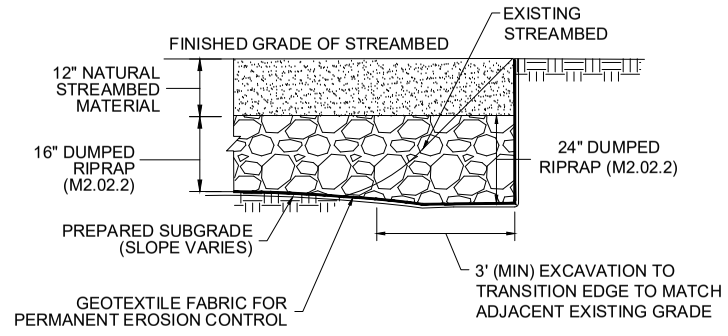

NOTE:

1. INSTALL INLET PROTECTION IN EXISTING CATCH BASIN, BEFORE COMMENCING WORK.
2. GRATE TO BE PLACED OVER INLET PROTECTION.
3. INLET PROTECTION SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

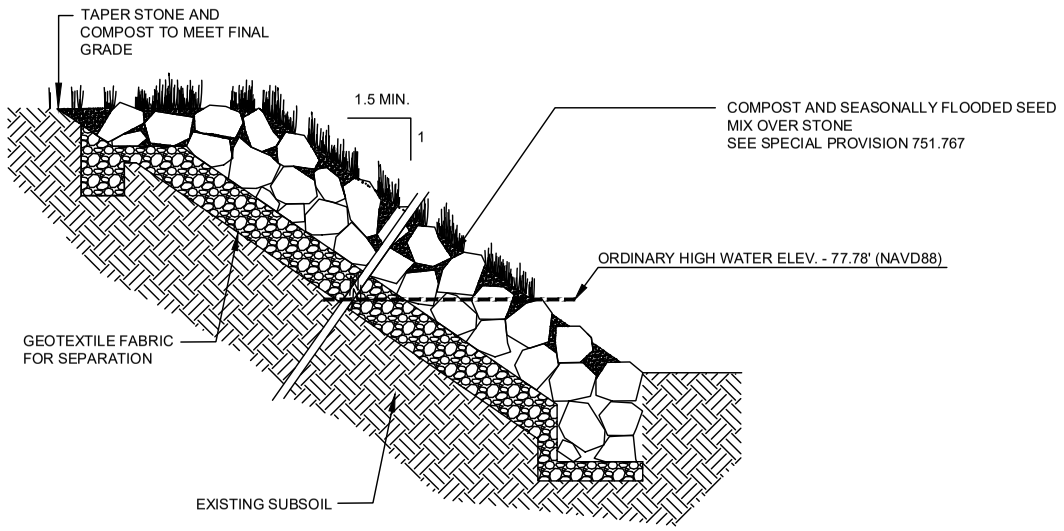
## INLET PROTECTION FILTER BAG
NOT TO SCALE



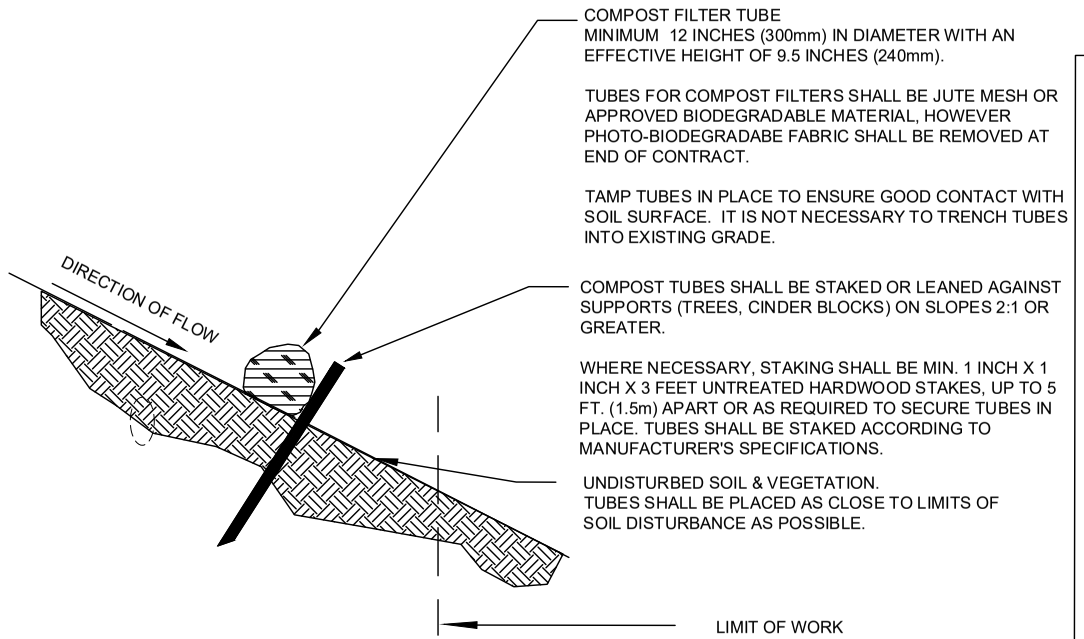

## CHANNEL ARMORING
NOT TO SCALE




## RIPRAP ARMORING END TRANSITION
NOT TO SCALE

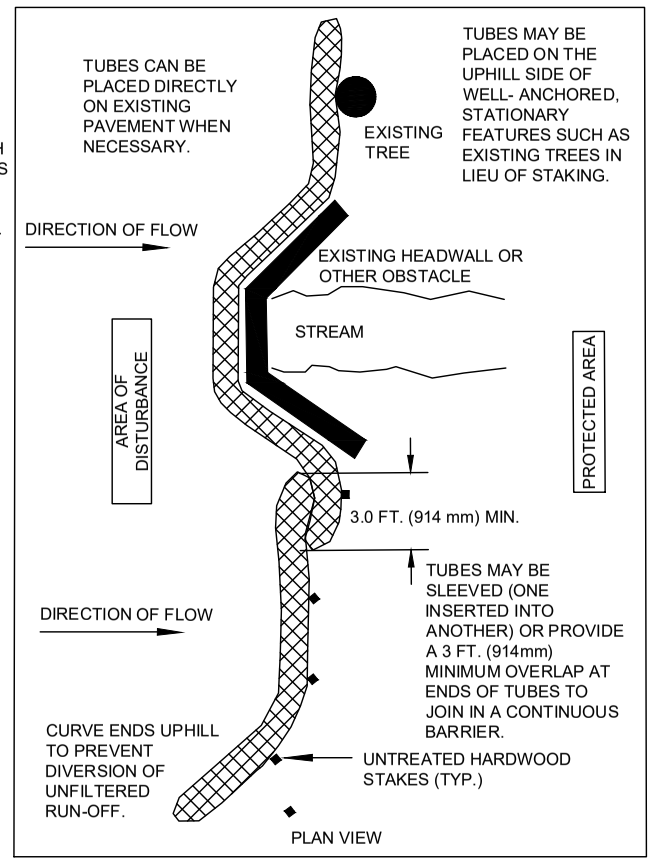



## COMPOST AND SEASONALLY FLOODED SEED MIX OVER STONE
NOT TO SCALE




GENERAL NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.




## TYPICAL COMPOST FILTER TUBE DETAIL
NOT TO SCALE

EROSION AND SEDIMENT CONTROLS

1. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING THE EROSION AND SEDIMENT DURING THE CONSTRUCTION PROCESS. SITE SPECIFIC CONDITIONS MAY REQUIRE MODIFICATIONS IN THE FIELD, BUT THE CONTRACTOR MUST ENSURE THAT THE CHANGES MEET THE MINIMUM REQUIREMENTS OF THIS PLAN AND ARE APPROVED BY THE ENGINEER.
2. IN ORDER TO MINIMIZE EROSION AND SEDIMENT RUNOFF FROM THE SITE, THE CONTRACTOR SHALL MAINTAIN EXISTING VEGETATION WHERE POSSIBLE AND STABILIZE THE DISTURBED PORTIONS OF THE SITE AS QUICKLY AS POSSIBLE. THIS MAY INCLUDE PHASING THE PROJECT AS NEEDED TO MINIMIZE THE SIZE OF THE DISTURBED AREAS ON THE SITE. THE COST OF PHASING THE PROJECT IS INCIDENTAL TO THE CONTRACT.
3. THE CONTRACTOR MUST ALSO ANTICIPATE INCREASED RUNOFF FROM STEEPER SLOPES AND DURING HIGH GROUNDWATER CONDITIONS. THIS MAY OCCUR DURING THE WET SEASON (TYPICALLY MARCH THROUGH APRIL) OR AFTER SIGNIFICANT PRECIPITATION EVENTS.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF SILT FENCES, DRAINAGE SWALES, EARTH DIKES, TEMPORARY SETTLING BASINS, CHECK DAMS AND TEMPORARY SEDIMENT BASINS. THESE PRACTICES INCLUDE DIVERTING FLOWS FROM EXPOSED SOILS, LIMITING RUNOFF AND LIMITING THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE TO THE MAXIMUM EXTENT PRACTICABLE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
5. ALL DISTURBED SURFACES SHALL BE STABILIZED WITHIN 14 DAYS AFTER CONSTRUCTION IN ANY PORTION OF THE SITE THAT HAS BEEN COMPLETED OR WHERE CONSTRUCTION HAS TEMPORARILY CEASED.
6. THE CONTRACTOR SHALL, AT ALL TIMES, HAVE A STOCKPILE OF COMPOST FILTER TUBES AND SILT FENCE ADEQUATE TO REINFORCE/REPLACE EROSION AND SEDIMENT CONTROL AS NEEDED.
7. IF REQUIRED, THE CONTRACTOR SHALL OBTAIN ALL PERMITS ASSOCIATED WITH DEWATERING ACTIVITIES AT NO ADDITIONAL COST TO THE TOWN.

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | ### | 391 |
| PROJECT FILE NO. | | 608051 | |

## DRAINAGE & UTILITY DETAILS - 3

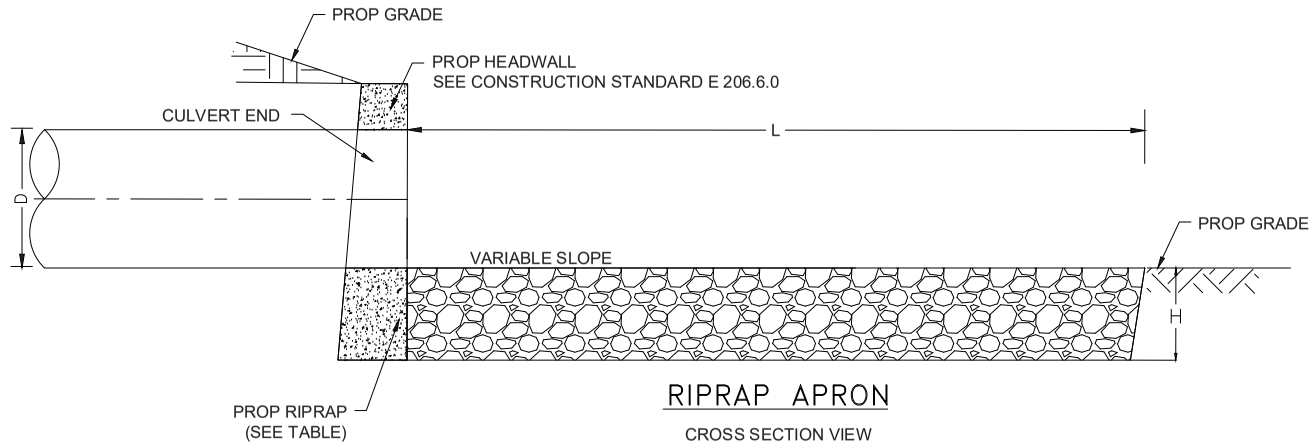
| CULVERT SIZE D (INCHES) | LENGTH OF APRON L (FEET) | DEPTH OF APRON H (INCHES) | MASSDOT RIPRAP SIZE |
|---|---|---|---|
| 30 | 12.5 | 24 | M2.02.2 |
| 36 | 16 | 24 | M2.02.2 |
| 42 | 21 | 30 | M2.02.1 |
| 48 | 24 | 30 | M2.02.1 |

SOURCE:

FHWA STANDARD DRAWING C251-50

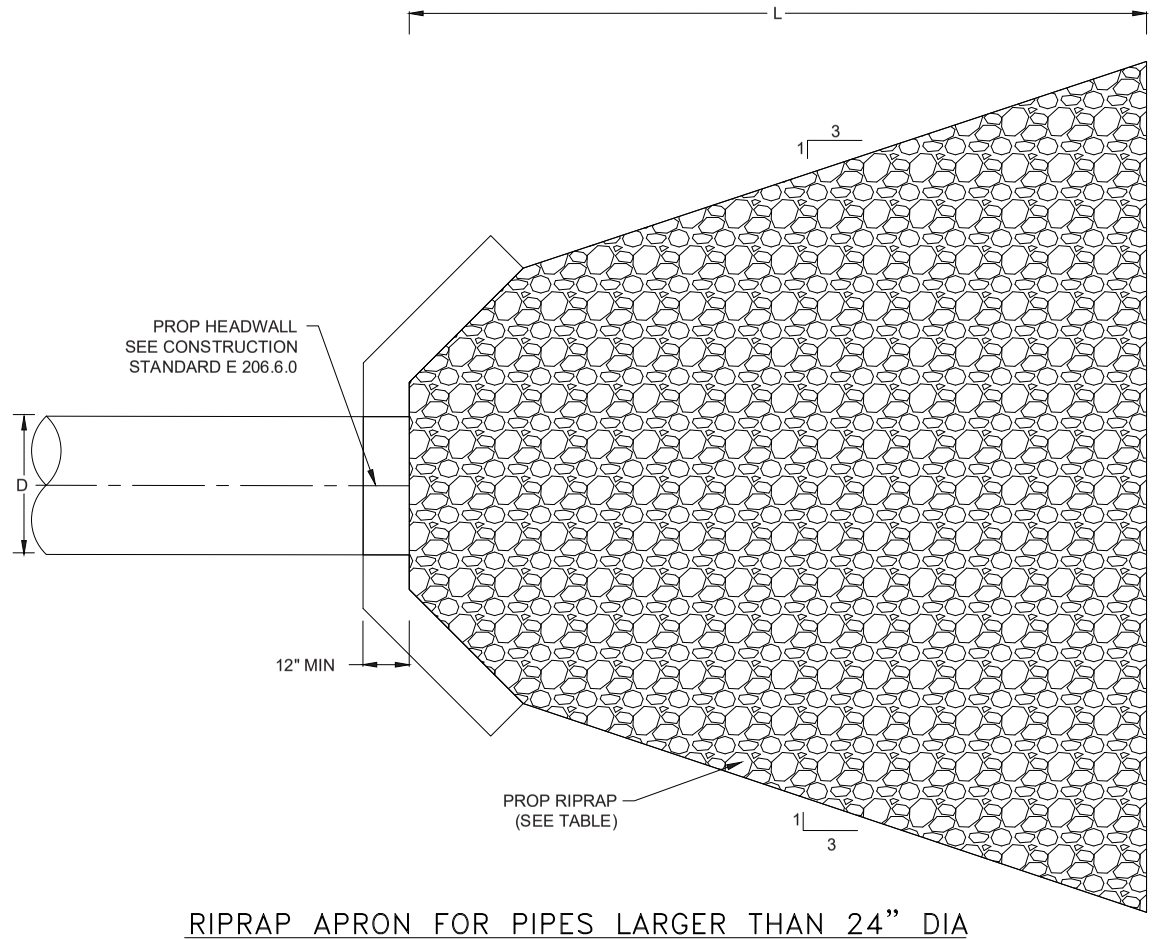
NOTES:

FOR PIPES 24" DIA. AND LESS, USE STONE PIPE ENDS
MASSDOT STANDARD DETAIL E 206.7.0




RIPRAP APRON

CROSS SECTION VIEW
NOT TO SCALE

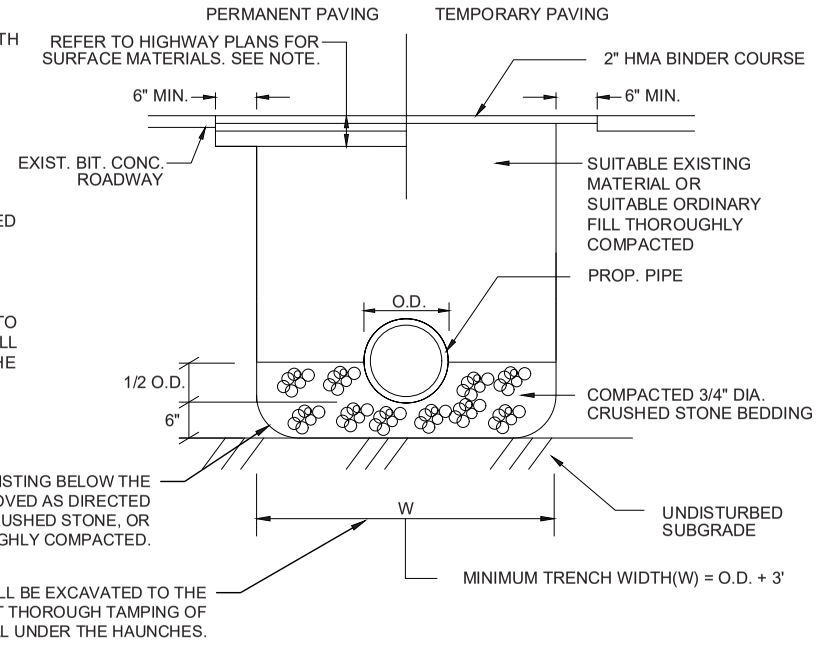



RIPRAP APRON FOR PIPES LARGER THAN 24" DIA

PLAN VIEW
NOT TO SCALE

NOTE:

1. PERMANENT PAVING TO BE USED IN ALL AREAS OF MILL AND OVERLAY. MATERIALS SHALL MATCH CORRESPONDING FULL DEPTH SECTION. REFER TO TYPICAL ROADWAY SECTIONS.
2. HMA FOR PATCHING TO BE USED IN AREAS OF FUTURE FULL DEPTH CONSTRUCTION.
3. EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER, OR SATISFACTORY BORROW SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 6 INCHES IN DEPTH AND THOROUGHLY COMPACTED. BACKFILLING TO A POINT 2 FEET OVER THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3 INCHES - EXCEPT MATERIAL USED TO BACKFILL CORRUGATED PLASTIC PIPE SHALL CONSIST OF GRAVEL BORROW MEETING THE REQUIREMENTS OF M1.03.0: GRAVEL BORROW TYPE D, TO A DEPTH OF 2 FEET OVER THE TOP OF PIPE.




TYPICAL PIPE TRENCH

NOT TO SCALE



A00831 - 74
608051 UT02(DRAINAGE-DETAILS).DWG Plotted on: 20-Mar-2025 5:38 PM
Proposal No. 608051 - 132406

LEGEND

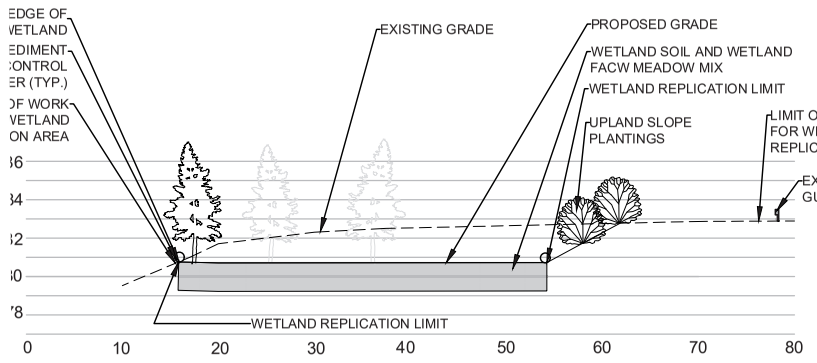
- LIMIT OF WORK
- SEDIMENT CONTROL BARRIER
- 595 — PROPOSED CONTOUR
- 595 — EXISTING CONTOUR
- 124.694 — PROPOSED SPOT GRADE
- 124.694 — EXISTING SPOT GRADE
- 4" LOAM AND COMPOST BLANKET & SHORT GRASSLAND MIX
- WETLAND SOIL AND WETLAND FACW MEADOW MIX
- COMPOST BLANKET & PART SHADE ROADSIDE MIX
- PROPOSED SHRUB
- PROPOSED TREE
- PROPOSED SHRUB WITHIN WETLAND REPLICATION
- PROPOSED TREE WITHIN WETLAND REPLICATION

FACW MEADOW MIX = 4,400 S.F.

NATIVE SHORT GRASSLAND MIX = 5,807 S.F.

NOTES:

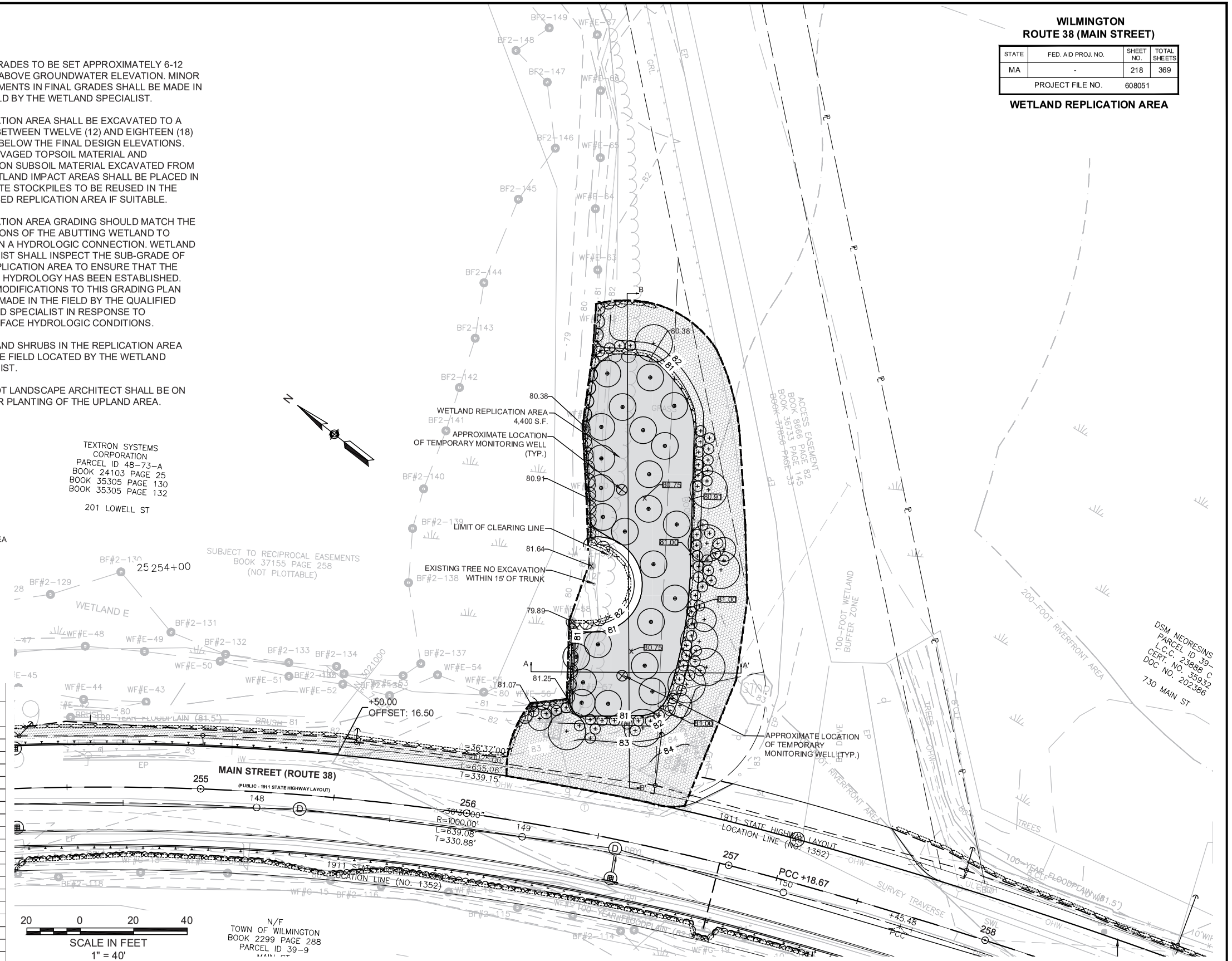
1. FINAL GRADES TO BE SET APPROXIMATELY 6-12 INCHES ABOVE GROUNDWATER ELEVATION. MINOR ADJUSTMENTS IN FINAL GRADES SHALL BE MADE IN THE FIELD BY THE WETLAND SPECIALIST.
2. REPLICATION AREA SHALL BE EXCAVATED TO A DEPTH BETWEEN TWELVE (12) AND EIGHTEEN (18) INCHES BELOW THE FINAL DESIGN ELEVATIONS. THE SALVAGED TOPSOIL MATERIAL AND B-HORIZON SUBSOIL MATERIAL EXCAVATED FROM THE WETLAND IMPACT AREAS SHALL BE PLACED IN SEPARATE STOCKPILES TO BE REUSED IN THE PROPOSED REPLICATION AREA IF SUITABLE.
3. REPLICATION AREA GRADING SHOULD MATCH THE ELEVATIONS OF THE ABUTTING WETLAND TO MAINTAIN A HYDROLOGIC CONNECTION. WETLAND SPECIALIST SHALL INSPECT THE SUB-GRADE OF THE REPLICATION AREA TO ENSURE THAT THE PROPER HYDROLOGY HAS BEEN ESTABLISHED. MINOR MODIFICATIONS TO THIS GRADING PLAN MAY BE MADE IN THE FIELD BY THE QUALIFIED WETLAND SPECIALIST IN RESPONSE TO SUBSURFACE HYDROLOGIC CONDITIONS.
4. TREES AND SHRUBS IN THE REPLICATION AREA SHALL BE FIELD LOCATED BY THE WETLAND SPECIALIST.
5. MASSDOT LANDSCAPE ARCHITECT SHALL BE ON SITE FOR PLANTING OF THE UPLAND AREA.

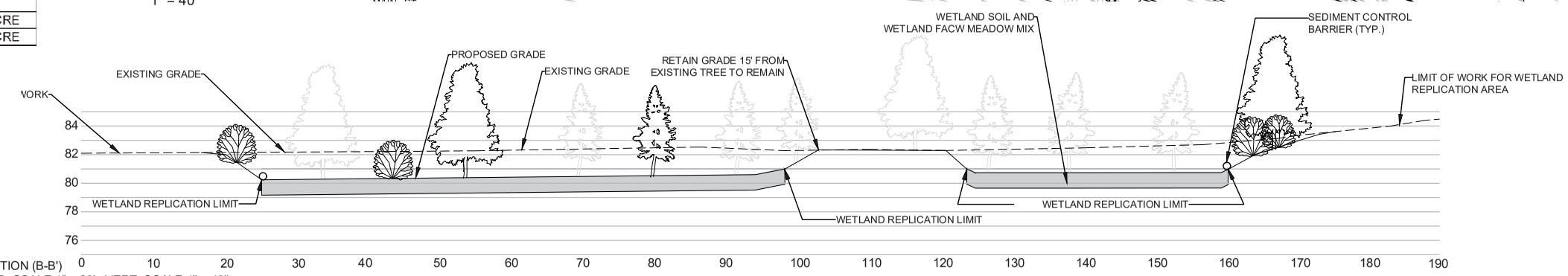



SECTION (A-A')
(HOR. SCALE 1" = 20' , VERT. SCALE 1" = 10')

PLANT LIST - WETLAND REPLICATION AND ASSOCIATED UPLAND

| KEY | QTY | WETLAND STATUS | BOTANICAL NAME | COMMON NAME | PLANT SIZE |
|---|---|---|---|---|---|
| **DECIDUOUS TREES IN UPLAND AREA** | | | | | |
| AC | 4 | FAC | AMELANCHIER CANADENSIS | SERVICEBERRY | 4-5' HT |
| LT | 4 | FACU | LIRODENDRON TULIPIFERA | TULIP TREE | 1-1.5" CAL. |
| QC | 5 | FACU | QUERCUS COCCINEA | SCARLET OAK | 1-1.5" CAL. |
| **DECIDUOUS TREES IN REPLICATION AREA- 24 TOTAL** | | | | | |
| AR | 2 | FAC | ACER RUBRUM | RED MAPLE | 4-6' HT |
| AS | 10 | FACW | ACER SACCHARINUM | SILVER MAPLE | 4-6' HT |
| QB | 4 | FACW | QUERCUS BICOLOR | SWAMP WHITE OAK | 4-6' HT |
| SN | 8 | OBL | SALIX NIGRA | BLACK WILLOW | 4-6' HT |
| **DECIDUOUS SHRUBS IN UPLAND AREA** | | | | | |
| CP | 15 | UPL | COMPTONIA PEREGRINA | SWEETFERN | 1 GALLON |
| CR | 15 | FAC | CORNUS RACEMOSA | GRAY TWIG DOGWOOD | 2-3' HT |
| RA | 15 | UPL | RHUS AROMATICA (NO CULTIVARS) | FRAGRANT SUMAC | 2-3' HT |
| VD | 15 | FAC | VIBURNUM DENTATUM | ARROWWOOD VIBURNUM | 2-3' HT |
| **HERBACEOUS** | | | | | |
| | - | - | WETLAND FACW MEADOW MIX | | 20 LBS PER ACRE |
| | - | - | SHORT GRASSLAND MIX | | 20 LBS PER ACRE |




SECTION (B-B')
(HOR. SCALE 1" = 20' , VERT. SCALE 1" = 10')

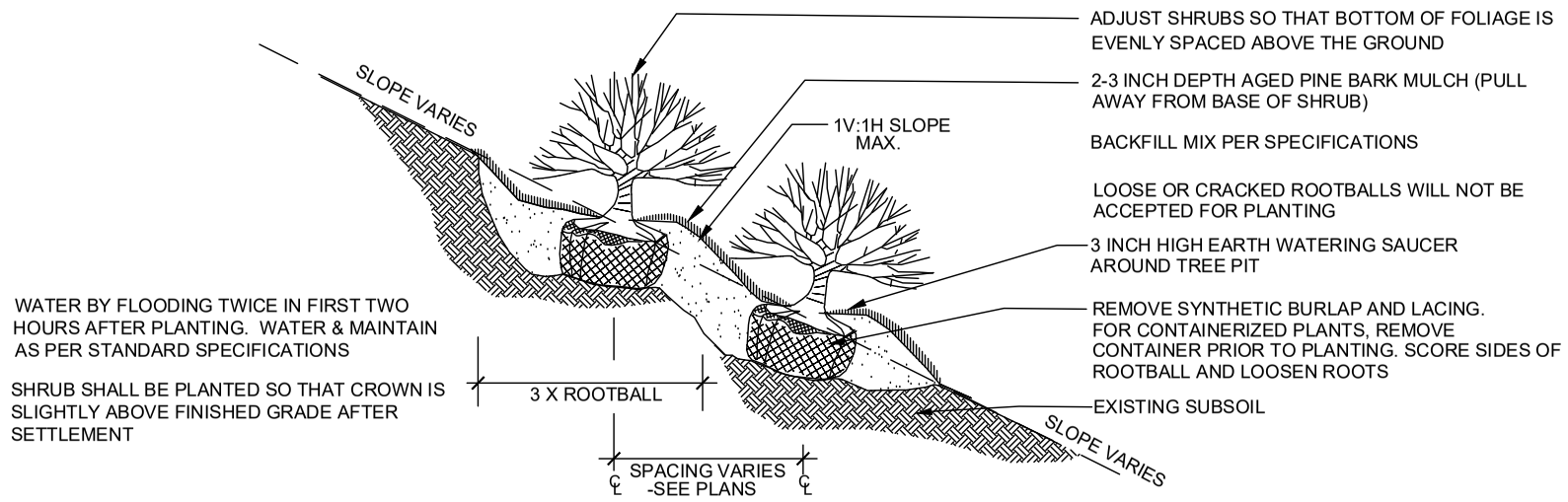


Plotted on 12-Mar-2025 3:30 PM
608051_EV(P-REPLICATION).DWG
Proposal No. 608051 - 132406
A00831 - 75

608051_HD11(CONSTRUCTION DETAILS).DWG Plotted on 12-Mar-2025 3:30 PM

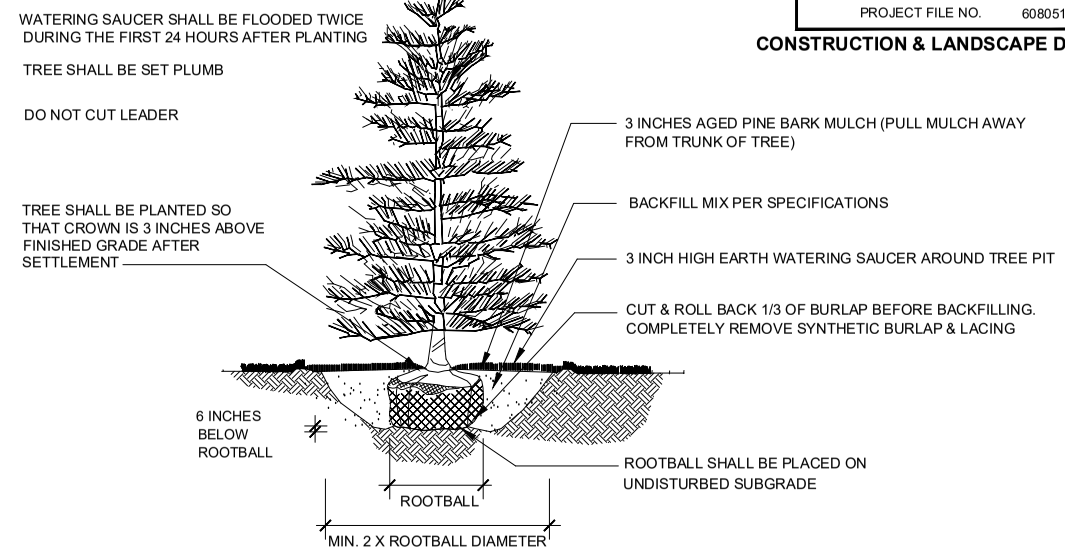
Proposal No. 608051 - 132406

A00831 - 76



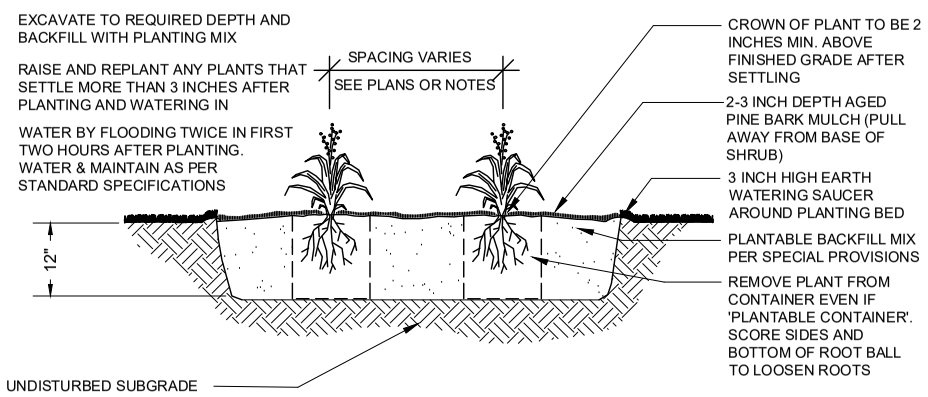

## 1 CONTAINERIZED SHRUB PLANTING (SLOPE) DETAIL

NOT TO SCALE



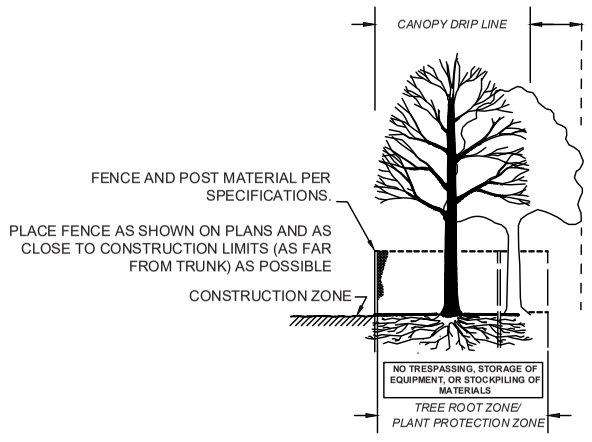

## 2 EVERGREEN TREE PLANTING

NOT TO SCALE

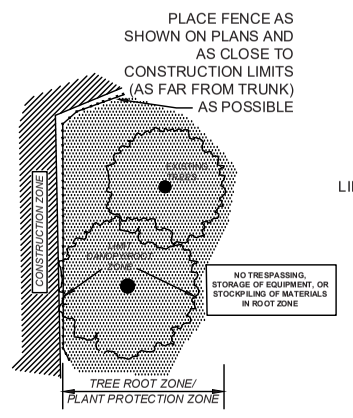



## 3 ORNAMENTAL GRASS PLANTING

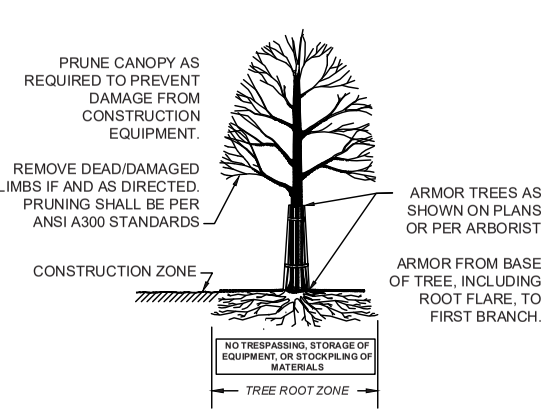
NOT TO SCALE




*SECTION - FENCE PROTECTION OF ROOT ZONE*



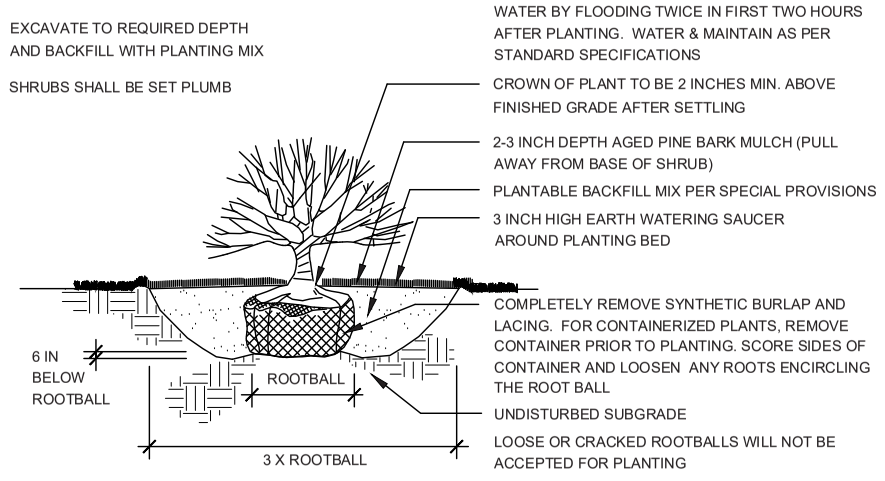

*PLAN VIEW - FENCE PROTECTION OF ROOT ZONE*




*SECTION - TRUNK ARMORING & PRUNING*

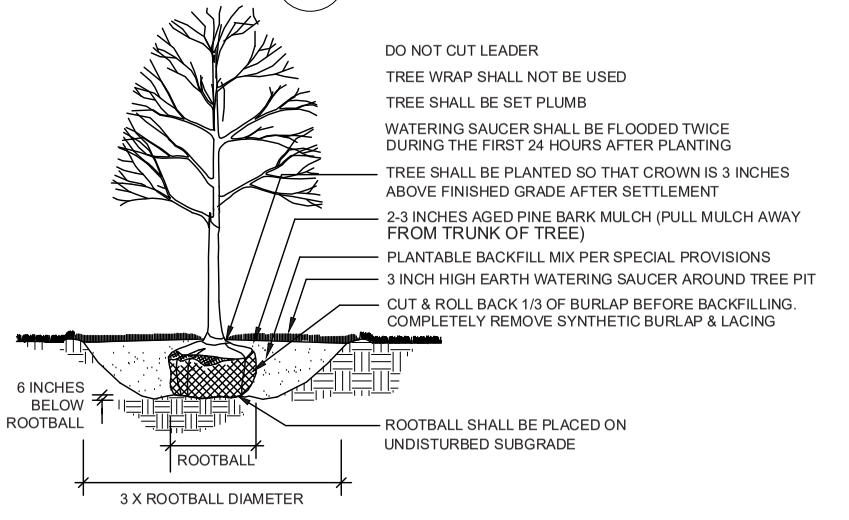
## 4 TREE PROTECTION DETAILS

NOT TO SCALE



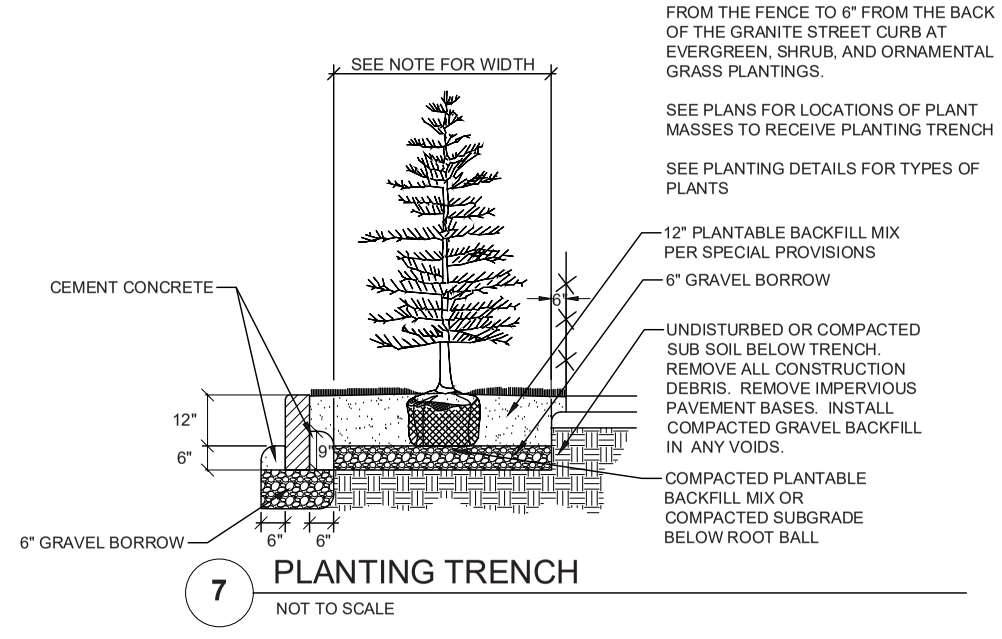

## 5 SHRUB PLANTING

NOT TO SCALE




## 6 TREE PLANTING

NOT TO SCALE



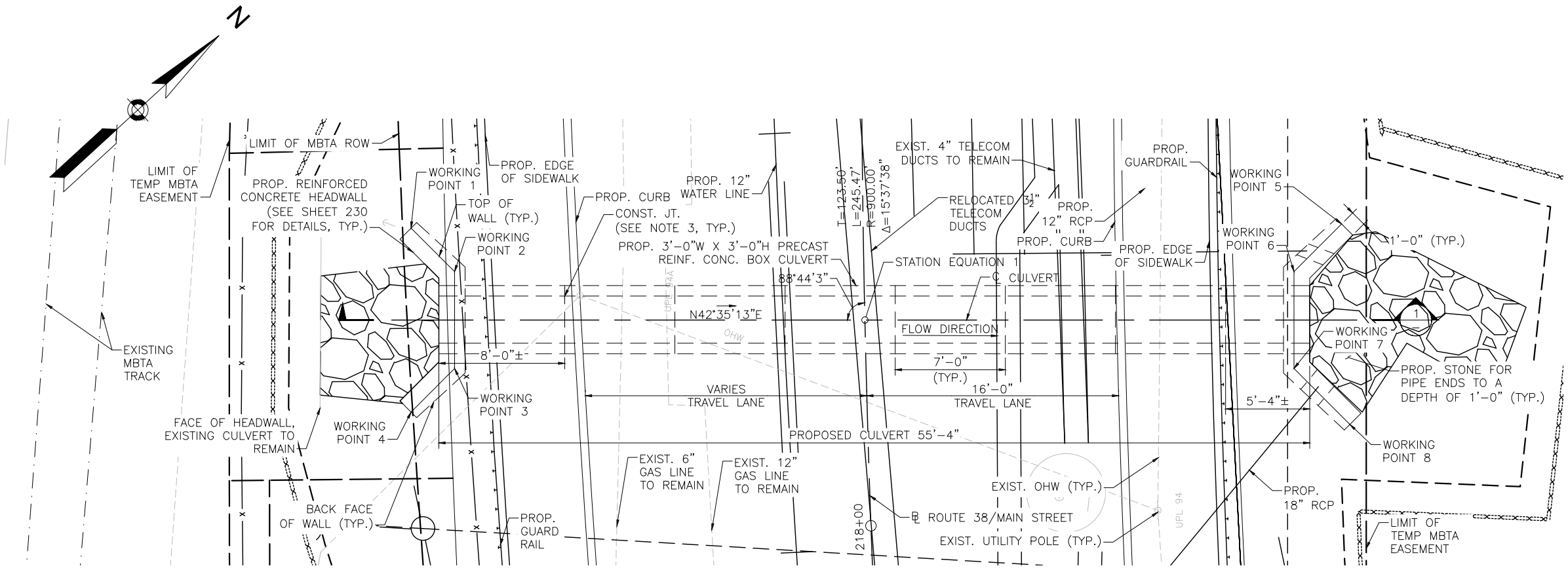

## 7 PLANTING TRENCH

NOT TO SCALE

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 228 | 391 |
| PROJECT FILE NO. | | 608051 | |

**SPECIAL DRAINAGE STRUCTURE NO. 1 PLAN AND ELEVATION**




## SPECIAL DRAINAGE STRUCTURE NO. 1 PLAN

SCALE: $\frac{1}{8}$" = 1'-0"

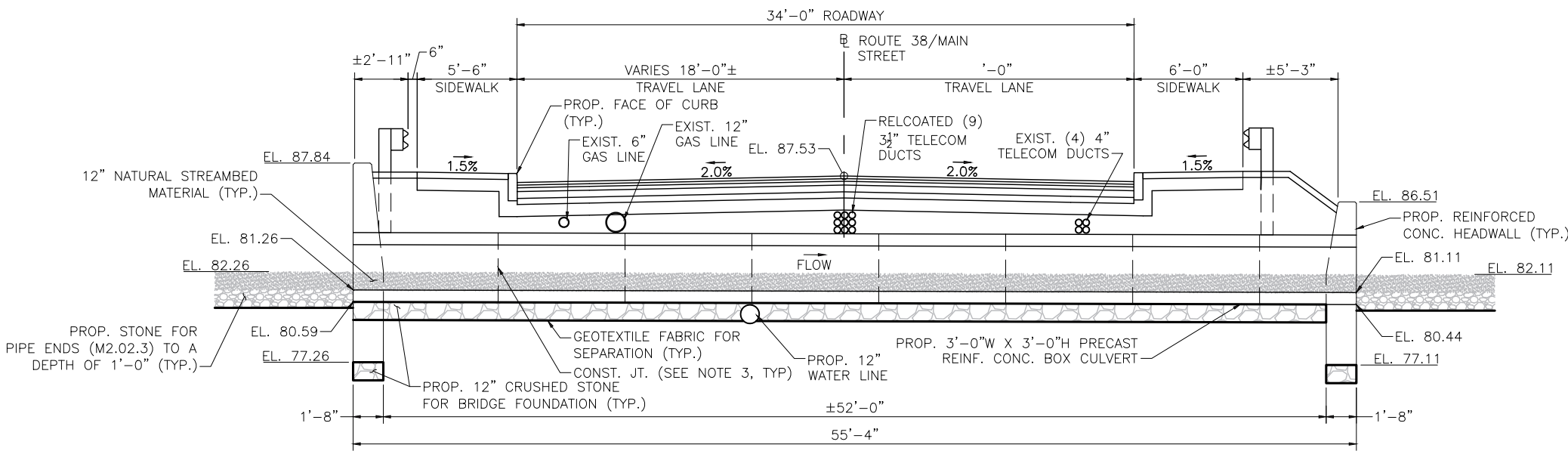
| WORKING POINT | STA. | OFFSET R, FT | NORTHING | EASTING |
|---|---|---|---|---|
| 1 | 217+80.64 | 28.73 | 3023401.55 | 744848.30 |
| 2 | 217+83.36 | 26.01 | 3023401.72 | 744852.21 |
| 3 | 217+89.34 | 26.14 | 3023397.55 | 744856.75 |
| 4 | 217+91.96 | 28.98 | 3023393.64 | 744856.91 |
| 5 | 217+81.28 | −30.41 | 3023445.28 | 744888.13 |
| 6 | 217+84.36 | −27.33 | 3023441.00 | 744888.31 |
| 7 | 217+90.71 | −27.19 | 3023436.83 | 744892.85 |
| 8 | 217+94.48 | −30.64 | 3023437.04 | 744897.87 |

STATION EQUATION 1: RT 38 CONSTRUCTION ℄ STA. 217+86.85 = CULVERT CENTERLINE

4 0 4 8
SCALE IN FEET

NOTES:

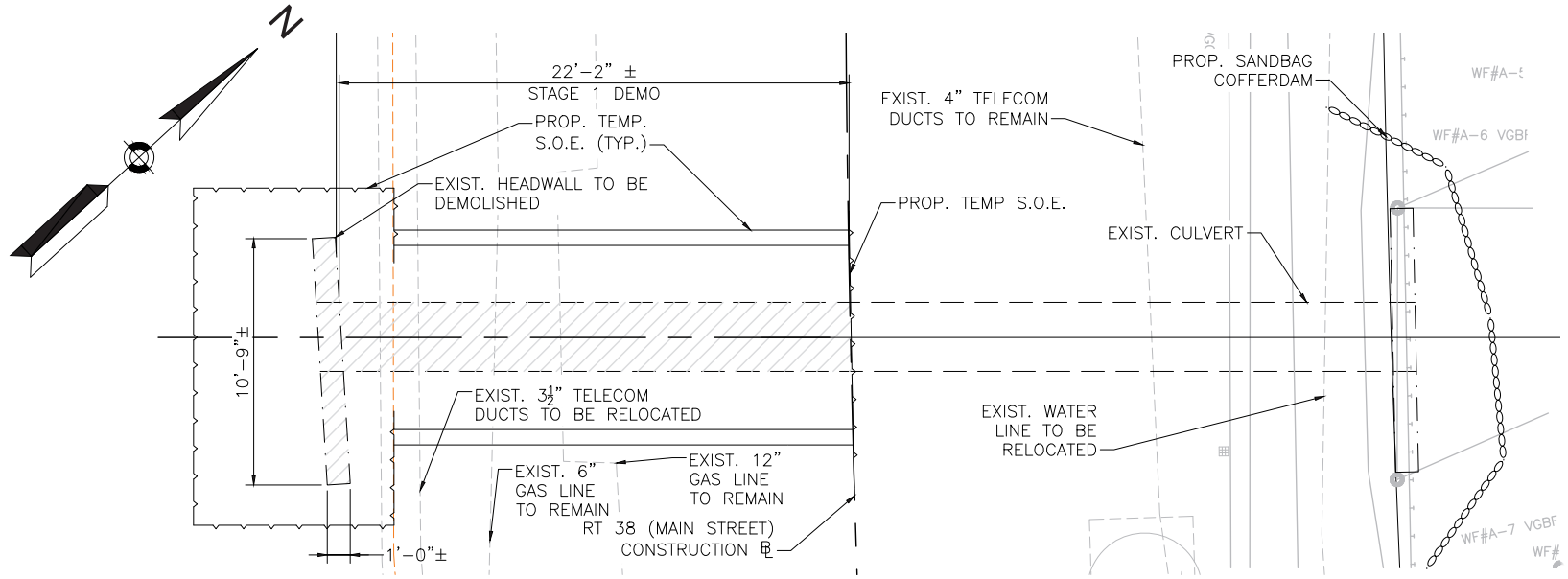
1. GUARDRAIL WILL SPAN OVER PROPOSED CULVERT SECTION.
2. SEE SHEETS 15 – 19 FOR TYPICAL APPROACH/ROADWAY CROSS SECTION AT CULVERT LOCATION.
3. PRECAST REINFORCED CONCRETE CULVERT CONSTRUCTION JOINT SPACING WILL VARY PER PRECASTER UP TO 7'-0" MAXIMUM SPACING.




## SECTION (DOWNSTATION) 1/–

SCALE: $\frac{1}{8}$" = 1'-0"


Plotted on 3-Apr-2025 1:52 PM
6080051_BR01.DWG
Proposal No. 608051 - 132406
A00831 - 77

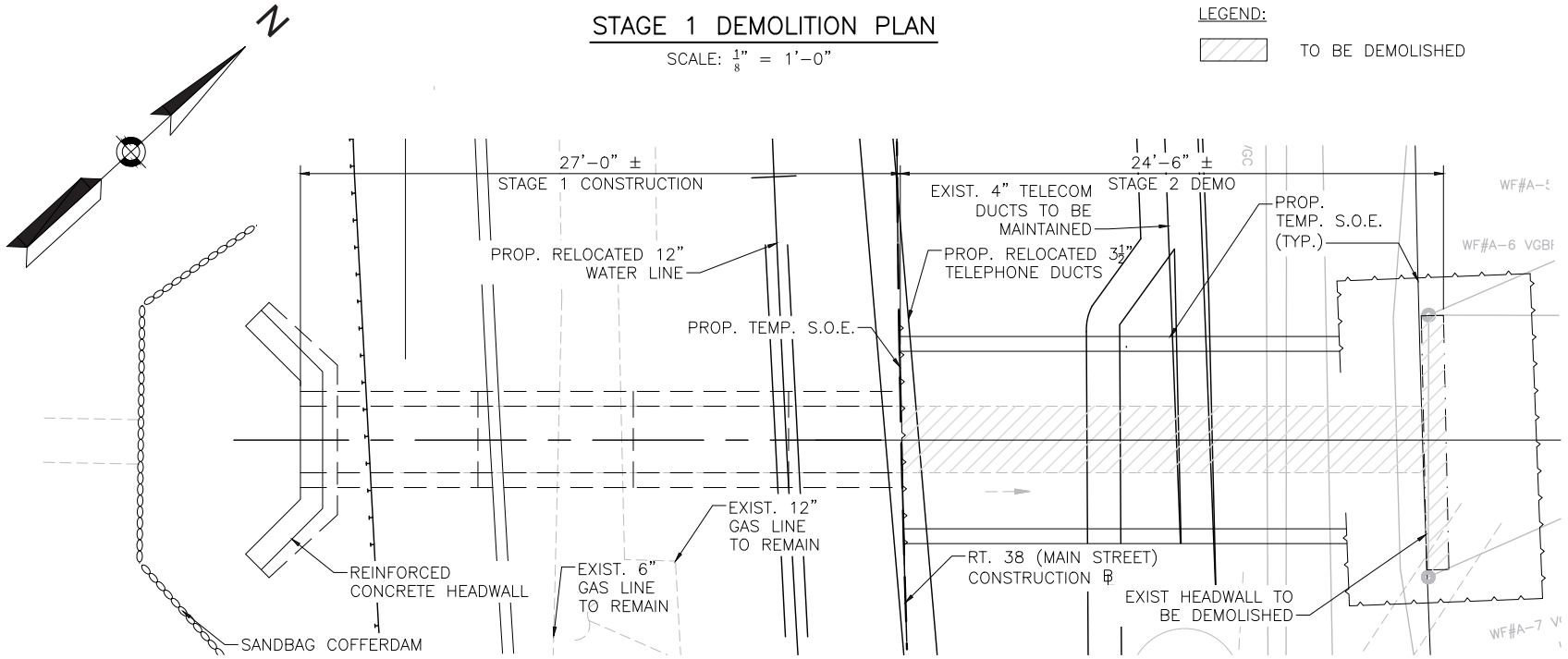



## STAGE 1 DEMOLITION PLAN

SCALE: $\frac{1}{8}$" = 1'-0"

LEGEND:

TO BE DEMOLISHED




## STAGE 1 CONSTRUCTION & STAGE 2 DEMOLITON PLAN

SCALE: $\frac{1}{8}$" = 1'-0"

4 0 4 8

SCALE IN FEET

**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 229 | 391 |
| PROJECT FILE NO. | 608051 | | |

**CULVERT DEMOLITION PLAN**

### GENERAL STAGE CONSTRUCTION NOTES:

1. THE SUPPORT OF EXCAVATION IS DESIGNED AS A TEMPORARY STRUCTURE.
2. SURCHARGES AND STOCKPILES SHALL BE LIMITED TO 250 PSF.
3. LOCATE ALL UTILITIES, EXISTING, AND PROPOSED STRUCTURES PRIOR TO THE START OF WORK.
4. INSTALL SUPPORT OF EXCAVATION (S.O.E.) TO THE REQUIRED DEPTHS AS DESIGNED BY THE CONTRACTOR.
5. UNLESS OTHERWISE NOTED, DETAILS SHOWN ON ANY DRAWING ARE TO BE CONSIDERED TYPICAL FOR ALL SIMILAR CONDITIONS.
6. VERIFY NEARBY STRUCTURES WILL NOT BE AFFECTED BY PROPOSED WORK.

### SUGGESTED SEQUENCE OF CONSTRUCTION:

1. INSTALL SANDBAG COFFERDAM AT THE UPSTREAM END OF CULVERT. INSTALL S.O.E. AROUND LIMITS OF PROPOSED STAGE 1 HEADWALL DEMOLITION.
2. EXCAVATE AND REMOVE EXISTING CULVERT TO STAGE 1 LIMITS SHOWN. PLACE AND MAINTAIN TRENCH BOX TO SUPPORT EXCAVATION FOR STAGE 1 CONSTRUCTION.
3. RELOCATE 12" WATER LINE TO PROPOSED LOCATION
4. CONSTRUCT STAGE 1 PORTION OF PROPOSED CULVERT.
5. REMOVE AND RESET S.O.E./SANDBAG COFFERDAM TO STAGE 2 LOCATIONS. REMOVAL OF SOE MUST NOT RESULT IN SETTLEMENT OF ANY PROPOSED WORK.
6. EXCAVATE AND REMOVE EXISTING CULVERT TOP STAGE 2 LIMITS SHOWN. PLACE AND MAINTAIN TRENCH BOX TO SUPPORT EXCAVATION FOR STAGE 2 CONSTRUCTION.
7. CONSTRUCT STAGE 2 PORTION OF PROPOSED CULVERT.




## STAGE CONSTRUCTION SECTION

SCALE: $\frac{3}{8}$" = 1'-0"

1'-4" 0 1'-4" 2'-8"

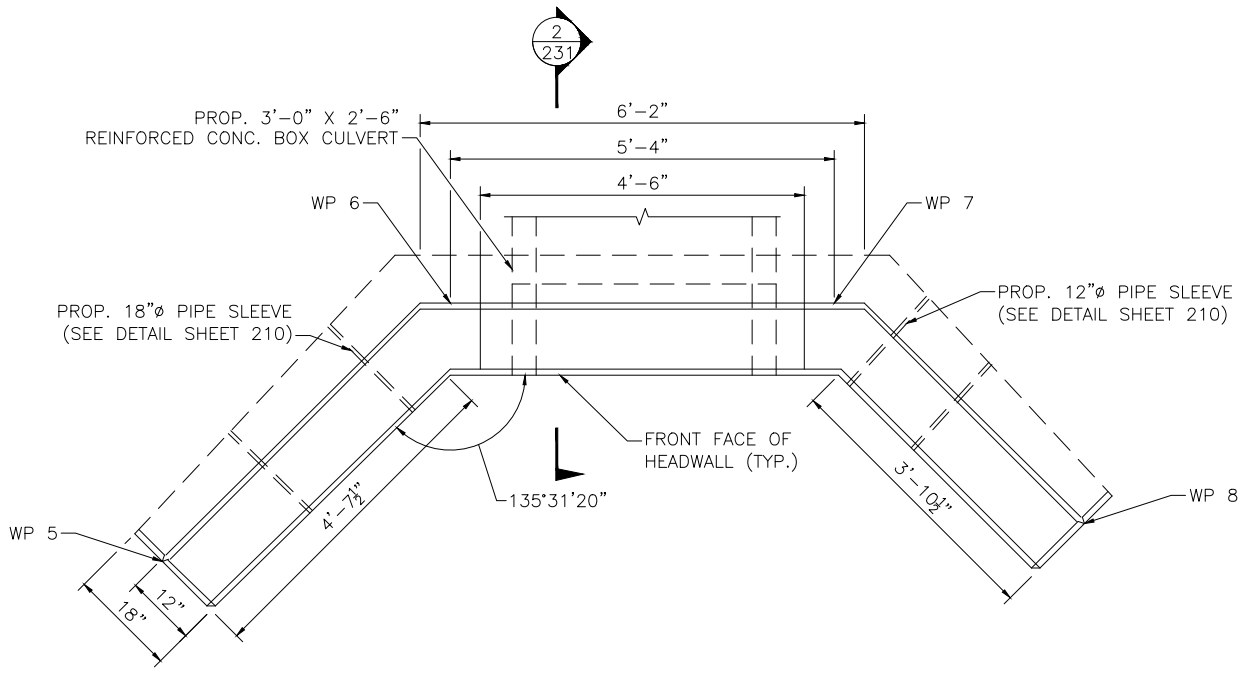
SCALE IN FEET

Plotted on 12-Mar-2025 3:33 PM
6080051_BR03_RECOVER.DWG
Proposal No. 608051 - 132406
A00831 - 78

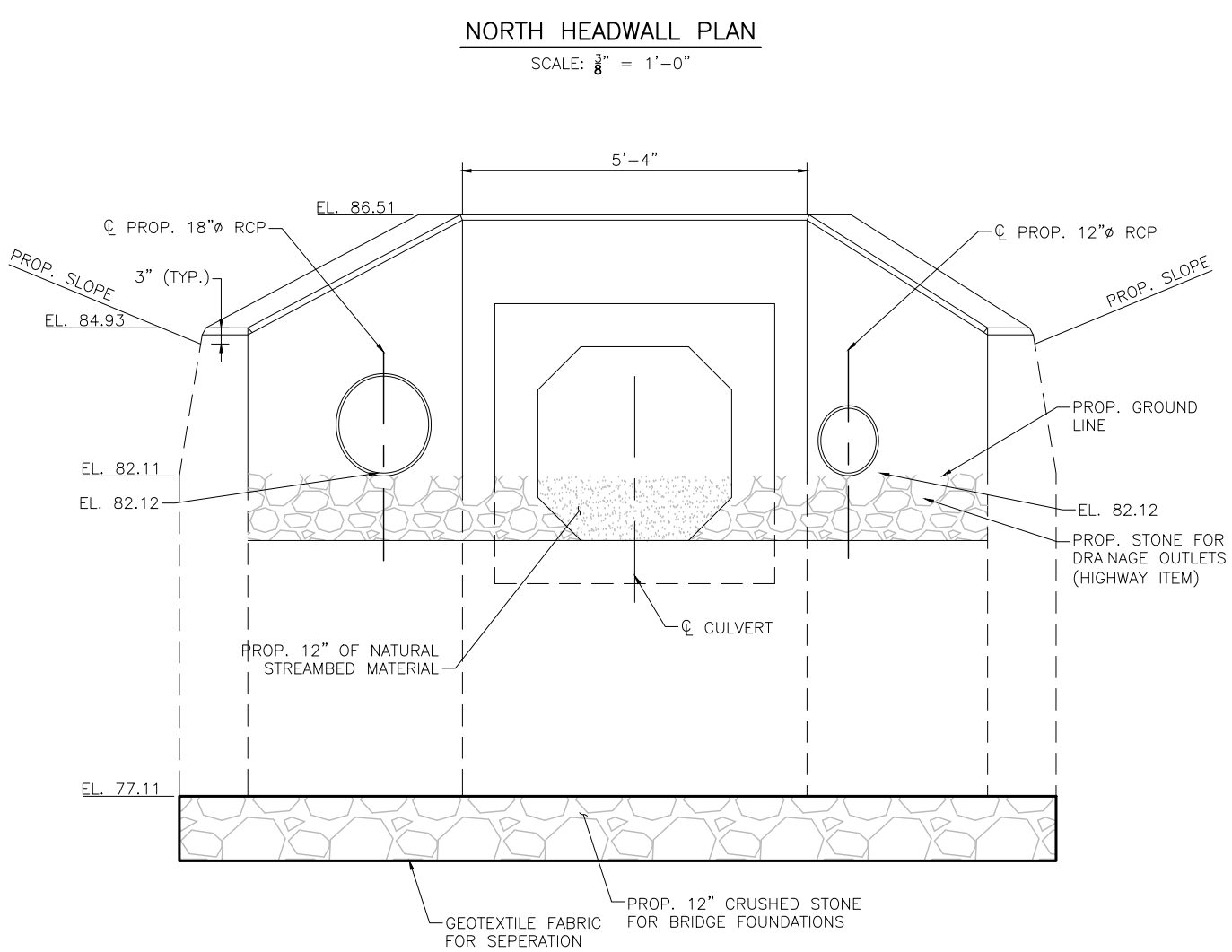
**WILMINGTON**
**ROUTE 38 (MAIN STREET)**

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 230 | 391 |
| PROJECT FILE NO. | 608051 | | |

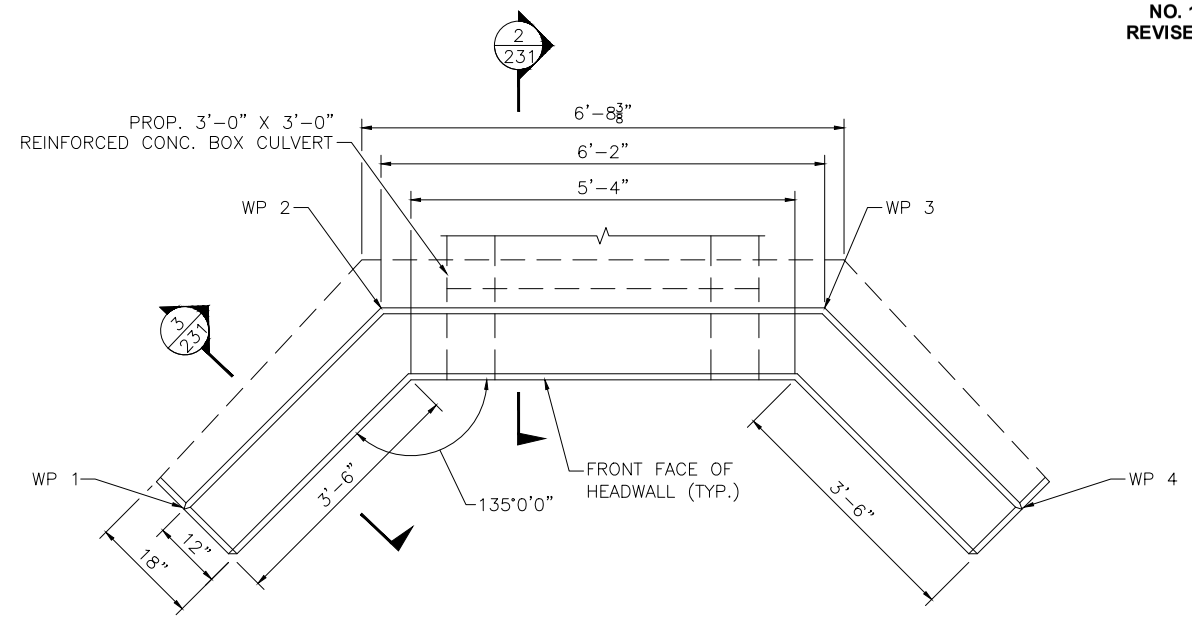
**SPECIAL DRAINAGE STRUCTURE NO. 1 DETAILS**
**REVISED 04/23/2025**



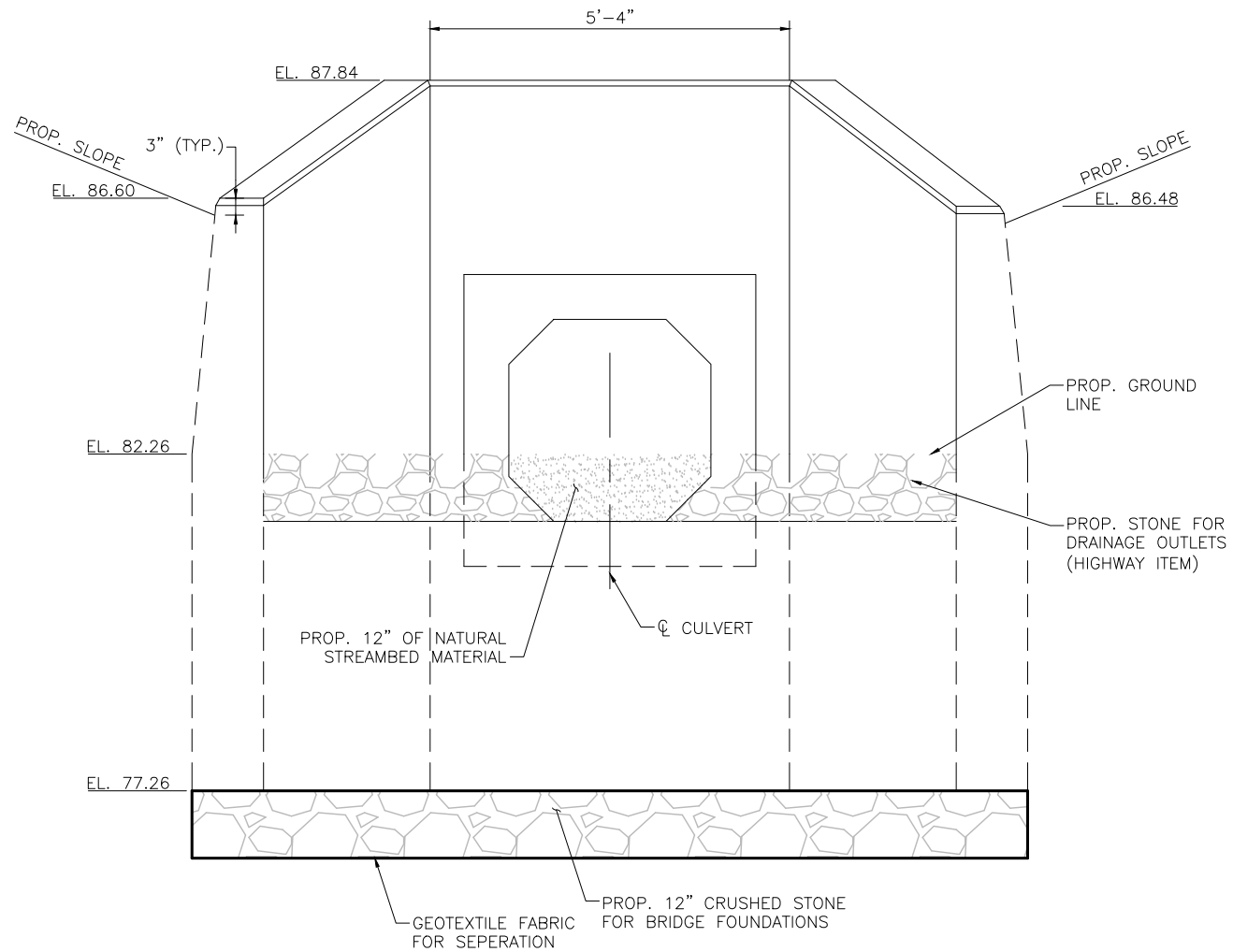

NORTH HEADWALL PLAN
SCALE: $\frac{3}{8}$" = 1'-0"




NORTH HEADWALL ELEVATION
SCALE: $\frac{3}{8}$" = 1'-0"




SOUTH HEADWALL PLAN
SCALE: $\frac{3}{8}$" = 1'-0"



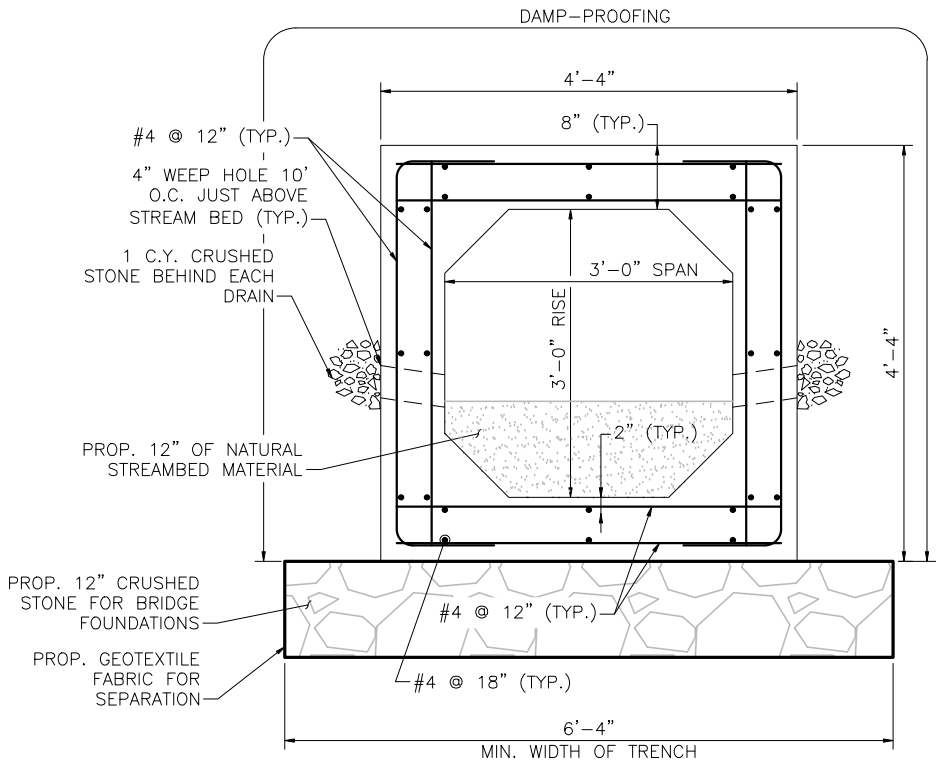

SOUTH HEADWALL ELEVATION
SCALE: $\frac{3}{8}$" = 1'-0"



A00831 - 79
Proposal No. 608051 - 132406
6080051_BR02.DWG Plotted on 23-Apr-2025 5:26 PM

| STATE | FED. AID PROJ. NO. | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|
| MA | - | 210 | 391 |
| PROJECT FILE NO. | | 608051 | |

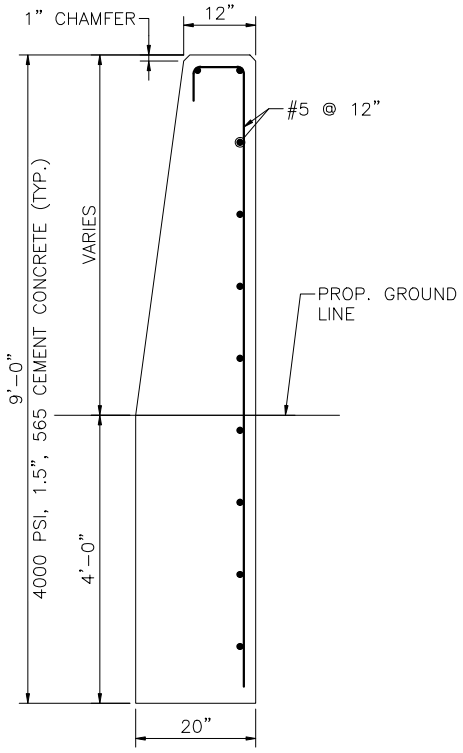
# SPECIAL DRAINAGE STRUCTURE NO. 1 DETAILS
REVISED 4/23/2025



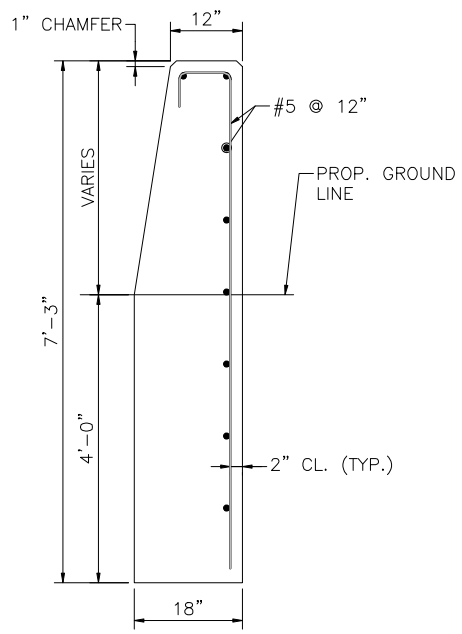

NOTES:
1. THE MAXIMUM FACTORED BEARING PRESSURE IS 2.02 KSF AS PER AASHTO LRFD BRIDGE SPECIFICATION STRENGTH 1 LOAD COMBINATION. FACTORED BEARING RESISTANCE IS 9.3 KSF. FACTORED BEARING RESISTANCE IS THE PRODUCT OF THE NOMINAL BEARING RESISTANCE OF 20.7 AND A RESISTANCE FACTOR OF 0.45.
2. REFER TO GEOTECHNICAL REPORT, DATED OCTOBER 2020, PREPARED BY LAMSON ENGINEERING CORPORATION.
3. TRANSVERSE REINFORCING SHALL BE PLACED NORMAL TO THE ℄ OF THE CULVERT.
4. PRECAST CONCRETE CULVERT TO BE 5000 PSI, ¾ INCH, 686 HP CEMENT CONCRETE.

## CULVERT REINFORCEMENT
SCALE: 1" = 2'-0"

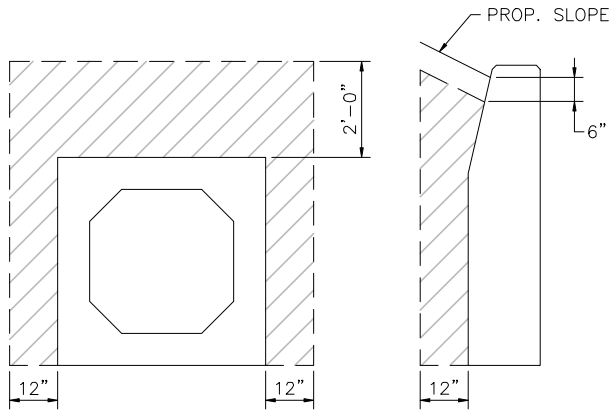
1 0 1 2
SCALE IN FEET




SECTION 2
SCALE: ⅜" = 1'-0"

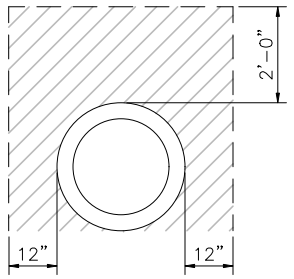



SECTION 3
SCALE: ⅜" = 1'-0"



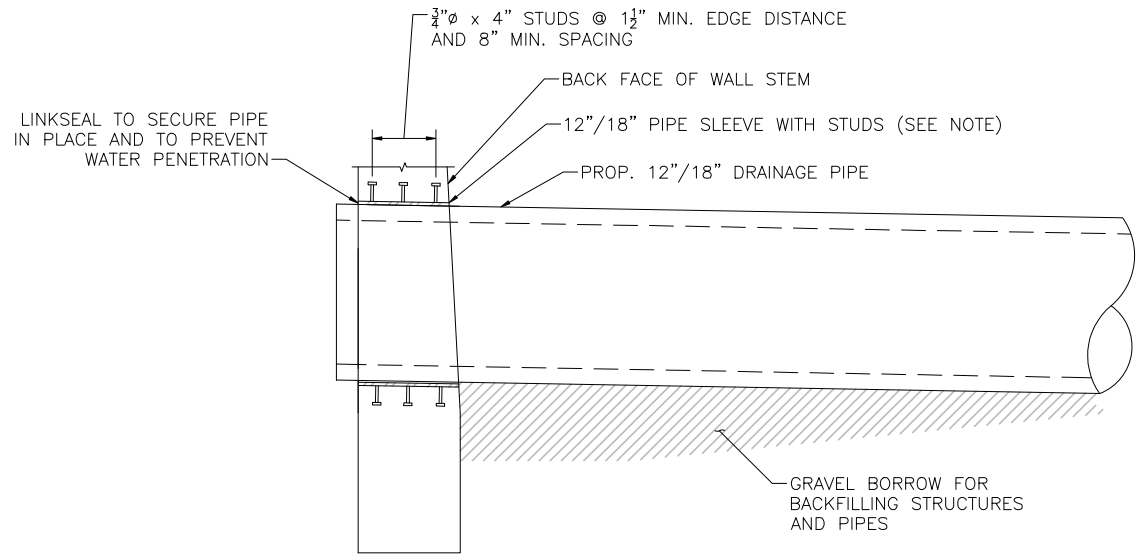

NOTE:
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES

## LIMITS OF GRAVEL BORROW FOR BACK FILLING STRUCTURES AND PIPES
SCALE: ¼" = 1'-0"



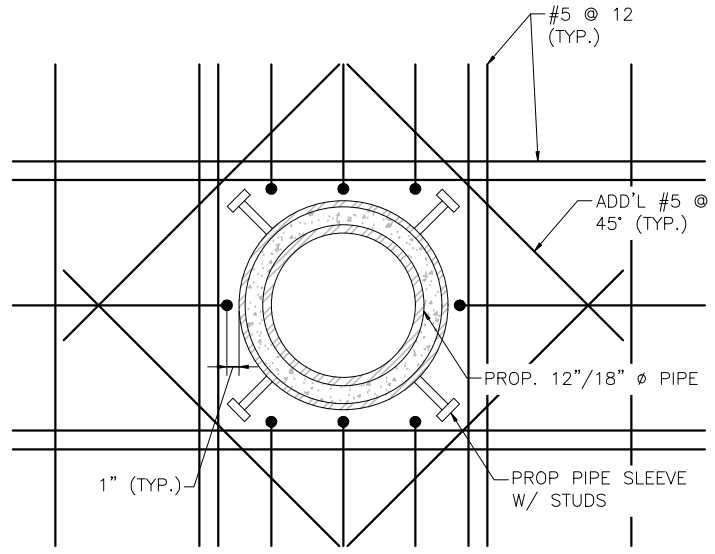

NOTE:
HATCHED AREA INDICATES LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES.

## LIMITS OF GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES
NOT TO SCALE




NOTE:
FOR CULVERT INVERT AND WALL ELEVATIONS, SEE SHEET 209.

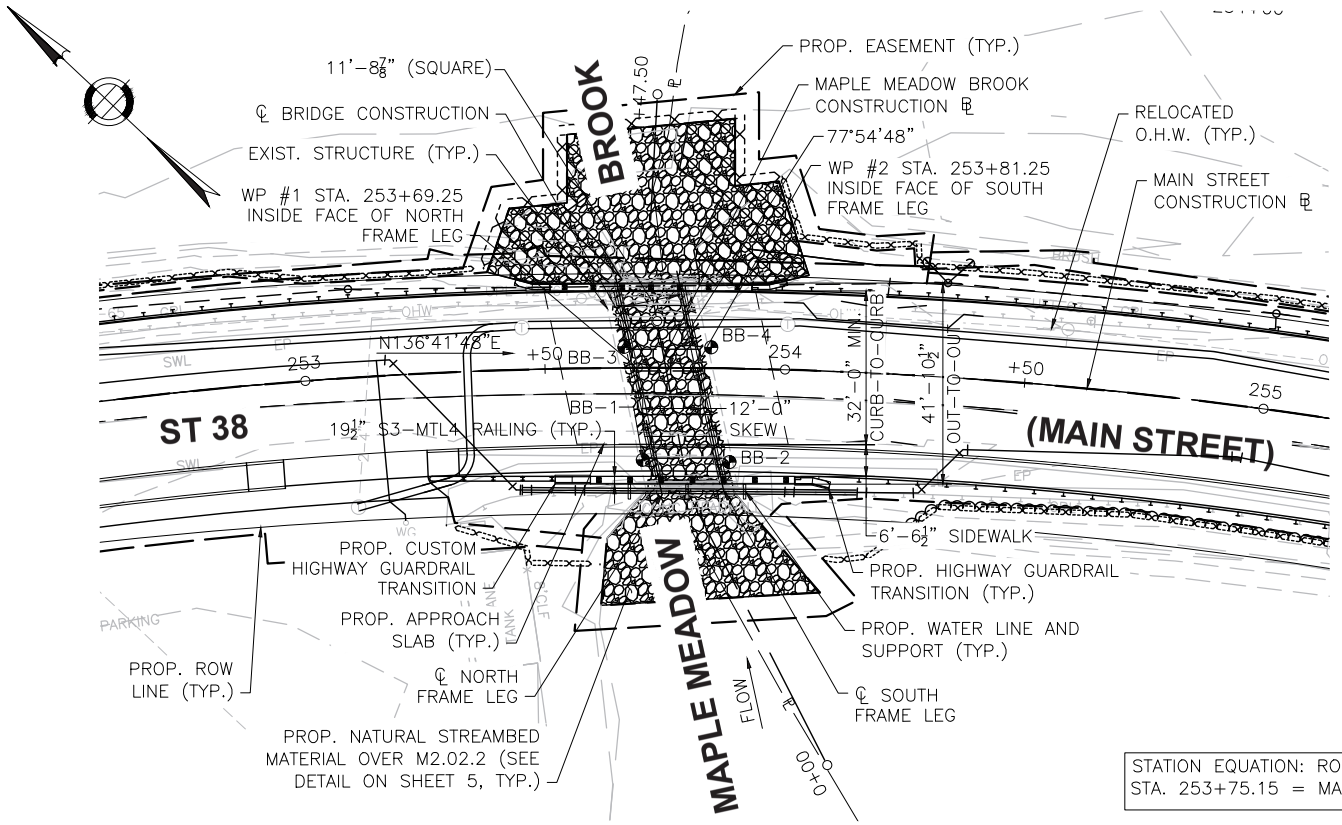
## TYPICAL CULVERT WALL PENETRATION DETAIL
SCALE: ¼" = 1'-0"




## PIPE OPENING DETAIL
SCALE: ¾" = 1'-0"

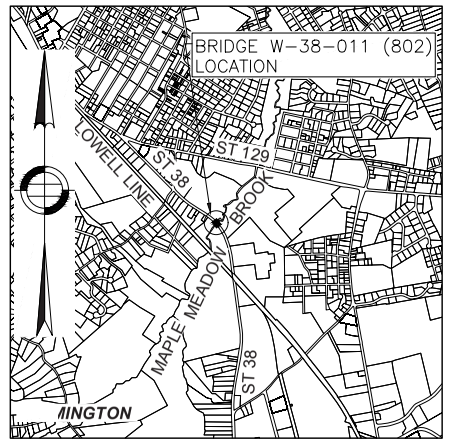


A00831 - 80
Proposal No. 608051 - 132406
6080051_BR04.DWG Plotted on 23-Apr-2025 9:44 AM




KEY PLAN

SCALE: 1" = 40'




LOCUS

SCALE: 1" = 4000'

STATION EQUATION: ROUTE 38 (MAIN STREET) CONSTRUCTION ℄ STA. 253+75.15 = MAPLE MEADOW BROOK ℄ STA. 00+90.15

DESIGN:
IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020, FOR HL–93 LOADING.

NOTES:
1. APPROVAL DOES NOT INCLUDE STRUCTURAL ANALYSIS.
2. DIMENSIONS OF STRUCTURAL MEMBERS ARE APPROXIMATE AND WILL BE FINALIZED DURING FINAL DESIGN PHASE.
3. SEE GEOTECHNICAL REPORT, DATED XXX.
4. SEE HYDRAULIC REPORT, DATED XXX.
5. NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988 IS USED THROUGHOUT.

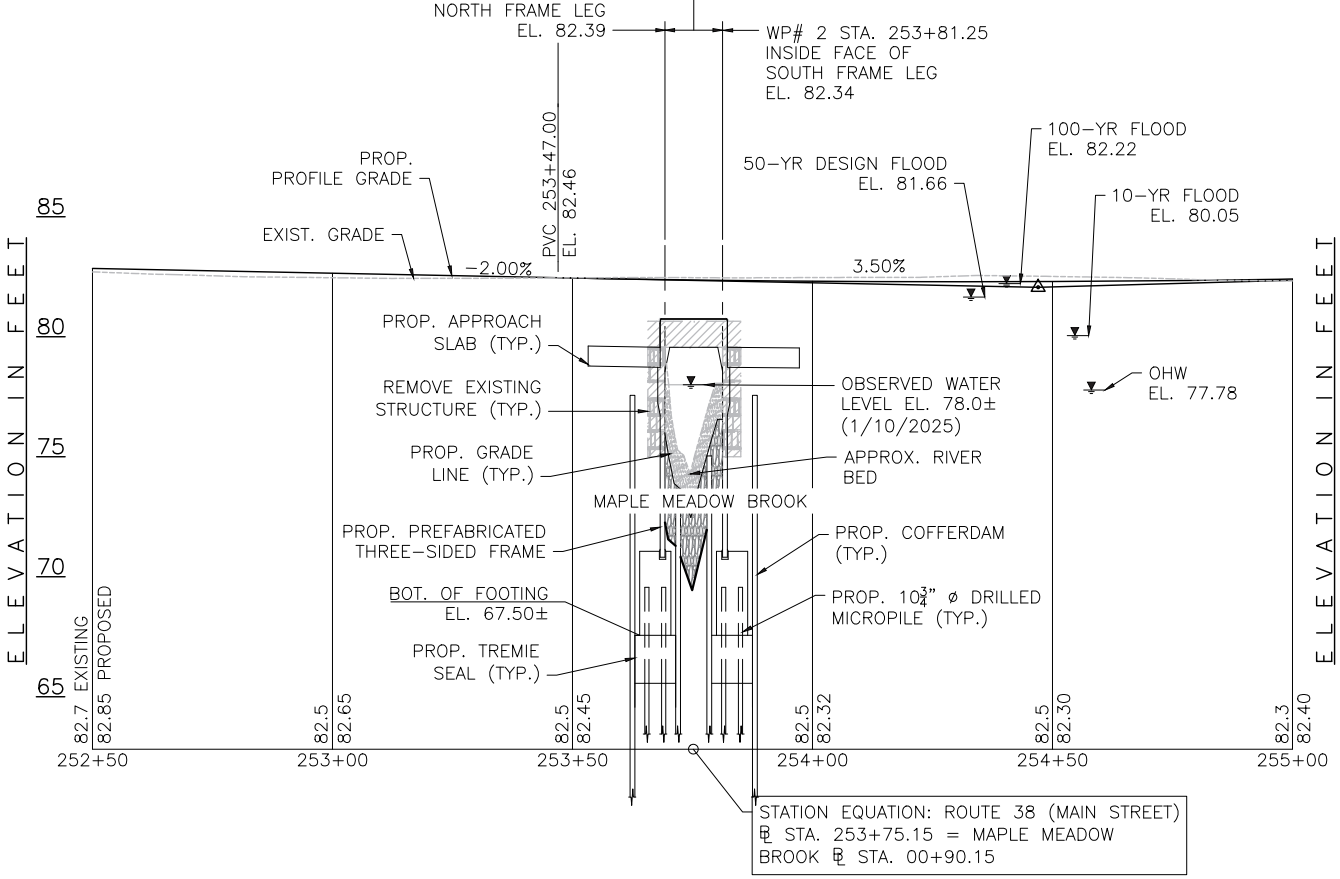
| PROJECT INFORMATION |
|---|
| PROJECT FILE NO.: 608051 |
| PROJECT DESCRIPTION: PROPOSED BRIDGE |
| BRIDGE DESIGN LOADING: HL–93 |
| SURVEY: ELECTRONIC SURVEY BY GREEN INTL. |
| ELEVATION REFERENCE: NAVD OF 1988 |
| BENCH MARK: MAG SET 2' ABOVE GRADE, UP #12–64<br>EL. 85.16'<br>STA. 253+57.81 – 13.77'LT<br>N 3021141.89<br>E 747603.14 |

| TEMPORARY WATER CONTROL DESIGN DATA | |
|---|---|
| DESIGN FLOOD DISCHARGE (C.F.S.) | 4011 |
| DESIGN FLOOD FREQUENCY (YEARS) | 2 |
| DESIGN FLOOD VELOCITY (F.P.S.) | 5.12 |
| DESIGN FLOOD ELEVATION (FEET, NAVD) | 689.36 |

| TRAFFIC DATA | ROADWAY OVER | ROADWAY UNDER |
|---|---|---|
| DESIGN YEAR | 2041 | |
| AVERAGE DAILY TRAFFIC – PRESENT | 3,472 | |
| AVERAGE DAILY TRAFFIC – DESIGN YEAR | 4,236 | |
| DESIGN HOURLY VOLUME | 15.5% | |
| DIRECTIONAL DISTRIBUTION | 53.0% | |
| TRUCK PERCENTAGE – AVERAGE DAY | 6.4% | |
| TRUCK PERCENTAGE – PEAK HOUR | 4.0% | |
| DESIGN SPEED | 25MPH | |
| DIRECTIONAL DESIGN HOURLY VOLUME | 350 | |

| SEISMIC DESIGN CRITERIA | |
|---|---|
| DESIGN RETURN PERIOD: | 1,000 |
| **DESIGN SPECTRA** | |
| As | 0.150g |
| SDs | 0.325g |
| SD1 | 0.130g |
| SITE CLASS | E |
| SEISMIC DESIGN CATEGORY (SDC) | A |

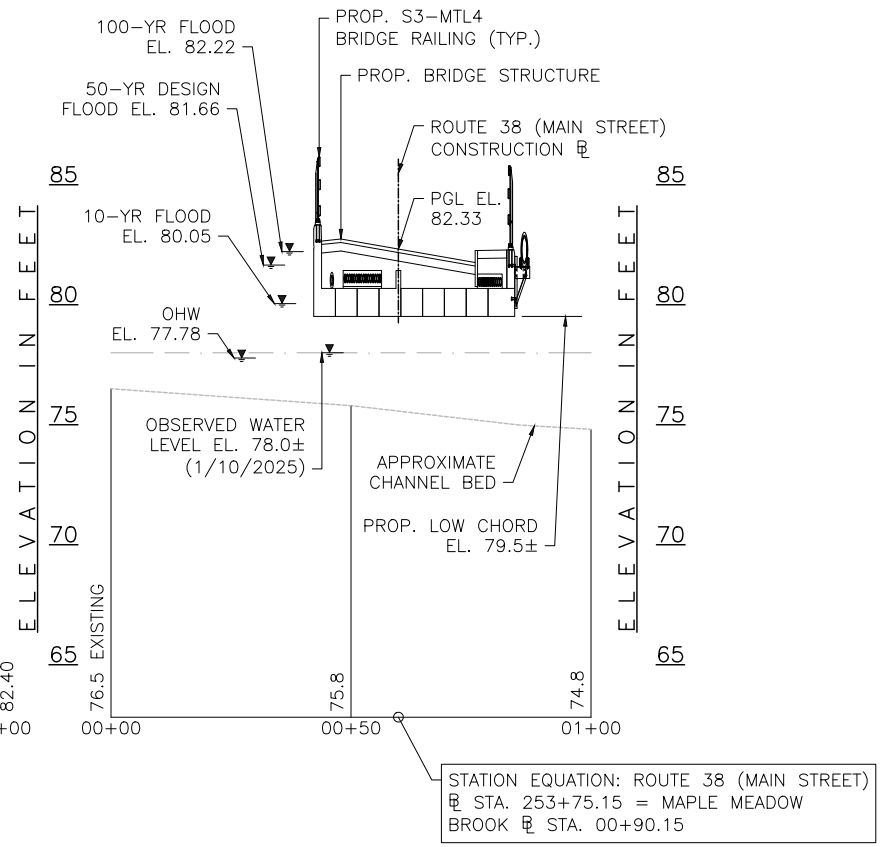
| HYDRAULIC DESIGN FLOOD (HDF) DATA | |
|---|---|
| DRAINAGE AREA (SQ. MILES) | N/A |
| HDF DISCHARGE (C.F.S.) | N/A |
| HDF FREQUENCY (YEARS) | 10 |
| HDF VELOCITY (F.P.S.) | N/A |
| HDF ELEVATION (FEET, NAVD, UPSTREAM) | 691.41 |
| **BASE (100–YEAR) FLOOD DATA** | |
| BASE FLOOD DISCHARGE (C.F.S.) | N/A |
| BASE FLOOD ELEVATION (FEET, NAVD, UPSTREAM) | 693.93 |
| **SCOUR DESIGN FLOOD (SDF) EVENT DATA** | |
| SDF EVENT FREQUENCY (YEARS) | 25 |
| SDF ELEVATION (FEET, NAVD, UNDER BRIDGE) | N/A |
| SDF TOTAL SCOUR DEPTH AT ABUTMENT (FEET) | 5.83 |
| SDF TOTAL SCOUR DEPTH AT PIERS (FEET) | N/A |
| **SCOUR CHECK FLOOD (SCF) EVENT DATA** | |
| SCF EVENT FREQUENCY (YEARS) | 50 |
| SCF ELEVATION (FEET, NAVD, UNDER BRIDGE) | N/A |
| SCF TOTAL SCOUR DEPTH AT ABUTMENT (FEET) | 6.59 |
| SCF TOTAL SCOUR DEPTH AT PIERS (FEET) | N/A |
| **FLOOD OF RECORD** | |
| DISCHARGE (C.F.S.) | N/A |
| FREQUENCY (IF KNOWN, YEARS) | N/A |
| MAXIMUM ELEVATION (FEET, NAVD) | N/A |
| DATE (MM/YYYY) | N/A |
| HISTORY OF ICE FLOES | N/A |
| EVIDENCE OF SCOUR AND EROSION | N/A |




PROFILE – ST 38 (MAIN STREET)

HORIZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 8'

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET




PROFILE – MAPLE MEADOW BROOK

HORIZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 8'


GREEN INTERNATIONAL AFFILIATES, INC.
100 AMES POND DRIVE, SUITE 200
TEWKSBURY, MA 01876


massDOT Highway Division

SKETCH PLANS OF
PROPOSED BRIDGE
**WILMINGTON**
ST 38 (MAIN STREET)
OVER MAPLE MEADOW BROOK

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

APPROVED BY DATE

STRUCTURAL ELEMENTS: _____ _____
TITLE:

HIGHWAY ELEMENTS: _____ _____
TITLE:

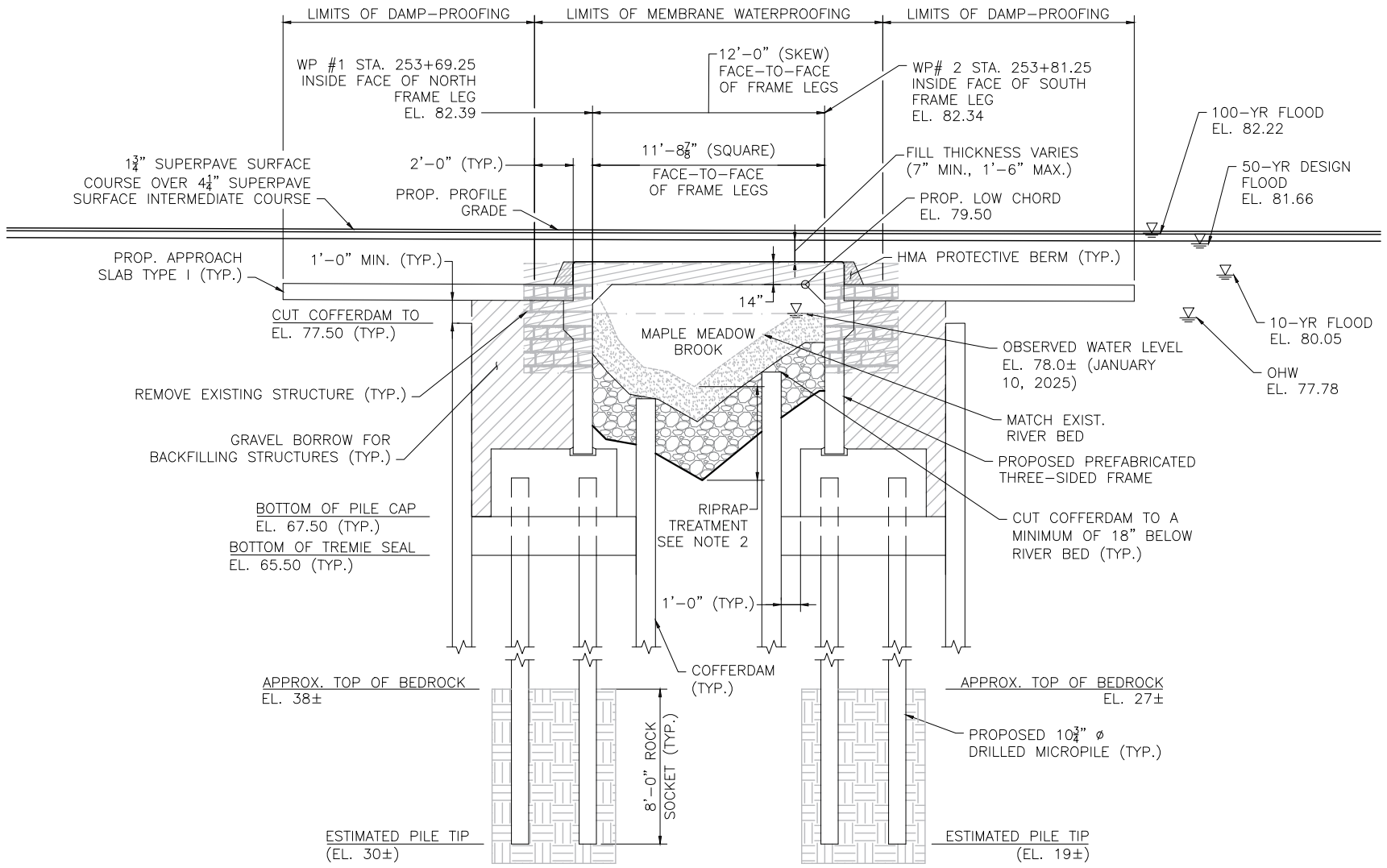



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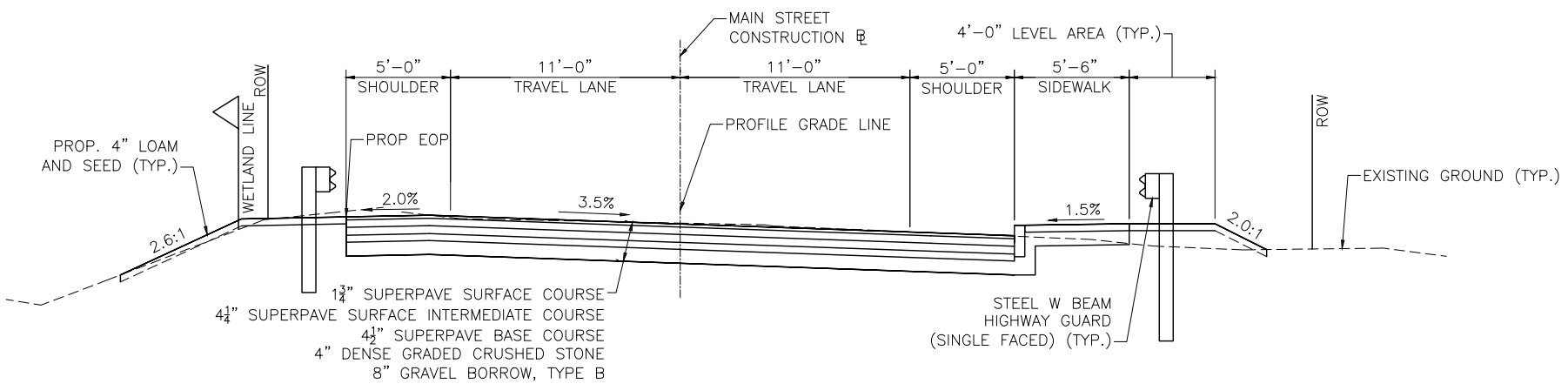
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NOTES:
1. ALL HORIZONTAL DIMENSIONS PROVIDED FOR ROADWAY UNDER STRUCTURE ARE SQUARE.
2. 2'-6" DUMPED RIPRAP (M2.02.2) OVER GEOTEXTILE FABRIC. 1'-6" THICK LAYER OF NATURAL STREAMBED MATERIAL TO MATCH EXISTING STREAMBED ELEVATIONS.

## TYPICAL LONGITUDINAL SECTION

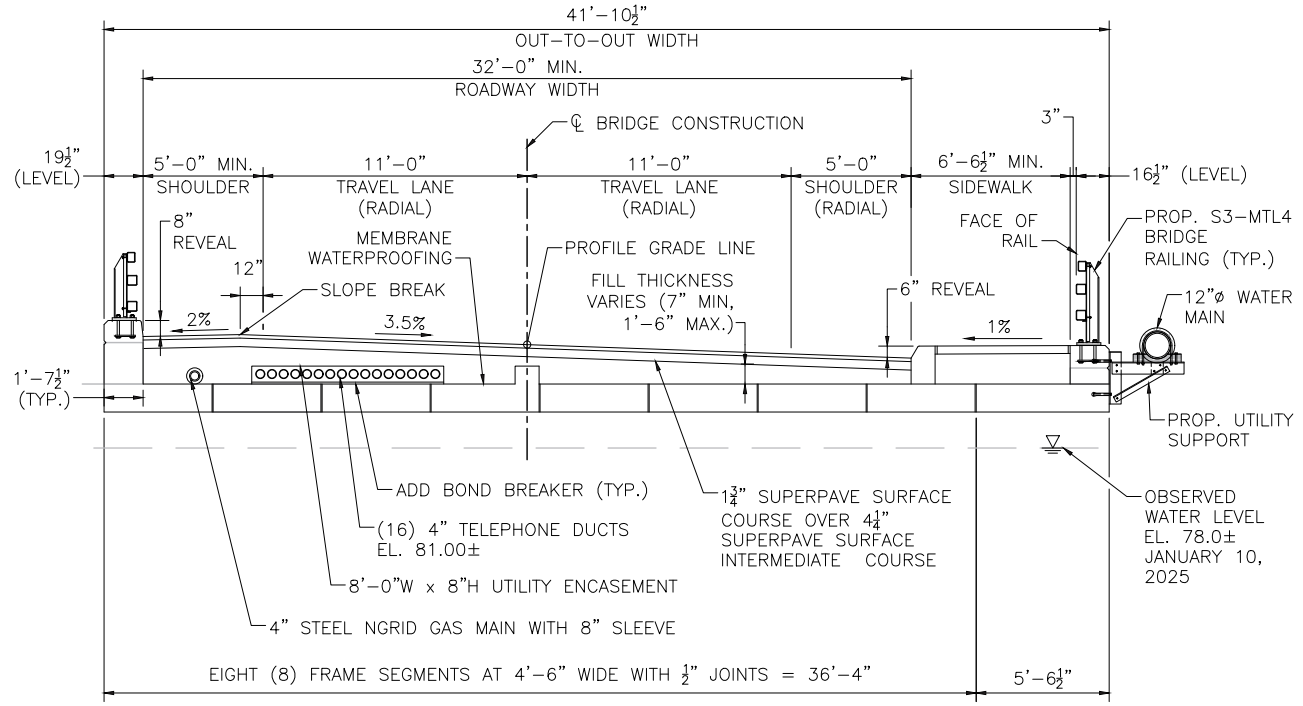
SCALE: ⅛" = 1'-0"




## TYPICAL APPROACH SECTION

SCALE: ⅛" = 1'-0"

4 0 4 8
SCALE IN FEET




## TYPICAL BRIDGE SECTION

SCALE: ⅛" = 1'-0"

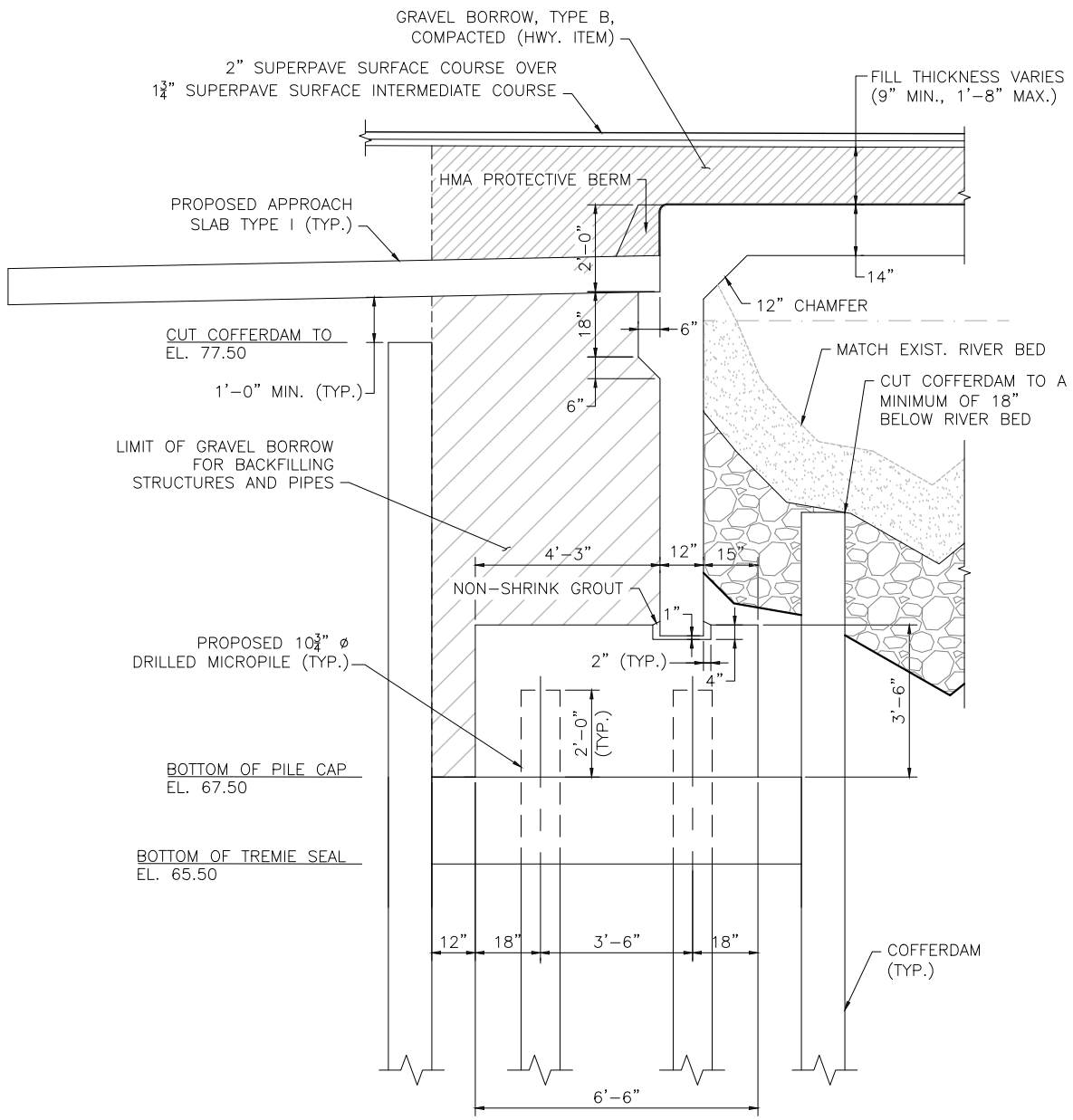
### GENERAL NOTES:

1. DIMENSIONS SHOWN INDICATE PRELIMINARY DESIGN DIMENSIONS. CONTRACTOR TO DETERMINE FINAL DIMENSIONS BASED UPON THEIR APPROVED DESIGN.
2. PAVEMENT SHALL CONSIST OF 1¾" SUPERPAVE SURFACE COURSE OVER 4¼" SUPERPAVE SURFACE INTERMEDIATE COURSE.

### PILE NOTES:

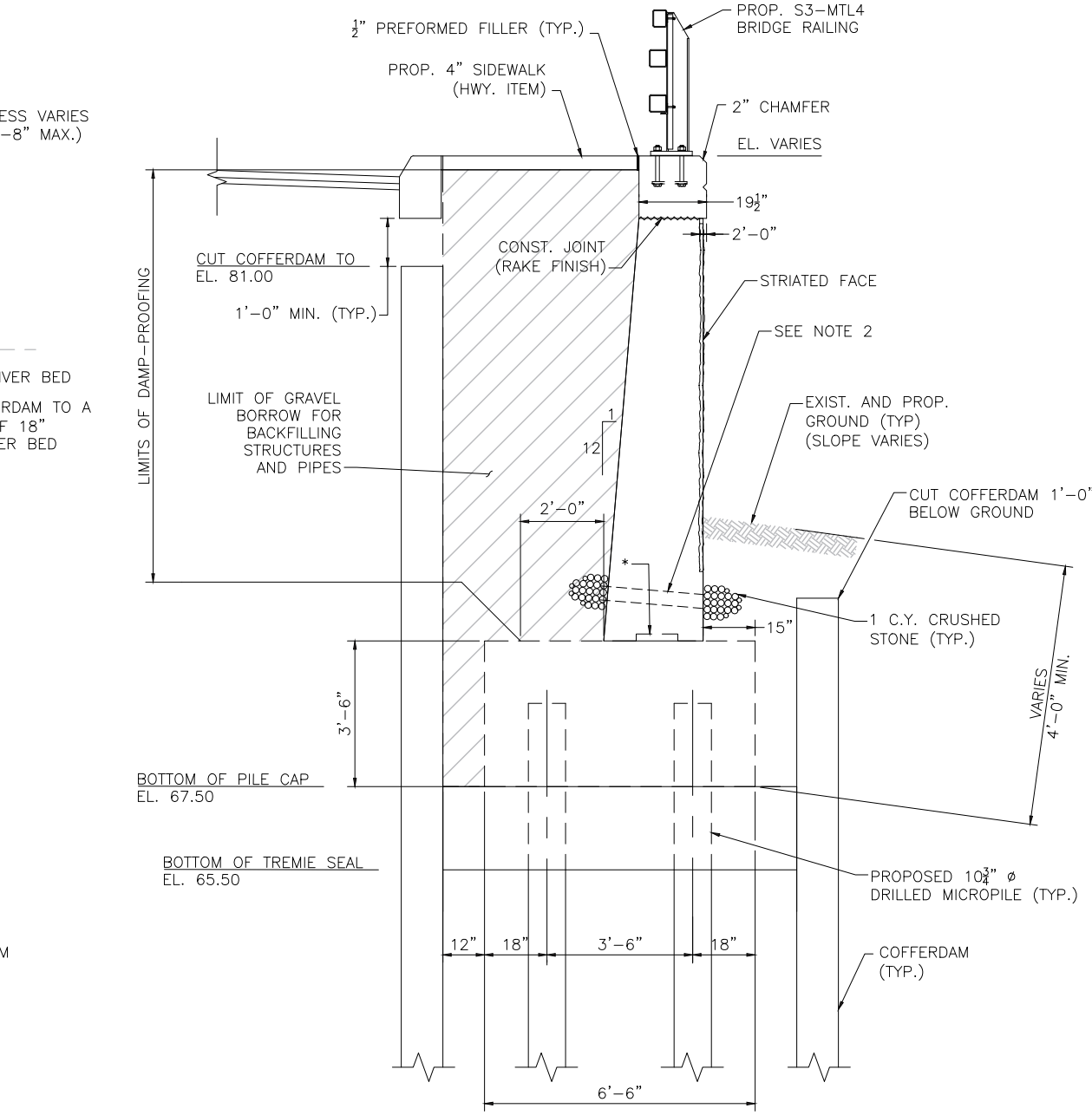
3. FACTORED AXIAL DESIGN LOAD PER MICROPILE PER AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS
   - STRENGTH I LIMIT STATE
     FACTORED AXIAL DESIGN LOAD = XXX.X KIPS.
4. THE FACTORED STRUCTURAL PILE RESISTANCE IS XXX.X KIPS AND IS THE PRODUCT OF THE NOMINAL STRUCTURAL RESISTANCE OF XXX.X KIPS AND A RESISTANCE FACTOR OF 0.XX.
5. THE FACTORED GEOTECHNICAL PILE RESISTANCE IS XXX.X KIPS AND IS THE PRODUCT OF THE NOMINAL GEOTECHNICAL RESISTANCE OF XXX.X KIPS AND A RESISTANCE FACTOR OF 0.XX.
6. THE ESTIMATED PILE TIP ELEVATION VARIES (EL. XX.XX TO XX.XX FEET AT NORTH FOOTING AND EL. XX.XX TO XX.XX FEET AT SOUTH FOOTING).

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## TYPICAL ABUTMENT SECTION

SCALE: 1/4" = 1'-0"

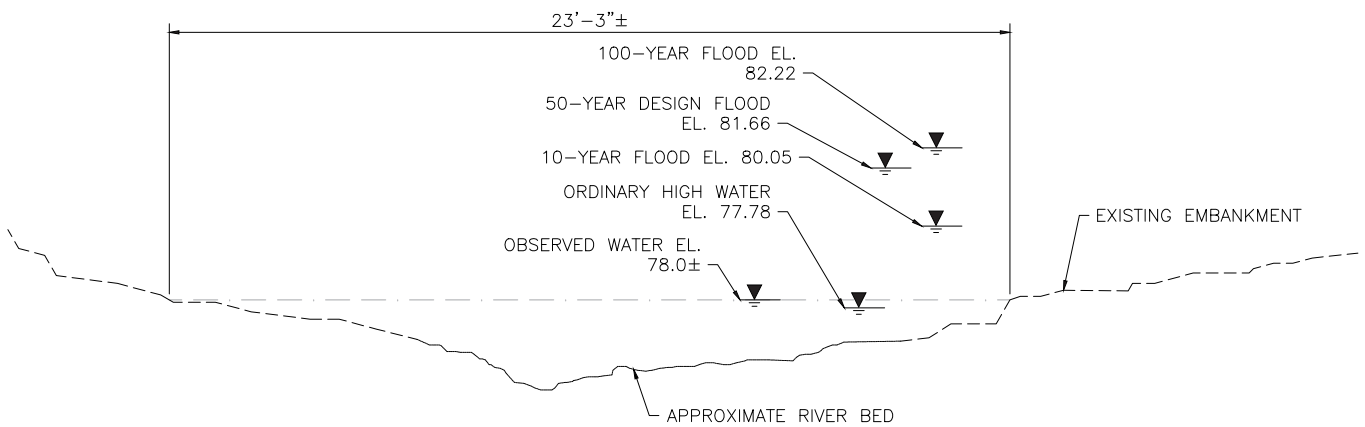



## TYPICAL WINGWALL SECTION

SCALE: 1/4" = 1'-0"

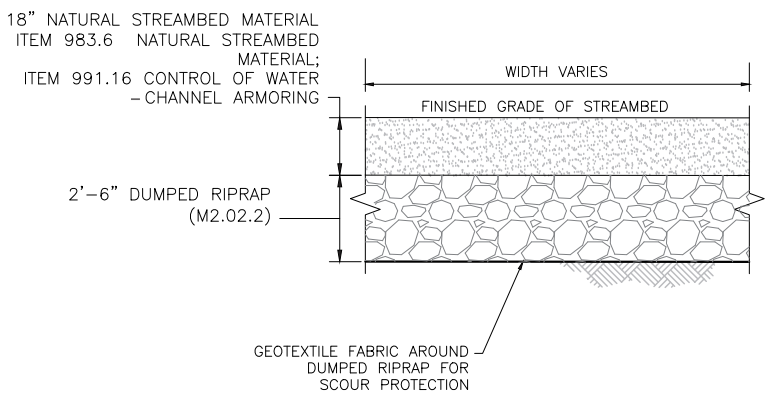
2 0 2 4

SCALE IN FEET




## TYPICAL CHANNEL SECTION

SCALE: 3/16" = 1'-0"




## CHANNEL ARMORING DETAIL

NOT TO SCALE

2'-8" 0 2'-8" 5'-4"

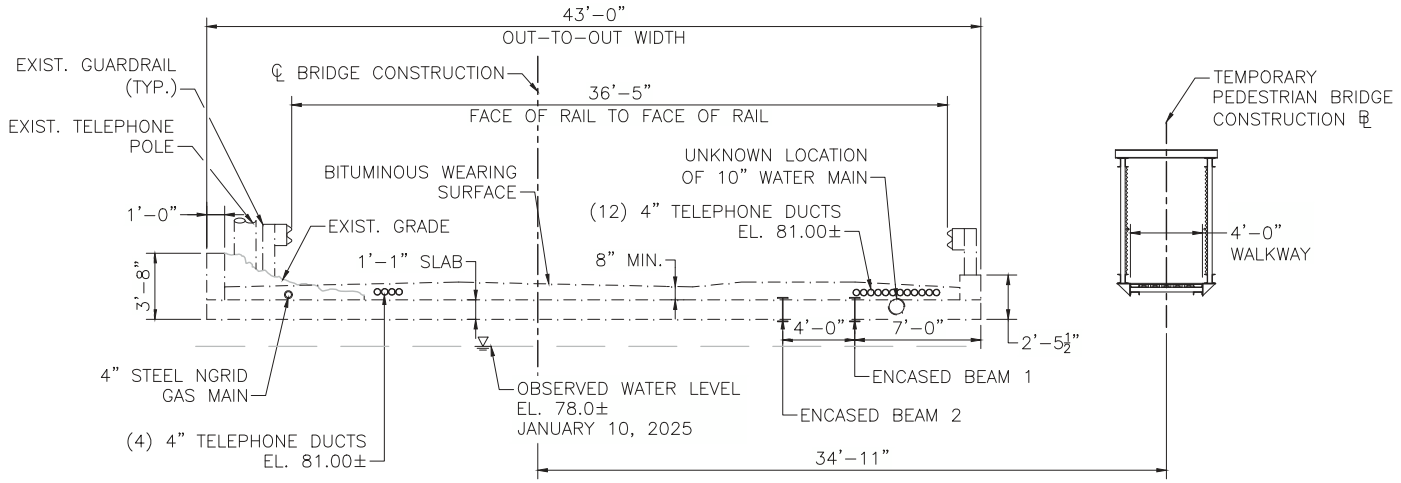
SCALE IN FEET

### NOTES:

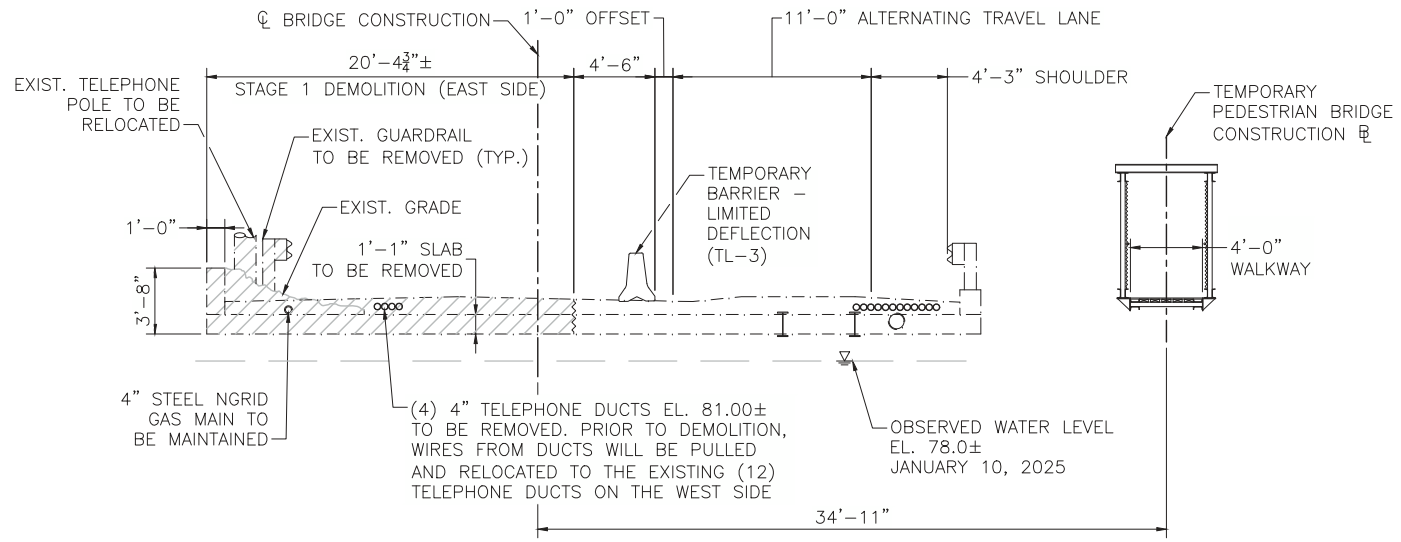
1. SEE RELATED MICROPILE NOTES ON SHEET 4.
2. 4" ø WEEP HOLES 10'-0" O.C. LOCATED 12" ABOVE THE HEEL OF THE FOOTING SLOPING 1" PER FOOT TOWARDS THE FRONT FACE. PROVICE 1 CUBIC YARD OF CRUSHED STONE AT EACH END OF WEEP HOLE.
3. ALL CONCRETE SHALL BE 5000 PSI HP CONCRETE.

*CONSTRUCTION JOINT WITH 12" X 2" KEY.

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608051_BR5.DWG Plotted on Mar-25 11:46 AM
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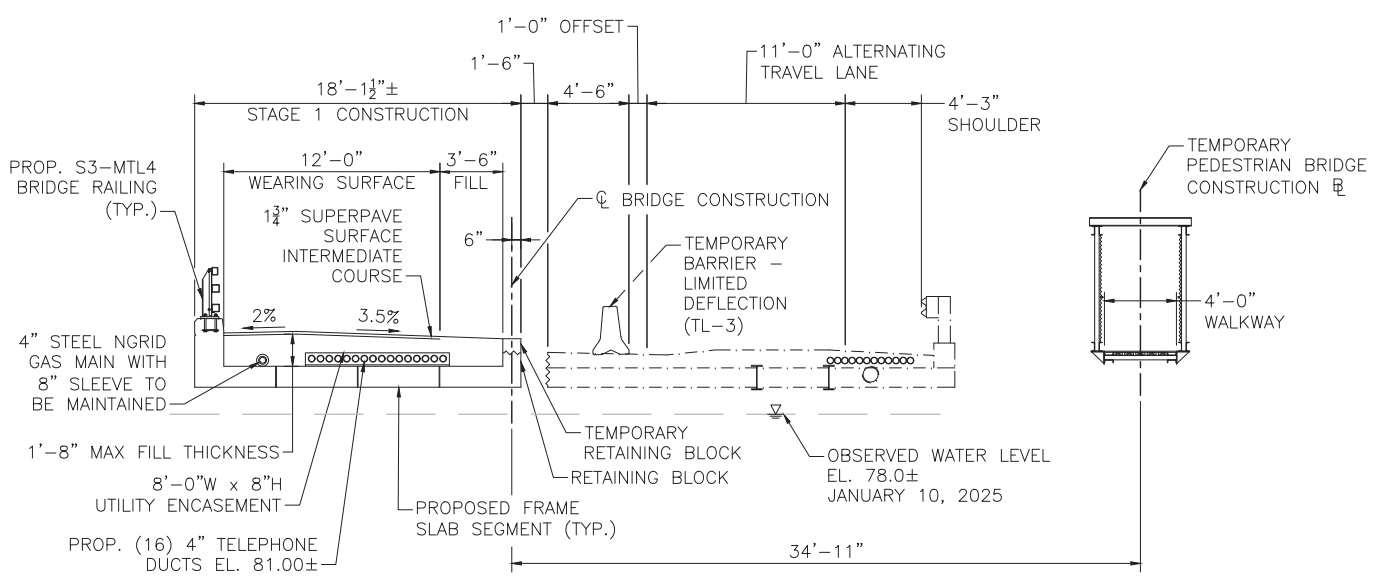

EXISTING BRIDGE SECTION



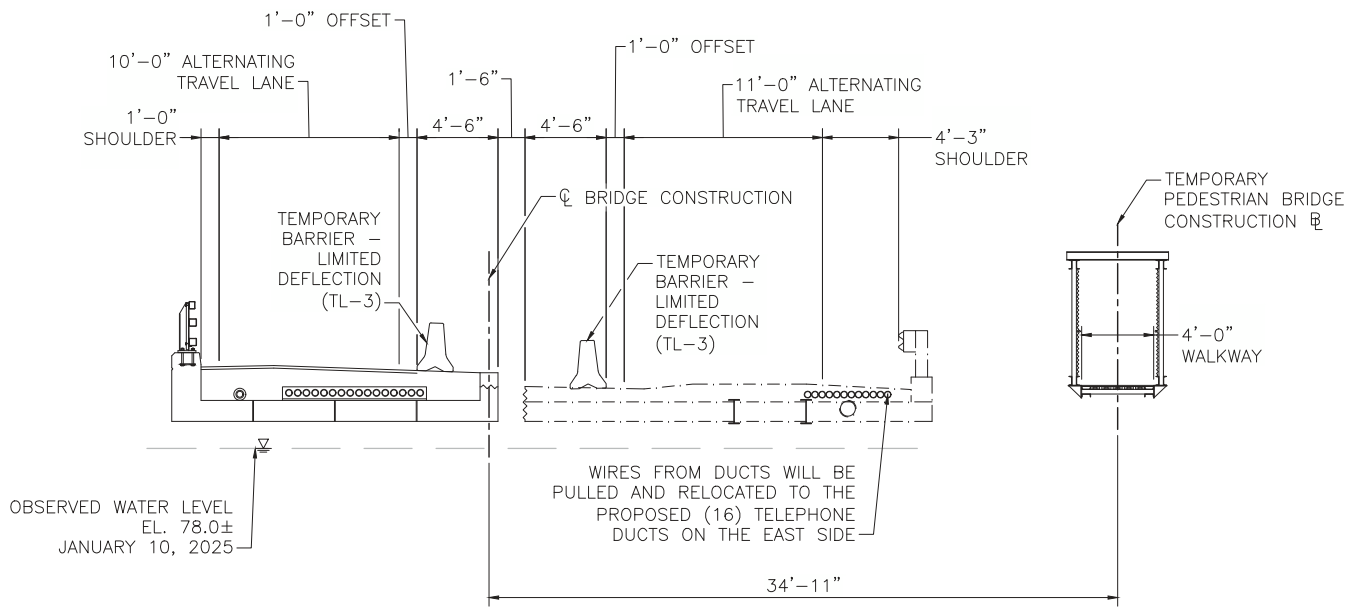

STAGE I – DEMOLITION OF EAST SIDE

## STAGE 1 DEMOLITION

SCALE: 3/32" = 1'-0"




STAGE I – CONSTRUCTION OF EAST SIDE




STAGE IA – VERIZON TELEPHONE LINES RELOCATION

## STAGE 1 CONSTRUCTION

SCALE: 3/32" = 1'-0"

5'-4" 0 5'-4" 10'-8"
SCALE IN FEET

### GENERAL STAGE CONSTRUCTION NOTES:

1. SEE HIGHWAY PLANS FOR ADDITIONAL TRAFFIC MANAGEMENT REQUIREMENTS.
2. ALL DIMENSIONS GIVEN ARE SQUARE, EXCEPT AS NOTED.
3. ALL TEMPORARY BARRIERS PLACED ON THE BRIDGE ARE TO BE LIMITED DEFLECTION (TL-3).
4. TEMPORARY BARRIER (TL-3) ON THE ROADWAY AND TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) ON THE BRIDGE TO MEET CRASH TEST LEVEL 3 STANDARDS.
5. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF TEMPORARY PEDESTRIAN BRIDGE, SEE SHEETS 8 AND 9 FOR DETAILS.

### SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 1

1. INSTALL TEMPORARY PEDESTRIAN BRIDGE AND APPROACH WALKWAYS.
2. VERIZON TO RELOCATE WIRES FROM THE (4) 4" DUCTS TO THE EXISTING (12) TELEPHONE DUCTS ON THE WESTERN SIDE PRIOR TO DEMOLITION.
3. INSTALL TEMPORARY PROTECTIVE SHIELDING.
4. INSTALL TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) WHERE SHOWN.
5. RELOCATE EXISTING TELEPHONE POLE.
6. TRANSITION TRAFFIC TO ONE-LANE ALTERNATING TRAVEL ON THE WESTERN PORTION OF THE BRIDGE.
7. REMOVE PORTION OF EXISTING STRUCTURE TO LIMIT SHOWN.
8. INSTALL PORTION OF PROPOSED STRUCTURE TO LIMIT SHOWN, INCLUDING FRAME SLAB SEGMENTS, BRIDGE RAILING AND FILL. THIRD FRAME SEGMENT TO INCLUDE RETAINING BLOCK AND TEMPORARY RETAINING BLOCK TO HOLD FILL AS SHOWN. INSTALL PROPOSED (16) TELEPHONE DUCTS AND UTILITY ENCASEMENT ON EASTERN SIDE OF THE NEWLY CONSTRUCTED BRIDGE PORTION.
9. INSTALL 1¾" SUPERPAVE SURFACE INTERMEDIATE COURSE FOR THE LIMITS SHOWN OF THE NEWLY CONSTRUCTED PORTION OF BRIDGE UNDER STAGE 1. AFTERWARDS, INSTALL TEMPORARY BARRIER – LIMITED DEFLECTION (TL-3) AS SHOWN.
10. VERIZON TO PULL WIRES FROM DUCTS AND RELOCATE TO PROPOSED (16) TELEPHONE DUCTS ON THE EASTERN SIDE.

### LEGEND

▨ LIMITS OF DEMOLITION

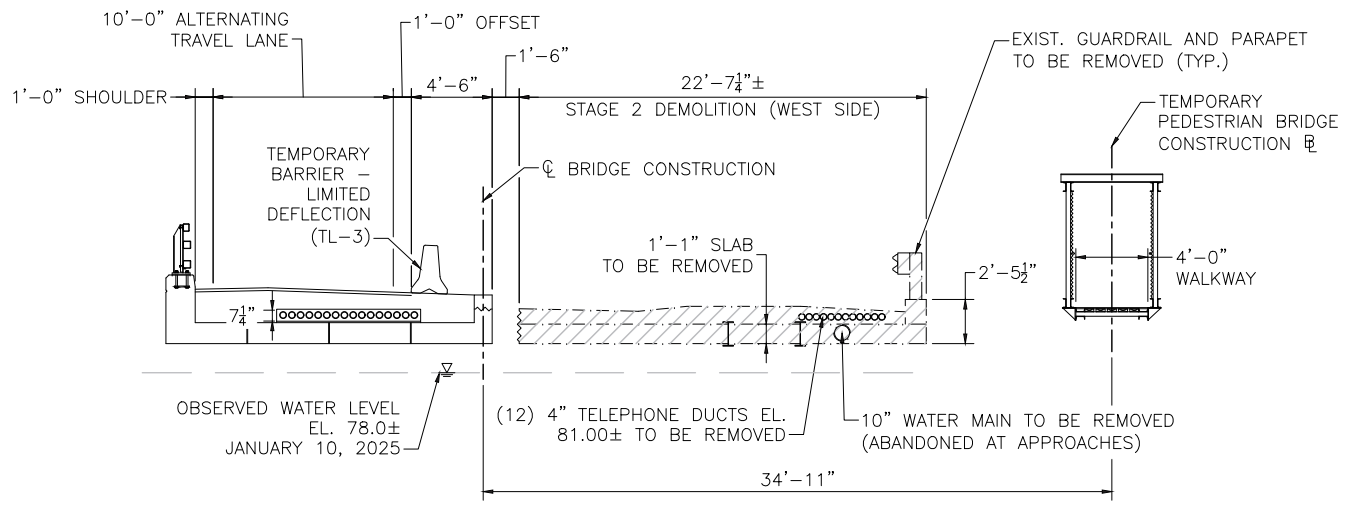
Proposal No. 608051 - 132406

608051_BR6-7.DWG Plotted on Mar-25 11:46 AM

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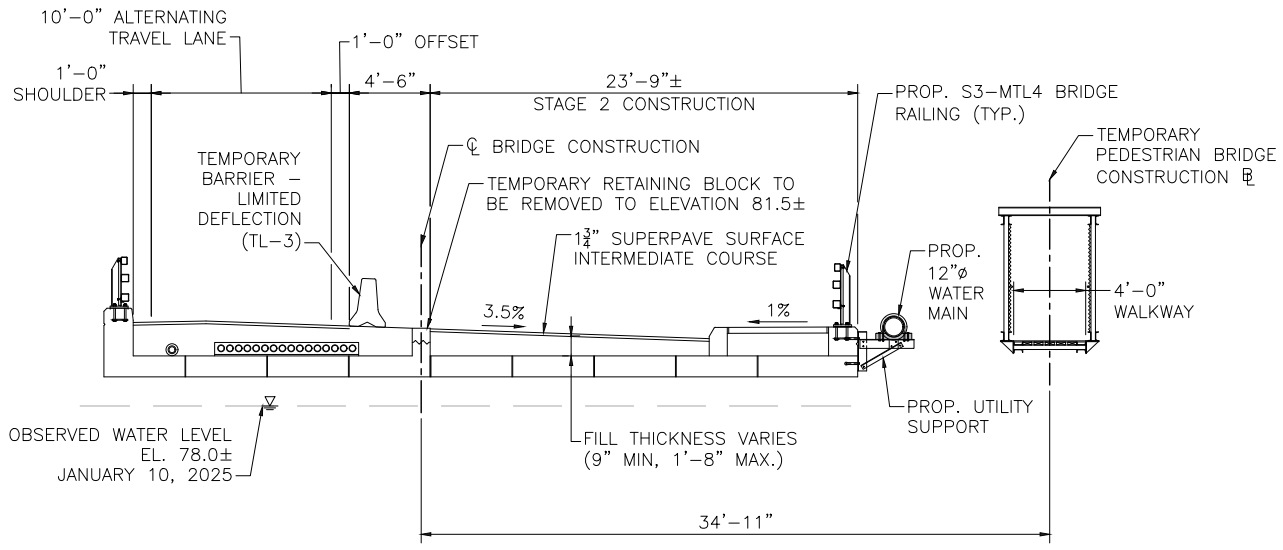
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ACOE PLANS SHEET 24 OF 27

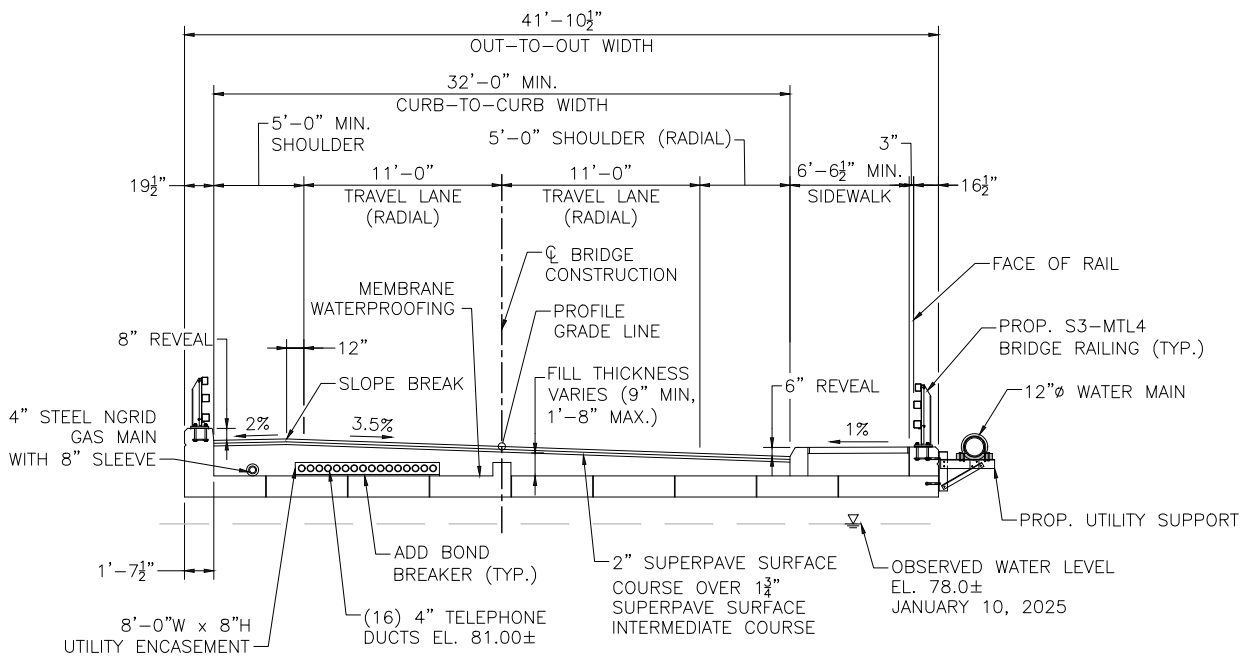



STAGE 2 – DEMOLITION OF WEST SIDE

SCALE: $\frac{3}{32}$" = 1'–0"




STAGE II – CONSTRUCTION OF WEST SIDE




FINAL SECTION

STAGE 2 CONSTRUCTION

SCALE: $\frac{3}{32}$" = 1'–0"

5'-4" 0 5'-4" 10'-8"

SCALE IN FEET

## GENERAL STAGE CONSTRUCTION NOTES:

1. REFER TO SHEET 6 FOR GENERAL CONSTRUCTION NOTES.

## SUGGESTED SEQUENCE OF CONSTRUCTION – STAGE 2

1. RELOCATE ST 38 (MAIN STREET) ONE–WAY ALTERNATING TRAFFIC TO EASTERN NEWLY CONSTRUCTED PORTION OF THE BRIDGE.
2. REMOVE TEMPORARY BARRIER – LIMITED DEFLECTION (TL–3) FROM THE EXISTING WESTERN PORTION OF THE BRIDGE.
3. REMOVE 10" WATER MAIN.
4. REMOVE (12) 4" TELEPHONE DUCTS.
5. REMOVE THE REMAINING PORTION OF THE EXISTING STRUCTURE FOR THE LIMITS SHOWN.
6. INSTALL REMAINING PART OF THE STRUCTURE, INCLUDING FRAME SEGMENTS, SIDEWALK, BRIDGE RAILING AND FILL TO THE THICKNESS SHOWN, AND REMOVE TEMPORARY RETAINING BLOCK.
7. INSTALL 1¾" SUPERPAVE SURFACE INTERMEDIATE COURSE FOR THE LIMITS OF THE STAGE 2 CONSTRUCTION.
8. CONSTRUCT PROPOSED UTILITY SUPPORT AND INSTALL 12" DIAMETER WATER MAIN.
9. REMOVE TEMPORARY BARRIER – LIMITED DEFLECTION (TL–3).
10. AFTER CONSTRUCTION OF THE WORK SHOWN UNDER THE STAGE 2 LIMITS, 1¾" SUPERPAVE SURFACE INTERMEDIATE COURSE SHALL BE INSTALLED OVER REMAINING WIDTH OF THE BRIDGE (4'–6"). THEN, THE FINAL 2" SUPERPAVE SURFACE COURSE SHALL BE INSTALLED FOR THE FULL WIDTH OF THE STRUCTURE. .
11. OPEN THE STRUCTURE TO TWO–WAY TRAFFIC AND TO PEDESTRIAN TRAFFIC IN THE FINAL CONDITION.
12. REMOVE TEMPORARY PEDESTRIAN BRIDGE, APPROACH WALKWAYS, AND CUT/REMOVE TEMPORARY SHEETING.

## LEGEND

LIMITS OF DEMOLITION

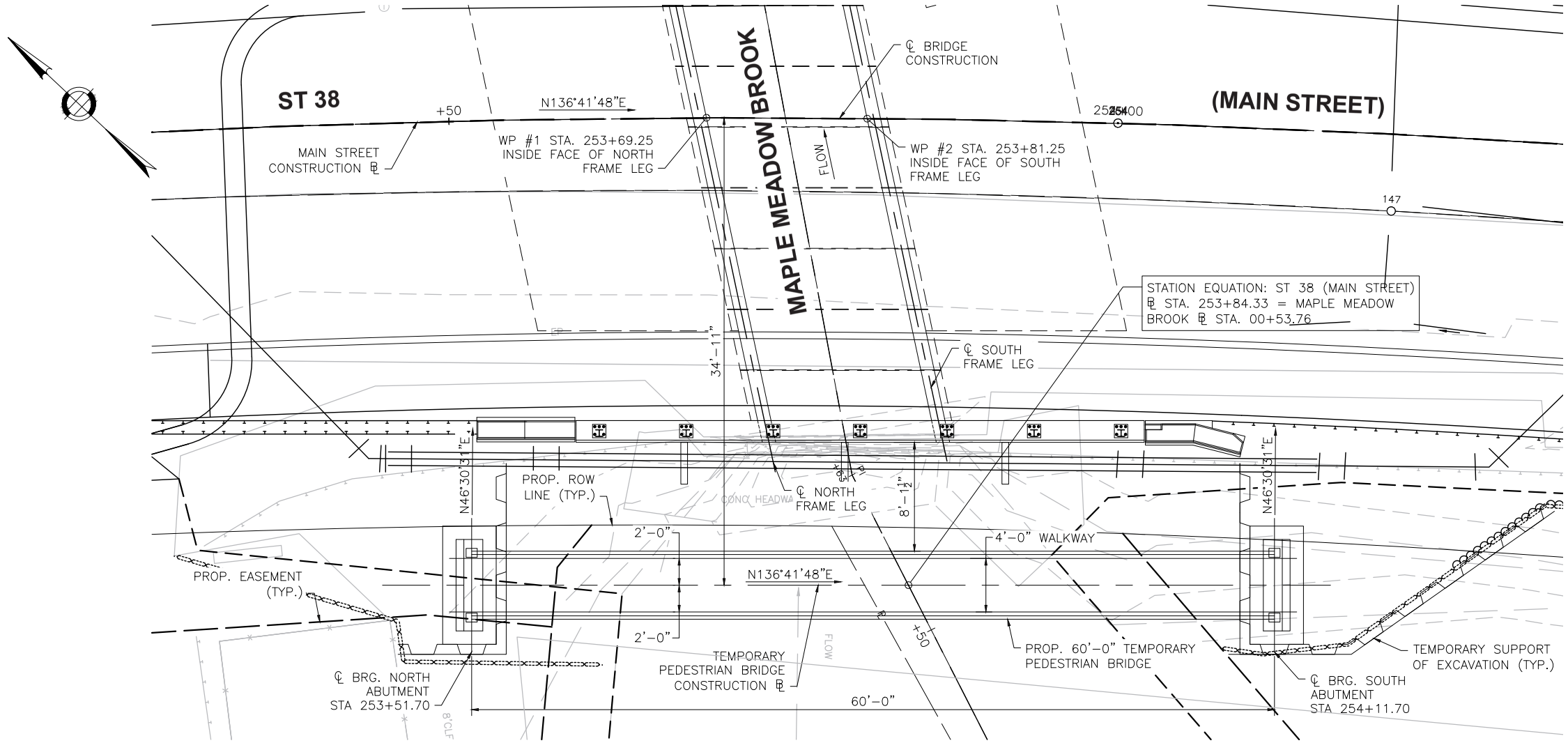


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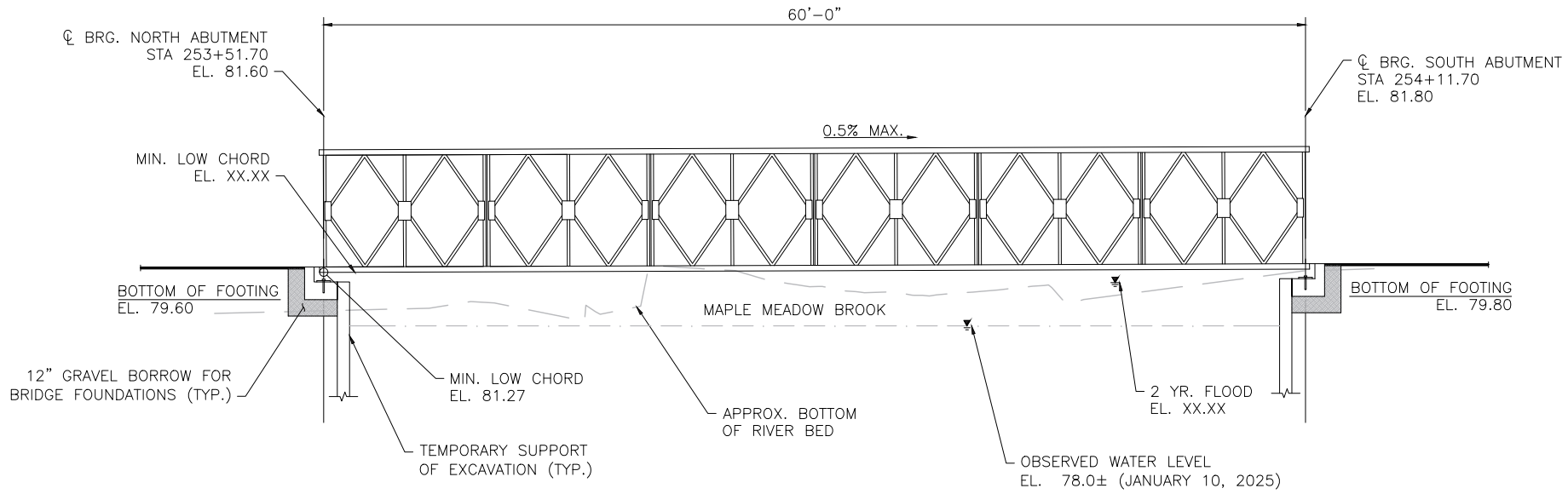



NOTE:

CHANNEL ARMORING NOT SHOWN FOR CLARITY.

## TEMPORARY PEDESTRIAN BRIDGE PLAN

SCALE: 1" =10'




## TEMPORARY PEDESTRIAN BRIDGE ELEVATION

SCALE: 1" = 10'

5 0 5 10

SCALE IN FEET

NOTES:

1. PRE-ENGINEERED TEMPORARY PANELIZED BRIDGE SHOWN. ACTUAL BRIDGE TYPE TO BE DETERMINED AND DESIGNED BY CONTRACTOR TO MEET SPAN, WIDTH AND LOW CHORD REQUIREMENTS.
2. THE TEMPORARY PEDESTRIAN BRIDGE SHALL BE DESIGNED ACCORDING TO THE LATEST EDITION OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THE LATEST EDITION OF THE AASHTO GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES AND THE FOLLOWING MINIMUM DESIGN LOAD:

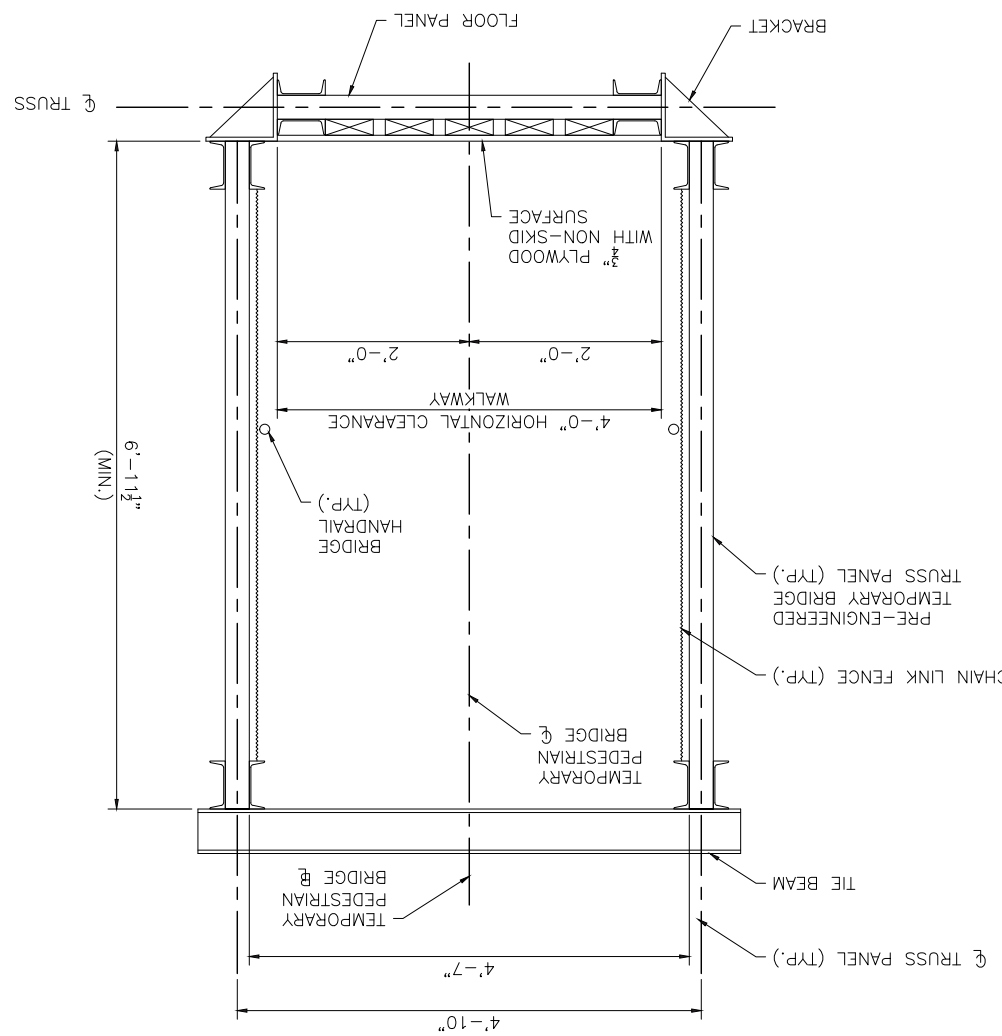
   PEDESTRIAN LIVE LOAD: 90 PSF
   WIND LOAD: PER ABOVE AASHTO GUIDELINES

3. CONTRACTOR TO DESIGN SUBSTRUCTURE INCLUDING TEMPORARY ABUTMENTS AND BACKWALLS.
4. AFTER THE CONSTRUCTION AND OPENING OF THE PROPOSED VEHICULAR BRIDGE, THE TEMPORARY PEDESTRIAN BRIDGE, INCLUDING ABUTMENTS AND OTHER RELATED ITEMS SHALL BE REMOVED, AND THE AREA RESTORED TO ITS EXISTING OR PROPOSED CONDITION.
5. SEE SPECIAL PROVISIONS FOR OTHER REQUIREMENTS FOR THE TEMPORARY PEDESTRIAN BRIDGE.
6. CONCRETE FOR THE SUBSTRUCTURE OF TEMPORARY BRIDGE SHALL BE 4000 PSI, ¾ IN, 610 CEMENT CONCRETE.
7. CONTRACTOR TO COORDINATE WITH DIG-SAFE FOR ANY UNDERGROUND UTILITIES TO AVOID CONFLICT BEFORE PLACEMENT OF CRUSHED STONE FOR SLOPE TREATMENT AND TEMPORARY ABUTMENT.

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## TEMPORARY PEDESTRIAN BRIDGE TRANSVERSE SECTION

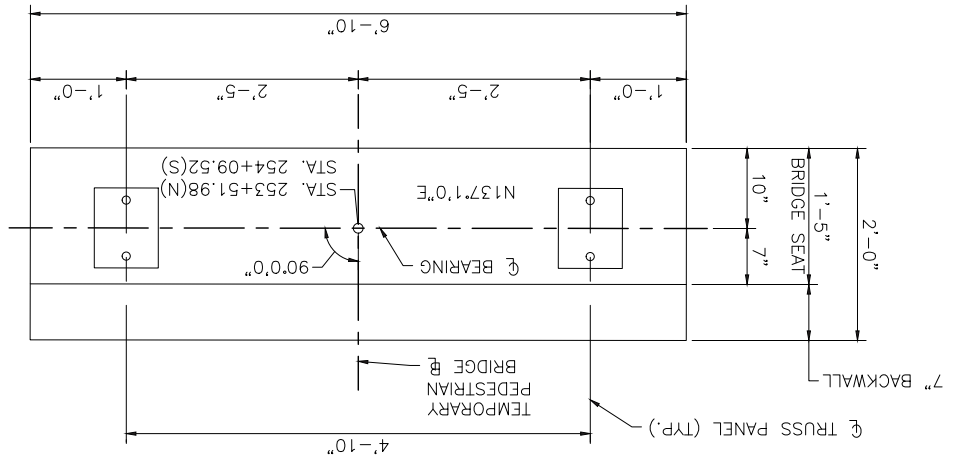
SCALE: 1" = 2'-0"




## TEMPORARY PEDESTRIAN BRIDGE ABUTMENT PLAN

SCALE: 1" = 2'-0"

NOTE:
NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR.




SCALE IN FEET

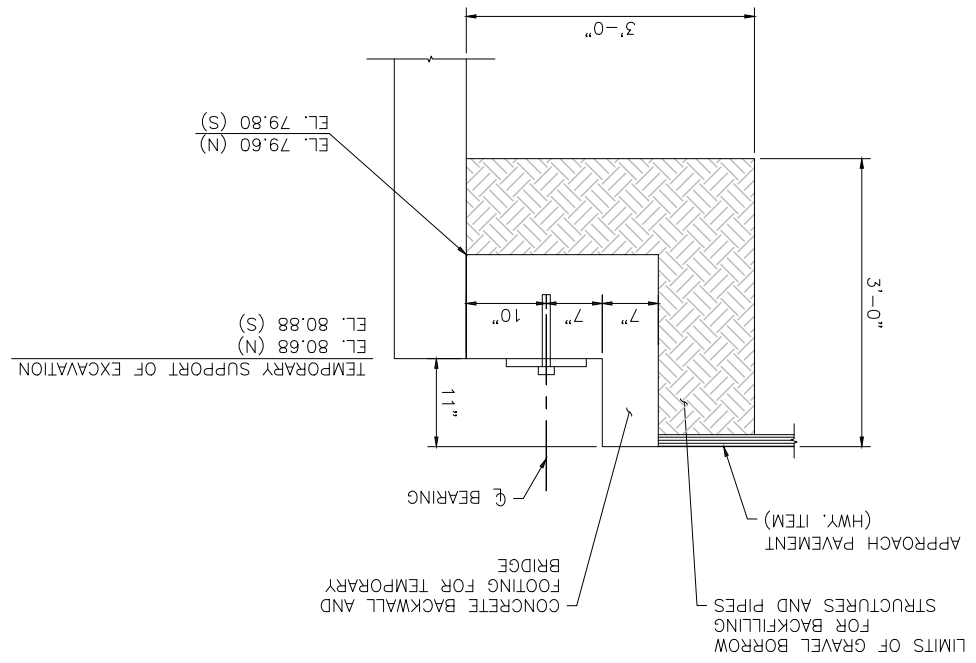
1 0 1 2

## TEMPORARY PEDESTRIAN BRIDGE NOTES:

1. ALL DETAILS AND DIMENSIONS SHOWN ARE CONCEPTUAL. CONTRACTOR SHALL DESIGN THE TEMPORARY PEDESTRIAN BRIDGE SUPERSTRUCTURE AND SUBSTRUCTURE IN ACCORDANCE WITH NOTES ON SHEET 8.
2. ABUTMENT ELEVATIONS ARE BASED ON AVAILABLE BRIDGE DATA AND A 2 IN. BEARING HEIGHT. THE CONTRACTOR SHALL ADJUST AS NEEDED.

## TEMPORARY PEDESTRIAN BRIDGE ABUTMENT SECTION

SCALE: 1" = 2'-0"






Proposal No. 60805I-132406

Initial Sketch Plan Submittal (SP1) 14-February-2025



60805I_BR9.DWG Plotted on: Mar-25 11:47 AM

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## Larner, Erica N. (DOT)

**From:** Vasconcelos, Daniel B CIV USARMY CENAE (USA) <Daniel.B.Vasconcelos@usace.army.mil>
**Sent:** Thursday, April 17, 2025 2:17 PM
**To:** Larner, Erica N. (DOT)
**Cc:** Dennis Vertiyev; Kernan, Eamon (DOT); Thompson, Kevin S. (DOT); Joshua Ward; Sam Spelman; Oxana Fartushnaya; 1303319X MassDOT Wilmington Rte 38; Davis, Heidi (DEP); Lewis, Tyler (DEP); Hale, Ryan (DEP); Iannelli, Jaime (DEP)
**Subject:** RE: Wilmington (608051) PCN Submittal - RECONSTRUCTION ON ROUTE 38 (MAIN STREET), FROM ROUTE 62 TO THE WOBURN C.L.

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi Erica,

I have completed my initial review of this project in Wilmington. We have assigned it Corps file number NAE-2025-00171. I have a few comments/questions that need to be addressed before I can continue my review, as follows:

1. The plans are too large in terms of file size. I extracted them from the document and tried to minimize the file size, but they are still 60 MB. We typically ask that plans be no larger than 10 MB, but that may be difficult in this case. Please try to reduce the file size to the 10-20 MB range or below. If this is not possible, you may need to delete some sheets. For Corps purposes the plans should focus on impacts within Corps jurisdiction (plan views and relevant cross-sections). If you do need to remove plans, I would suggest starting with the drainage plans (sheets 16-36 and 42-44), some of the detail sheets (sheets 53, 55), and the boring logs (sheets 61-62) and seeing if that brings the file size down sufficiently. If not, we could probably cut some of the landscape plans if necessary (e.g. sheet 51). If the file is still very large we can discuss possibly removing other sheets. If sheets are removed, please renumber the sheets to form a sequentially numbered set.

2. On plan sheet 10 of 68, it lists 2,378 square feet of permanent impacts to WOTUS. This appears to be a typo, since in other locations the impact total is listed as 2,380 square feet. Please revise accordingly.

3. On plan sheet 10, the area within the culvert is typically considered a permanent discharge of fill. Please revise the plans and impact calculations accordingly.

4. On plan sheet 10, the proposed culvert dimensions are listed as 3'W x 1'6"H. This may be a typo since the culvert is listed as 3' x 3' elsewhere. Please revise accordingly.

5. On plan sheet 10, on the east side of the road, the unnamed intermittent stream appears to end abruptly and is surrounded by Wetland A and associated wetland impacts. Is this drawn accurately, and if so, can you please explain why the stream and OHW delineation ends in this manner? Do you have photos of this location that would help to illustrate the site conditions?

6. On plan sheet 13, there appear to be permanent wetland impacts due to stone placement in the northeast and northwest bridge quadrants, but these are not shaded in. Please revise the plans to shade these impact areas appropriately, and ensure the impact numbers reflect these impacts.

7. On plan sheet 56, the culvert section shows embedment with 12" of natural streambed material, whereas on sheet 59 the culvert reinforcement detail shows 6" of natural streambed material over 6" of crushed stone. Please clarify.

8. Since the project crosses a FEMA Floodway, I will need to coordinate with FEMA as required under our GP coordination procedures. The narrative states the project "will neither result in any increase in flood elevations within the community during the occurrence of Maple Meadow Brook's base flood discharge, nor necessitate any revision to the river's existing floodway delineation in proximity to the project location and thereby meets applicable NFIP base floodplain development performance standards." FEMA often requests to review the hydraulic study report that led to such conclusions. Is such a study available that you could provide to me to share with FEMA?

9. When the ESA screening was completed on IPaC, the monarch butterfly was listed as a Candidate species. It has since been updated to a Proposed Threatened species. I will need the lead federal agency (FHWA, or MassDOT acting on behalf of FHWA) to provide an updated statement on whether or not the project is expected to jeopardize the continued existence of the monarch butterfly and if a conference with USFWS is therefore required.

If you have any questions please let me know.

Thank you,
Dan

Daniel B. Vasconcelos, PWS
Environmental Scientist/Project Manager
U.S. Army Corps of Engineers
New England District, Regulatory Division
696 Virginia Road
Concord, MA 01742
(978) 318-8653

---

**From:** Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Sent:** Friday, April 11, 2025 12:08 PM
**To:** Vasconcelos, Daniel B CIV USARMY CENAE (USA) <Daniel.B.Vasconcelos@usace.army.mil>; Newton, Kevin M CIV USARMY CENAE (USA) <Kevin.M.Newton@usace.army.mil>
**Cc:** Dennis Vertiyev <dvertiyev@greenintl.com>; Kernan, Eamon (DOT) <Eamon.Kernan@dot.state.ma.us>; Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>; Joshua Ward <jward@greenintl.com>; Sam Spelman <sspelman@greenintl.com>; Oxana Fartushnaya <ofartushnaya@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>
**Subject:** [Non-DoD Source] Wilmington (608051) PCN Submittal - RECONSTRUCTION ON ROUTE 38 (MAIN STREET), FROM ROUTE 62 TO THE WOBURN C.L.

Hi Kevin & Dan,

MassDOT, in conjunction with the Town of Wilmington, is submitting a Pre Construction Notification under Section 404 of the Clean Water Act for the proposed reconstruction of the existing Route 38 (Main Street) roadway between the intersection of Route 38 and Route 62 to the Woburn city line for a total project length of approximately 2.1 miles (MassDOT Project No. 608051). A new water system is proposed along a portion of the project corridor. The Town of Wilmington will fund water system improvements, while the rest of the project is being funded by MassDOT. The project will also include the replacement of Bridge No. W-38-011 carrying Route 38 over Maple Meadow Brook.

Permanent disturbance of 3,292 SF of VW caused by proposed roadway and drainage improvements. Permanent disturbance of 2,380 SF of LUW/WOTUS mainly caused by bridge and culvert replacements, scour countermeasures as well as other drainage improvements. Temporary disturbance of 2,842 SF of VW is required for erosion sediment controls and access to construct the proposed improvements. Temporary disturbance of 710 SF of LUW/WOTUS is required for control of water, sediment controls and access.

The proposed work within Waters of the United States requires a Clean Water Act Section 401 Water Quality Certification pursuant to 314 CMR 9.04(1) since the combined projects will result in cumulative permanent and temporary impacts to Vegetated Wetlands (VW) and Land Under Water (LUW)/Waters of the United States (WOTUS), excess of 5,000 square feet and dredging over 100 cubic yards below the Ordinary High Water (OHW) mark of Maple Meadow Brook. A Notice of Intent has been filed with the Wilmington Conservation Commission as well.

If you have an questions or concerns, please don't hesitate to let me know,

**Erica N. Larner**
**Massachusetts Department of Transportation – Highway Division**
Wetlands & Water Resources Coordinator
10 Park Plaza, Boston, MA 02116
Mobile (857) 268-1729

---

**From:** Oxana Fartushnaya <ofartushnaya@greenintl.com>
**Sent:** Thursday, April 10, 2025 4:12 PM
**To:** Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Cc:** Dennis Vertiyev <dvertiyev@greenintl.com>; Kernan, Eamon (DOT) <Eamon.Kernan@dot.state.ma.us>; Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>; Joshua Ward <jward@greenintl.com>; Sam Spelman <sspelman@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>
**Subject:** RE: Wilmington (608051) WQC/PCN

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi Erica,

I know Kevin already signed off for vacation. We submitted the 401 WQC on ePortal this afternoon. Below please find the link to the compiled 401/404 submittal package:

> ***20250410 Joint 401WQC_404ACOE PCN***
> Password: DAJZc91tE22d
> https://greenintl.egnyte.com/fl/1zY1Erb7fk
> *Note: Link is valid for 14 days*

I know the file size may be too large for DEP. Please let us know if it will need to be split into parts.

Thank you,
Oxana

**Oxana Fartushnaya**
Client Manager II

**Office** (978) 923-0400
**Direct** (978) 843-5276
**Mobile** (857) 753-9193
**Website** www.greenintl.com

Green International Affiliates, Inc.
*Tewksbury, MA and Lincoln, RI*

****Please note that I will be out of the country with limited availability to respond to inquiries between 4/4/2025 to 4/13/2025****

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**From:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>
**Sent:** Thursday, April 10, 2025 11:14 AM
**To:** Oxana Fartushnaya <ofartushnaya@greenintl.com>; Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Cc:** Joshua Ward <jward@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>; Sam Spelman <sspelman@greenintl.com>; Dennis Vertiyev <dvertiyev@greenintl.com>
**Subject:** RE: Wilmington (608051) WQC/PCN

Hi Oxana,

Thanks for the quick turnaround. Here are the signed letters and the form. I am also attaching a copy of the legal ad with the Wilmington Town Crier that will be published on 4/17.

I will be leaving on vacation starting this afternoon and returning on 4/22. So if there is anything else you need from me in that time, please reach out to Erica.

Thank you,
Kevin

---

**From:** Oxana Fartushnaya <ofartushnaya@greenintl.com>
**Sent:** Thursday, April 10, 2025 10:53 AM
**To:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>; Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Cc:** Joshua Ward <jward@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>; Sam Spelman <sspelman@greenintl.com>; Dennis Vertiyev <dvertiyev@greenintl.com>
**Subject:** RE: Wilmington (608051) WQC/PCN

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Hi Kevin,

Attached please find the corrected signed form.

Will you be able to return the signed files back to us today?

Thank you,
Oxana

****Please note that I will be out of the country with limited availability to respond to inquiries between 4/4/2025 to 4/13/2025****

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**From:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>
**Sent:** Thursday, April 10, 2025 9:10 AM
**To:** Oxana Fartushnaya <ofartushnaya@greenintl.com>; Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Cc:** Joshua Ward <jward@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>; Sam Spelman <sspelman@greenintl.com>; Dennis Vertiyev <dvertiyev@greenintl.com>
**Subject:** RE: Wilmington (608051) WQC/PCN

Hi Oxana,

Apologies for the delay, Erica was out yesterday and unable to sign.

Would you mind sending a new PCN form? It appears you signed as the applicant instead of Erica. Do we have a fresh form you can send over?

Thanks,
Kevin
**Kevin Thompson**
*Environmental Analyst*
*Wetlands Unit*
*(781) 879 - 6797*
*MassDOT – Highway* ***Division***

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**From:** Oxana Fartushnaya <ofartushnaya@greenintl.com>
**Sent:** Tuesday, April 8, 2025 1:27 PM
**To:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>; Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Cc:** Joshua Ward <jward@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>; Sam Spelman <sspelman@greenintl.com>; Dennis Vertiyev <dvertiyev@greenintl.com>
**Subject:** RE: Wilmington (608051) WQC/PCN

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Hi Kevin and Erica,

The team is finalizing a few last items/attachments, and we will be submitting the 401 WQC on ePortal this week (most likely by EOD on Thursday 4/10). Attached please find the ACOE form to be signed by Erica. Please send us back the signed form along with both signed submittal letters (attaching them again to this email chain since they are not signed). We will compile the final 401/404 package with attachments and will forward it to you. MassDOT usually sends a copy of the compiled final package to DEP/Heidi and submits the package to ACOE.

Please let us know if you have any questions.

Thank you,
Oxana

**Oxana Fartushnaya**
Client Manager II

**Office** (978) 923-0400
**Direct** (978) 843-5276
**Mobile** (857) 753-9193
**Website** www.greenintl.com

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*Tewksbury, MA and Lincoln, RI*

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****Please note that I will be out of the country with limited availability to respond to inquiries between 4/4/2025 to 4/13/2025****

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**From:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>
**Sent:** Monday, April 7, 2025 3:37 PM
**To:** Oxana Fartushnaya <ofartushnaya@greenintl.com>; Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Cc:** Joshua Ward <jward@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>
**Subject:** RE: Wilmington (608051) WQC/PCN

Hi Oxana,

These cover letters both look good to me. Please proceed with submitting the 401 WQC and I will get the public notice process started.

I also want to give you the heads up that I will be out of the office starting this Friday 4/11 and returning on 4/22. So if anything comes in during that time please make sure Erica is included so she can handle anything that comes up.

Thanks,
Kevin

**Kevin Thompson**
*Environmental Analyst*
*Wetlands Unit*
*(781) 879 - 6797*

*MassDOT – Highway* **Division**

**From:** Oxana Fartushnaya <ofartushnaya@greenintl.com>
**Sent:** Monday, April 7, 2025 6:30 AM
**To:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>; Larner, Erica N. (DOT) <erica.n.larner@dot.state.ma.us>
**Cc:** Joshua Ward <jward@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>
**Subject:** RE: Wilmington (608051) WQC/PCN

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Hi Kevin and Erica,

Attached please find the DRAFT submittal letters for your review.

Also, I think you can start working on coordinating the public notice since we hope to be filing the 401/404 this week as soon as the last pieces are coordinated/confirmed. I am on vacation but helping my team with some last-minute questions to hopefully be able to make this submittal happen sooner than my return since we need to file this asap.

I copied Josh from my team here. If you have any comments on the letters, or any other questions/comments, he can address them as well.

Thank you,
Oxana

**Oxana Fartushnaya**
Client Manager II

**Office** (978) 923-0400
**Direct** (978) 843-5276
**Mobile** (857) 753-9193
**Website** www.greenintl.com

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****Please note that I will be out of the country with limited availability to respond to inquiries between 4/4/2025 to 4/13/2025****

**From:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>
**Sent:** Wednesday, April 2, 2025 10:47 AM
**To:** Oxana Fartushnaya <ofartushnaya@greenintl.com>
**Cc:** Dennis Vertiyev <dvertiyev@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>; Walker, Courtney L. (DOT) <Courtney.L.Walker@dot.state.ma.us>; Kernan, Eamon (DOT) <Eamon.Kernan@dot.state.ma.us>
**Subject:** RE: Wilmington (608051) WQC/PCN

Hi Oxana,

Yes, there are no comments on the plans. Please make sure they are in 11x17 format and use Corp Terminology.

And you are correct, that process is still how we plan to proceed. Once you have submitted to DEP please send us the full permit application for signature and submittal to ACOE.

Thank you,
Kevin
**Kevin Thompson**
*Environmental Analyst*
*Wetlands Unit*
*(781) 879 - 6797*
*MassDOT – Highway* ***Division***

**From:** Oxana Fartushnaya <ofartushnaya@greenintl.com>
**Sent:** Tuesday, April 1, 2025 6:43 PM
**To:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>
**Cc:** Dennis Vertiyev <dvertiyev@greenintl.com>; 1303319X MassDOT Wilmington Rte 38 <1303319XMassDOTWilmingtonRte38@GreenIntl.com>; Walker, Courtney L. (DOT) <Courtney.L.Walker@dot.state.ma.us>; Kernan, Eamon (DOT) <Eamon.Kernan@dot.state.ma.us>
**Subject:** RE: Wilmington (608051) WQC/PCN

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Thanks, Kevin. I downloaded the files. We will review and let you know if we have any questions.

Very quick questions to help us accelerate the process:

1. Is it safe to assume there are no comments on the plans and we can start rescaling them to 11 x 17 format?
2. Will MassDOT be submitting the application instead of us? The DEP applications no longer require signatures since they are being filed on ePortal. ACOE application does need the signatures, but we usually send you the compiled report once we file with DEP to get the digital app attached to the full report. ACOE form typically gets signed then. Please let me know if the process has changed.

Thank you,
Oxana

**Oxana Fartushnaya**
Client Manager II

**Office** (978) 923-0400
**Direct** (978) 843-5276
**Mobile** (857) 753-9193
**Website** www.greenintl.com

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*Tewksbury, MA and Lincoln, RI*

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**From:** Thompson, Kevin S. (DOT) <kevin.s.thompson@dot.state.ma.us>
**Sent:** Tuesday, April 1, 2025 3:52 PM
**To:** Oxana Fartushnaya <ofartushnaya@greenintl.com>
**Cc:** Dennis Vertiyev <dvertiyev@greenintl.com>
**Subject:** Wilmington (608051) WQC/PCN

Hi Oxana,

I am returning the Wilmington 401/404 narrative with a few comments from our team. Once the comments have been addressed please send us a final copy for signature and submittal to DEP and ACOE. I am also attaching the Section 106 and Section 7 documentation for the submittals.

https://acrobat.adobe.com/link/review?uri=urn:aaid:scds:US:4a761cd9-d873-43e8-9df5-5f0fe2e1faa1

If you have any questions about the comments, feel free to reach out or we can have a call to discuss.

Thank you,
Kevin

**Kevin Thompson**
Environmental Analyst
Wetlands Unit
(781) 879 - 6797
*MassDOT – Highway* ***Division***

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General Permit No.: NAE-2022-02649 Final Effective Date: June 2, 2023
Applicant: General Public, Commonwealth of Massachusetts Expiration Date: June 1, 2028

**Department of the Army**
**General Permits for the Commonwealth of Massachusetts**

The New England District of the U.S. Army Corps of Engineers (USACE) hereby issues twenty-five (25) regional general permits (GPs) for activities subject to USACE jurisdiction in waters of the U.S., including wetlands, navigable waters within the Commonwealth of Massachusetts and adjacent ocean waters to the seaward limit of the outer continental shelf. The Massachusetts GPs (hereafter referred to as the MA GP or GP) are issued in accordance with USACE regulations at 33 CFR 320 – 332 [see 33 CFR 325.5(c)(1)]. These GPs establish criteria and contain permit conditions to ensure that the authorized activities have no more than minimal individual and cumulative adverse impacts to the environment.


| This document contains the following sections: | | Pages |
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| SECTION I | Statutory Authorities & Regulated Activities | 2 |
| SECTION II | Review Categories & Application Procedures | 3-7 |
| SECTION III | Massachusetts General Permits | 8-34 |
| SECTION IV | General Conditions | 35-51 |
| SECTION V | Mitigation Standards | 52-54 |
| SECTION VI | Federal & State Agency Contact Information & Websites | 55-56 |
| SECTION VII | Definitions & Acronyms | 57-66 |
| APPENDIX A | Guidance for Section 106 NHPA Compliance in Massachusetts | 67-71 |
| APPENDIX B | Pre-Construction Notification | 72-77 |
| APPENDIX C | Self-Verification Notification | 78-81 |
| APPENDIX D | Pre-Construction Notification Application Checklist | 82-88 |


In issuing these GPs, the Federal Government does not assume any liability for the following: (a) damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes; (b) damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest; (c) damages to persons, property or to other permitted or unpermitted activities or structures caused by the activity authorized by any of the GPs; (d) design or construction deficiencies associated with the permitted work; or (e) damage claims associated with any future modification, suspension or revocation of these permits.

Tammy R. Turley 02 June 2023

Tammy R. Turley Date
Chief, Regulatory Division

## SECTION I. STATUTORY AUTHORITES & REGULATED ACTIVITIES

### 1. Work Requiring USACE Authorization

a. Section 10: Work and structures that are located in, over, under or that affect navigable waters of the United States (U.S.) (see 33 CFR 329). The USACE regulates these activities under section 10 of the Rivers and Harbors Act of 1899 (see 33 CFR 322).

b. Section 404: The discharge of dredged or fill material into waters of the U.S (see 33 CFR 328). The USACE regulates these activities under Section 404 of the Clean Water Act (CWA). The term "discharge of dredged or fill material" also includes certain discharges resulting from excavation. Applicants should contact USACE to determine if a particular excavation discharge occurring within waters of the U.S., is a regulated activity. See 33 CFR 323.4 of the CWA for exempted activities.

For additional information on the limits of USACE jurisdiction, please see: https://www.nae.usace.army.mil/Portals/74/docs/regulatory/JurisdictionalLimits/Jurisdictional_Limits_Brochure.pdf

### 2. Authority to Issue General Permits

a. In accordance with 33 CFR 322.2(f), 325.2(e)(2), and 325.5(c), USACE may issue regional general permits authorizing activities under Section 10 of the RHA.

b. In accordance with Section 404(e) of the CWA, 33 USC 1344(e), and 33 CFR 323.2(h), 325.2(e)(2), and 325.5(c), after notice and opportunity for public hearing, USACE may issue regional general permits for any category of activities involving discharges of dredged or fill material if the activities in such category are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will only have minimal cumulative adverse effect on the environment.

### 3. Related Laws

33 CFR 320.3 includes a list of related laws including, but not limited to, Section 408 of the Rivers and Harbors Act of 1899, Section 401 of the Clean Water Act, Section 402 of the Clean Water Act, Section 307(c) of the Coastal Zone Management Act of 1972, Section 106 of the National Historic Preservation Act of 1966, Section 7 of the Endangered Species Act, the Fish and Wildlife Coordination Act of 1956, the Magnuson-Stevens Fishery Conservation and Management Act, the Fish and Wildlife Coordination Act, Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972, Section 7(a) of the Wild and Scenic Rivers Act, the Golden Eagle Protection Act, and the Migratory Bird Treaty Act.

## SECTION II. REVIEW CATEGORIES & APPLICATION PROCEDURES

To qualify under these GPs, the design, construction, and maintenance associated with each proposed activity must meet the terms and eligibility criteria listed in Section III, all applicable general conditions (GCs) in Section IV, and any specific mitigation requirements in Section V. Applicants should first review the GPs to see if a project is eligible for authorization under one or more of the GPs within this document. Any activity not specifically listed may still be eligible for authorization under these GPs; applicants are advised to contact USACE for specific eligibility determination.

Please note that these GPs allow for Self-Verification (SV) contingent upon meeting all criteria and with full adherence to all GCs. Projects that do not qualify for SV, may meet criteria for Pre-Constriction Notification (PCN). Tables are provided under each activity, which outline criteria for SV and PCN. Activities that do not meet criteria for SV or PCN may require review as an Individual Permit (IP). Activities may require a PCN or IP as noted in Sections III and/or IV of this GP. Notwithstanding compliance with the terms of these GPs, USACE retains discretionary authority to require either PCN review or IP review on a case-by-case basis for any project based on concerns for the environment or for any of the other public interest factors found in 33 CFR 320.4(a). These GPs also do not replace or change those activities identified as exempt from USACE regulation (33 CFR 323.4).

### 1. Pre-Application Assistance

Prospective applicants may request a pre-application meeting to address any questions they may have. USACE may also request a pre-application meeting or additional information to facilitate review of the request. Pre-application meetings and/or site visits help streamline the authorization process by alerting the prospective applicant to potentially time-consuming factors that may arise during the evaluation of their project (e.g., avoidance, minimization and compensatory mitigation requirements, historic properties, endangered species, essential fish habitat, impacts to federal projects, and/or dredging of contaminated sediments).

To schedule a pre-application meeting, present questions, or if you need further assistance, please contact USACE at:

Email: cenae-r-ma@usace.army.mil (strongly preferred) Phone: (978) 318-8338

Mail: U.S. Army Corps of Engineers
New England District
Regulatory Division, Massachusetts Section
696 Virginia Road
Concord, MA 01742

### 2. Submitting a Request

Please follow the procedures outlined in Sections II.2-5 when requesting an SV or applying for PCN authorization for activities covered by these GPs. The GPs are provided in Section III below. For SV-eligible projects, the Self-Verification Notification (SVN) must be submitted within 30 days of commencing work. Otherwise, a Pre-Construction Notification (PCN) must be submitted for work that is not SV-eligible. Please include appropriate drawings and attachments and submit your request using the mailbox identified in Section II.4 or II.5 below. USACE will promptly confirm receipt of your request and notify you in the event additional information is required. Guidance on

how to submit electronic correspondence is located on the NAE Regulatory website here: https://www.nae.usace.army.mil/Missions/Regulatory/Submitting-Electronic-Correspondence.

## 3. Local, State & Federal Approvals

Applicants are responsible for applying for and obtaining any required local, state, and federal permits or approvals. These must be obtained prior to the commencement of work in waters. Such authorizations may include a Water Quality Certification, a Coastal Zone Management Act consistency determination, and other approvals as noted below. Authorization under these GPs does not obviate the need for the permittee to obtain other Federal, State, or local permits, approvals, or authorizations required by law.

***I. Water Quality Certification under Section 401 of the Federal Clean Water Act (33 USC 1341).***
Applicants are responsible for determining the appropriate 401 Water quality Certification (WQC) requirements and submitting this information to the USACE at the time of their PCN application or when completing their SVN. Applicants that are unsure of whether their activity has been certified should contact MassDEP, or EPA Region 1 when the activity is located on tribal lands, for a determination. The 401 WQC requirement must be satisfied by acquiring one of the following WQCs from MassDEP (see GC 8):

**General 401 WQC:** The MassDEP issued a WQC on April 21, 2023 conditionally certifies all activities in GPs 1 – 24 eligible for SV and PCN so long as the activity is described in 314 CMR 9.03, and is not an activity described in 314 CMR 9.04, and so long as the activity meets all other requirements, terms and conditions of this WQC. The MassDEP WQC also conditionally certifies activities described in GP 25 so long as the activity meets all other conditions of the WQC. Emergency projects described in GP 25 must obtain an emergency certification or otherwise be authorized pursuant to 310 CMR 10.06, qualify under a Severe Weather Emergency Declaration pursuant to 310 CMR 10.06(8) issued by the MassDEP, or meet the requirements of 9.12(2) or (3) in order to be certified under the WQC

Applicants should refer to the following link to determine if their activity is eligible: *https://www.nae.usace.army.mil/Missions/Regulatory/ State-General-Permits/ Massachusetts-General-Permit/*. If eligible, you must comply with all applicable WQC conditions. Activities listed in 314 CMR 9.03 that are not exempt from the Wetland Protection Act must have a valid Final Order of Conditions (OOC) or Final Restoration Order of Conditions pursuant to 310 CMR 10.00 to be eligible under the General 401 WQC.

**Individual 401 WQC:** In the event the proposed activity is not covered by the general WQC, applicants shall contact MassDEP and apply for an individual 401 WQC if their activity does not qualify for a General 401 WQC as outlined above. MassDEP may issue, waive, or deny the individual 401 WQC on a case-by-case basis. All activities listed in 314 CMR 9.04 must obtain an individual 401 WQC from MassDEP to be eligible under these GPs. When an Individual 401 WQC is required for *PCN activities*, the applicant shall submit their Individual 401 WQC application concurrently to MassDEP and the USACE to comply with 40 CFR 121.

Activities Proposed on Tribal Lands: When an activity is proposed on Tribal lands, the applicant shall refer to the general 401 WQCs granted by the Environmental Protection Agency (EPA), Region 1 on May 15, 2023. These 401 WQCs are located on the USACE Regulatory website: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.

***II. Coastal Zone Management Act Federal Consistency Concurrence pursuant to Section 307 of the CZMA of 1972, as amended.*** Federal consistency concurrence is required for all activities located within the coastal zone, unless determined otherwise by the Massachusetts Office of Coastal Zone Management (MA CZM) (see GC 9). As applicable, this requirement must be satisfied by acquiring one of the following from the MA CZM:

**General CZM Federal Consistency Concurrence (General Concurrence):** MA CZM has granted General Concurrence for all SV and PCN activities for GPs 1-25 and this can be found at: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/. The applicant must obtain all applicable permits and approvals prior to the commencement of work in USACE jurisdiction (i.e., construction begins on site). For SVs, General Concurrence is automatically granted and no further action is required from the applicant. For PCNs, the USACE will coordinate with MA CZM to acquire General Concurrence as part of the PCN application review. During review of the PCN application, USACE may request additional information from the applicant to support CZM's evaluation of the activity.

**Individual CZM Federal Consistency Concurrence (Individual Concurrence):** In certain cases, MA CZM may elevate any GP activity 1-25 to require Individual Concurrence. The applicant must contact MA CZM and follow the procedures to obtain Individual Concurrence as determined appropriate by MA CZM.

The MA CZM program includes five regional offices that serve 78 coastal municipalities. The following map provides more information about these offices: https://www.mass.gov/service-details/czm-regions-coastal-communities-and-coastal-zone-boundary

**III. Other Approvals:** Approvals typically required in Massachusetts include, but are not limited to, a Chapter 91 Permit/License, Massachusetts Environmental Protection Act (MEPA) review, Wetlands Protection Act Order of Conditions, and/or Aquaculture Certification*. Applicants should also be aware that USACE may not be able to render a permit decision in the event the proposed activity is denied by another local, state and/or federal agency.*

### 4. Procedures for Self-Verification (SV) Eligible Projects

If the activity is eligible for an SV, the Self-Verification Notification (SVN) must be completed prior to the start of project construction and submitted to USACE within 30 days of commencing work. The purpose of the SVN is to provide applicants with a tool to assist them when determining if the activity as proposed is SV-eligible. The following GPs do not require submission of the SVN: GP 1 (SV #1), GP 3 (SV #2-3), GP 4 (SV #2), GP 11, GP 12 (note #2), GP 14 (see note), GP 15 (see note), and GP 24 (SV #3). **For the activities not listed above, the SVN must be completed prior to the start of work and be kept on site at all times during project construction.** The applicant shall not begin work for SV-eligible activities until they have completely verified the bulleted items below.

Digital submittals by email are **strongly encouraged** to facilitate the most efficient processing of the SVN submittal. Please communicate with USACE staff if you are unable to provide a digital copy. Addresses are cenae-r-ma-sv@usace.army.mil (email) or Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751 (mail).

*Eligible SV Activities:*

- Are subject to USACE jurisdiction (see GC 2); and
- Qualify for one or more of the GPs within this document (Section III); and
- Meet the GCs within this document (Section IV); and

- When required, are supported by a complete SVN (Appendix C); and
- Receive all other required local, State, and/or Federal approvals.

## 5. Procedures for Pre-Construction Notification (PCN) Eligible Projects

For activities that require a PCN, an application to and written authorization from USACE is required. *No work requiring a PCN may proceed until the applicant receives written authorization from USACE verifying that the activity is authorized.* The verification letter may include special conditions that the applicant must comply with. When possible, it is *highly* recommended that PCN application materials are submitted at least 90 days before the target start date to allow for USACE evaluation and any necessary agency consultations. PCN applications shall demonstrate in writing how the proposed activity complies with all GCs, as applicable to their activity.

Digital submittals by email are **strongly encouraged** to facilitate the most efficient processing of the PCN application. Please communicate with USACE staff if you are unable to provide a digital copy. Addresses are cenae-r-ma@usace.army.mil or Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, MA 01742-2751 (mail).

*Eligible PCN Activities:*

- Are subject to USACE jurisdiction (see GC 2); and
- Qualify for one or more of the GPs within this document (Section III); and
- Meet the GCs within this document (Section IV); and
- Comply with the Mitigation Standards within this document (Section V); and
- Are supported by a complete PCN document (Appendix B); and
- When required, are supported by the submittal of project information to the appropriate parties identified in Appendix A; and
- Receive all other required local, State, and/or Federal approvals.

## 6. Interagency Review Procedures

The USACE reserves the opportunity to coordinate PCN activities with Federal and State agencies to ensure that the proposed activity results in no more than a minimal impact to the aquatic environment. In some cases, USACE may require project modifications involving avoidance, minimization, and/or compensatory mitigation for unavoidable impacts to ensure the net effects of a project are minimal. The USACE determines, after review and coordination with the agencies and/or the applicant, if PCN applications:

a. Meet the terms and conditions of the GP as proposed;
b. Require additional information;
c. Require avoidance, minimization, compensatory mitigation, construction sequencing, project modification, or other special conditions to avoid or minimize adverse impacts to the aquatic environment;
d. Require individual permit review regardless of whether the terms and GCs of these GPs are met, based on concerns for the aquatic environment or any other factor of the public interest (see Section 9 below).

For activities requiring a PCN, the applicant must wait for written authorization from USACE before commencing activities in waters of the U.S. Beginning work for PCN required activities without a USACE written authorization is a violation of these GPs, and the terms and conditions of this document. The applicant may be subjected to an enforcement action by USACE and/or the Environmental Protection Agency (EPA).

**7. Construction of Solid Fill Structures and Fills Along the Coastline or Baseline from Which the Territorial Sea is Measured.**

Projects involving the construction of solid fill structures or discharge of fill that may extend beyond the coastline or the baseline from which the territorial sea is measured (i.e., mean low water) will require a PCN. The USACE will submit a description of the proposed work and a copy of the plans to the Solicitor, Department of the Interior, Washington, DC 20240, and request comments concerning the effects of the proposed work on the outer continental rights of the United States. These comments will be included in the administrative record of the application. After completion of permit review, the record will be forwarded to the Chief of Engineers. The decision on the application will be made by the Secretary of the Army after coordination with the Attorney General.

**8. Emergency Activities**

Per 33 CFR 325.2(e)(4), an emergency is limited to a situation that would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process an application under standard procedures. Emergency work shall be limited to that which is necessary to stabilize and secure the situation. Additional work needed for final repairs shall not be completed until approval is obtained through the appropriate, non-emergency process. Emergency work is subject to the same terms and conditions of these GPs as non-emergency work, and similarly, must qualify for authorization under these GPs; otherwise, an IP is required. *See GP 25 Emergency Situations for additional information.*

**9. Individual Permit**

Projects that do not meet the terms and conditions of this GP may require review as an IP (33 CFR 325.5 (b)). Proposed work in this category will require a separate Federal application for an individual permit from USACE (33 CFR 325.1). In addition, USACE retains discretionary authority on a case-by-case basis to elevate GP-eligible activities to an IP based on concerns for the environment or any other factor of the public interest (33 CFR 320.4 (a)). Applicants are required to submit the appropriate application materials directly to USACE as early as possible to expedite the permit review process. General information and application forms can be obtained at our website or by contacting our office at cenae-r-ma@usace.army.mil or (978) 318-8338. Individual 401 WQC and/or CZMA Federal consistency concurrence from the appropriate MA agencies are required before USACE can issue an individual permit. Applying for an IP does not relieve the applicant from their obligation to obtain all required Federal, State and/or local approvals.

**10. Compliance**

Applicants shall ensure compliance with all applicable GPs in Section III, GCs in Section IV, and any special conditions included in USACE verification letters. Noncompliance with these GPs, GCs, and special conditions may subject the applicant to criminal, civil, or administrative penalties, and/or an ordered restoration, and/or the permit may be modified, suspended or revoked by USACE. The USACE will consider any activity requiring USACE authorization to be noncompliant if that activity does not comply with all GP terms and conditions at all times, including while the project is under construction and when work is completed.

## SECTION III. MASSACHUSETTS GENERAL PERMITS

Applicants are encouraged to review Sections I & II prior to submitting an application to confirm that the activity as proposed complies with all terms and conditions of the 2023 MA GPs. Applicants are also encouraged to review the definitions in Section VII, Definitions & Acronyms, of this document. Several terms are frequently used throughout the GPs, and it is important for the reader to understand these terms. If seeking verification for an activity previously verified under the 2018 MA GPs, please contact the USACE to discuss permitting needs in advance of submitting an application.

General Permits

1. Aids to Navigation and Temporary Recreational Structures
2. Maintenance
3. Moorings
4. Structures in Navigable Waters of the U.S.
5. Boat Ramps and Marine Railways
6. Utility Lines, Oil or Natural Gas Pipelines, Outfall Or Intake Structures, and Appurtenant Features
7. Dredging, Disposal of Dredged Material, Beach Nourishment, Rock Removal and Rock Relocation
8. U.S. Coast Guard Approved Bridges
9. Bank and Shoreline Stabilization
10. Aquatic Habitat Restoration, Enhancement, and Establishment Activities
11. Fish and Wildlife Harvesting and Attraction Devices and Activities
12. Response Operations, Oil and Hazardous Substances
13. Cleanup of Hazardous and Toxic Waste
14. Scientific Measurement Devices
15. Survey Activities
16. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
17. Residential, Commercial and Institutional Developments, and Recreational Facilities
18. Aquaculture
19. Mining Activities
20. Living Shorelines
21. Agricultural Activities
22. Reshaping Existing Drainage Ditches, Construction of New Ditches, and Mosquito Management
23. Linear Transportation Projects and Wetland/Stream Crossings
24. Temporary Construction, Access, and Dewatering
25. Emergency Situations

**GP 1. AIDS TO NAVIGATION AND TEMPORARY RECREATIONAL STRUCTURES (Authority: §10)**

(a) The placement of aids to navigation and regulatory markers that are approved by and installed in accordance with the requirements of the U.S. Coast Guard (USCG). See 33 CFR, Part 66; and (b) Temporary buoys, markers, and similar structures placed for recreational use during specific events such as water skiing competitions and boat races or seasonal use. See GC 16.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. Aids to navigation and regulatory markers approved by and installed in accordance with the requirements of the USCG.<br><br>2. Temporary buoys, markers and similar structures that are: (a) placed for recreational use during specific events and removed within 30 days after event; or (b) placed during winter events on ice and removed before spring thaw. These structures must be authorized by the local harbormaster, not located within an FNP or its buffer zone, and not located in saltmarsh or tidal vegetated shallows. | 1. Impacts in saltmarsh or tidal vegetated shallows.<br><br>2. Activities that are not SV eligible. |

Note: An SVN submittal to USACE is not required for work authorized under SV #1 above.

**GP 2. MAINTENANCE (Authorities: §10 and §404)**

Repair, rehabilitation, or replacement of any previously authorized[1], currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3 (activities occurring before certain dates), provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction technique requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the activities above. Maintenance dredging and beach nourishment are not eligible under GP 2 (see GP 7). Stream crossing modifications (including sliplining), replacements or extensions are not eligible under GP 2 (see GPs 6, 17, 23). *See GP 25 Emergency Situations for expedited review of emergency activities.*

**Not authorized under GP 2 (IP required):** (a) Permanent impacts in >1 acre in non-tidal waters and/or wetlands; or (b) Permanent impacts >1/2 acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; or (c) Temporary impacts >1 acre in tidal waters; >5000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >1000 SF in vegetated shallows; (d) New stream channelization or stream relocation projects (e.g., those in response to storm or flood events).

**Self-Verification Eligible**

Maintenance activities that meet all of the following terms:

1. In non-tidal waters, the combined permanent and temporary impacts extending beyond the original footprint are ≤5,000 SF[2] and not located in vegetated shallows or riffle and pool complexes.

2. In tidal waters, the combined permanent and temporary impacts extending beyond the original footprint are ≤5,000 SF, ≤1,000 SF in mudflats and/or natural rocky habitat, and not located in saltmarsh and tidal vegetated shallows.

3. Minor deviations in the repair, rehabilitation, or replacement of previously authorized, currently serviceable structures or fills.

4. Bulkhead replacement in tidal and non-tidal waters via installation of new bulkhead within 18 inches of the existing bulkhead and associated backfill.

5. Drawdown of an impoundment for dam/levee repair provided it does not exceed 18 months and one growing season (April through September).

**Pre-Construction Notification Required**

1. Discharges associated with removal of accumulated sediments and debris in the vicinity of existing structures, including intake and outfall structures and associated canals.

2. The removal of sediment outside the immediate vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) that is ≥200 linear feet. This activity is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions existing when the structure was built.

3. Dam and flood control or levee repair, rehabilitation, or replacement involves:
   a. A change in the flood elevation or permanent water surface elevation of the impoundment; or
   b. Drawdown of impoundment for construction exceeding one growing season (see SV eligible #5);
   c. Any modification that changes the character, scope, or size of the original fill design; or
   d. Does not meet SV eligible 1-7.

4. Installation of steel piles, including steel sheet piles, that cannot be done in the dry and where NOAA-ESA listed species are mapped as present.

[1] Some maintenance activities may not be subject to regulation under Section 404 of the CWA in accordance with 33 CFR 323.4(a)(2). Per 33 CFR 330.3, Vested dates are: a) Work performed and structures installed before December 18, 1968 (Section 10); and b) Fill placed before July 25, 1975 (Section 404).
[2] This excludes dam projects that may require a temporary drawdown with impacts >5,000 SF in non-tidal waters. Instead, the drawdown shall comply with SV #5 to be eligible under Self-Verification.

| | |
|---|---|
| 6. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill.<br><br>7. Work to previously approved tide gates not affecting upstream tidal resource areas. | 5. Activities located in the Connecticut River or Merrimack River, unless they are completed in the dry or when the tide is waterward of the work area.<br><br>6. Activities on USACE properties & USACE-controlled easements.<br><br>7. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible. |
| Notes:<br>1. This authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the CWA §404(f) exemption for maintenance. See 33 CFR 323.4(a)(2). Prior USACE permits may have included authorization to maintain the activity, in which case authorization under this GP is not necessary.<br>2. See GC 22 for information on temporary construction mats. | |

**GP 3. MOORINGS (Authority: §10)**

New moorings and mooring fields; the relocation of previously authorized moorings; expansions, boundary reconfigurations or modifications of previously authorized mooring fields; and maintenance and replacement of moorings.

**Not authorized under GP 3 (IP required):** (a) Moorings or mooring fields converted to or associated with a new boating facility[1]; or (b) Moorings in a USACE Federal Navigation Anchorage or USACE Federal Navigation Channel, except municipal-operated mooring fields.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. New or relocated moorings that meet all the following terms:<br>a. Authorized by a local harbormaster/ municipality under MGL Chapter 91 §10A; and<br>b. No interference with navigation; and<br>c. Single boat, single-point and non-commercial; and<br>d. Not associated with a boating facility, and<br>e. Neither placed within nor impact tidal vegetated shallows (e.g., eelgrass); and<br>f. Not located within a USACE Federal navigation project (FNP) or the FNP buffer zone.<br><br>2. Existing, authorized moorings are converted from traditional moorings to low impact mooring technology (see note below) and/or helical anchors.<br><br>3. Maintenance and replacement of moorings authorized by the USACE. | 1. New mooring fields; or expansions, boundary reconfigurations or modifications of existing, authorized mooring fields.<br><br>2. Moorings located such that they, and/or vessels docked or moored at them, are within the buffer zone of the horizontal limits of a Federal Anchorage. The buffer zone is equal to 3 times the authorized depth of that channel (see GC 15).<br><br>3. New individual moorings located in saltmarsh, mudflats, natural rocky habitat, and tidal vegetated shallows. Locating moorings these areas should be avoided to the maximum extent practicable. If these areas cannot be avoided, plans should show conservation mooring or low-impact mooring systems that prevent mooring chains from resting or dragging on the bottom substrate at all tides, where practicable. USACE may require a survey in areas previously mapped as containing eelgrass or within 100 ft. of existing eelgrass beds to document presence or absence of eelgrass and to determine the appropriate type and amount of compensatory mitigation for impacts to eelgrass.<br><br>4. Replacement moorings located in tidal vegetated shallows.<br><br>5. Moorings that are not SV eligible and do not require an IP. |

Notes:

1. Low impact mooring systems, including conservation moorings, are encouraged to minimize impacts of chain scouring from conventional moorings during the tidal cycle.
2. An SVN submittal to USACE is not required for work authorized under SV #2-3 above.

[1] Boating facilities are marinas, yacht clubs, boat clubs, boat yards, dockominiums, town facilities, land/homeowner's associations, etc. that provide for a fee, rent or sell mooring or docking space. Not classified as boating facilities are municipal moorings or municipal mooring fields that charge an equitable user fee based only on the actual costs incurred.

**GP 4. STRUCTURES IN NAVIGABLE WATERS OF THE U.S. (Authority: §10 & §404)**

New, expansions, reconfigurations or modifications of structures for navigational access in waters of the U.S. including but not limited to temporary/seasonal or permanent pile and pole-supported piers, floats, stairs, shore outhauls, and boat and float lifts.

**Not authorized under GP 4 (IP required):** (a) Structures associated with a new boating facility; (b) Structures in a USACE Federal anchorage or channel; or (c) Artificial reefs.

**Self-Verification Eligible**

1. Private, non-commercial piers, floats and lifts that meet all the following terms:

a. Piers and floats in: (i) Tidal waters total ≤600 SF combined; and (ii) Non-tidal navigable waters of the U.S. total ≤600 SF combined; and

b. Piers are ≤4 feet wide and ≥6 feet above the marsh substrate (the height is measured from the marsh substrate to the bottom of the lowest longitudinal support); and

c. Floats and lifts in tidal waters and non-tidal navigable waters of the U.S. are ≥24 inches above the substrate during all tidal cycles. Float stops are preferred when site conditions warrant them (i.e., low tide exposes substrate), and skids can only be used in areas where piles are not feasible and on sandy or hard bottom substrates; and

d. Piers, floats and lifts: (i) Are ≥25 feet from previously mapped or existing vegetated shallows, or riparian property line extensions; (ii) Extend ≤25% of the waterway width in non-tidal navigable waters of the U.S. or MHW in tidal navigable waters of the U.S.

e. Installation of ≤12-inch diameter timber piles. Installation of ≥12-inch diameter piles of any material type when installed in the dry.

2. Fenders and similar structures.

**Pre-Construction Notification Required**

1. Shore outhauls.
2. Expansions, modifications, or new reconfiguration zones at any authorized boating facility.
3. New, expansions, reconfigurations, reconfiguration zones, or modifications of structures that provide public, community or government recreational uses such as boating, fishing, swimming, access, etc.
4. Installation of steel piles, including steel sheet piles, that cannot be done in the dry and where NOAA-ESA listed species are mapped as present.
5. Located within the buffer zone of the horizontal limits of an FNP (GC 15).
6. Miscellaneous structures.
7. Impacts in tidal vegetated shallows.
8. Structures that are not SV eligible and do not require an IP.

Notes:

1. See GC 19 regarding pile driving and pile removal in navigable waters and
2. See GC 20 regarding time of year restrictions in tidal waters.
3. Boating facilities are facilities that provide for a fee, rent, or sell mooring space, such as marinas, yacht clubs, boat clubs, boat yards, town facilities, dockominiums, etc. Pile supported structures with no discharges of dredged or fill material are not regulated by USACE in non-navigable waters.
4. A SVN submittal to USACE is not required for SV #2 above.

**GP 5. BOAT RAMPS AND MARINE RAILWAYS (Authorities: §10 and §404)**

Activities required for the construction of boat ramps and marine railways, including excavation and fill.

**Not authorized under GP 5 (IP required):** (a) Permanent impacts that are >1 acre in non-tidal waters of the U.S., >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows[1]; or (c) dredging in navigable waters of the U.S. (see GP 7).

| Self-Verification Eligible | Pre-Construction Notification Required |
|---|---|
| 1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows. | 1. Boat ramps are located within 25 feet of property line extensions unless the properties are owned by the same owner. The USACE may require a letter of no objection from the abutter(s). |
| 2. In tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) ≤1,000 SF in mudflats and/or natural rocky habitat, and (c), not located in saltmarsh and tidal vegetated shallows. | 2. Activities that are not eligible for SV and do not require an IP. |

**GP 6. UTILITY LINES, OIL OR NATURAL GAS PIPELINES, OUTFALL OR INTAKE STRUCTURES, AND APPURTENANT FEATURES (Authorities: §10 & §404)**

Activities required for: (a) The construction, maintenance, repair or removal of utility lines, oil or natural gas pipelines[1], outfall or intake structures[2], and appurtenant features including the associated excavation, backfill, or bedding for these structures. (b) The construction, maintenance, or expansion of substations and other appurtenant facilities associated with a utility line, oil or natural gas pipeline, and outfall or intake structure in non-tidal waters of the U.S.; and (c) The construction and maintenance of foundations for overhead utility line towers, poles, and anchors in tidal and non-tidal waters of the U.S., provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible. This GP authorizes the construction of access roads to facilitate construction of the above activities provided the activity, in combination with all other activities included in one single and complete project, does not exceed the thresholds identified below (IP required). Access roads used solely for construction of the utility line must be removed upon completion of the work. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the activities above.[3]

**Not authorized under GP 6 (IP required):** (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters of the U.S.; >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows; (c) Stormwater treatment or detention systems, or subsurface sewage disposal systems in waters of the U.S.; or (d) New tide gates that do not meet SV criteria below.

**Self-Verification Eligible**

1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows.

2. In tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) ≤1,000 SF in mudflats and/or natural rocky habitat, and (c), not located in saltmarsh and tidal vegetated shallows.

3. Intake structures that are dry hydrants used exclusively for firefighting activities with no stream impoundments.

4. New tide gates on outfall structures for pipes conveying stormwater and/or industrial NPDES-permitted discharges from waters that are not waters of the U.S.

**Pre-Construction Notification Required**

1. New outfall and/or intake structures.

2. Unconfined work or silt producing activities in streams with diadromous fish.

3. Submarine cables, conduits, or pipelines that occur in, over or under navigable waters of the U.S.

4. Stream channelization, relocation, impoundment, or loss of streambed occurs.

5. The activity is placed within and runs parallel to or along a streambed within waters of the U.S.

6. There is a permanent change in preconstruction contours in waters of the U.S.

7. Installation of utility lines or gas/oil pipelines using trench excavation where material is temporarily sidecast into waters of the U.S. for >3 months. Applicants must demonstrate how the material would not be dispersed by currents or other forces.

8. Activities that are not SV eligible and do not require an IP.

[1] See the definitions of a “utility line” and “oil or natural gas pipeline” in Section VII.
[2] Outfall structures must be in compliance with regulations issued under the National Pollutant Discharge Elimination System Program (Section 402 of the Clean Water Act).
[3] Temporary impacts shall comply with all GCs, including GC 32 Utility Line Installation and Removal.

**GP 7. DREDGING (Authority: §10), DISPOSAL OF DREDGED MATERIAL (Authorities: §10, §404), BEACH NOURISHMENT (Authorities: §10 & §404), ROCK REMOVAL (Authority: §10) AND ROCK RELOCATION (Authorities: §10 & §404)**

New, improvement and maintenance dredging (see notes below) including: (a) Disposal of dredged material at a confined aquatic disposal cell, beach nourishment location, near shore site, or ocean disposal site selected under Section 404 of the Clean Water Act pursuant to the 404(b)(1) Guidelines, provided the dredged material meets the requirements for such disposal; (b) Beach nourishment not associated with dredging; and (c) Rock removal and relocation for navigation.

**Not authorized under GP 7 (IP required):** (a) Dredging where ocean disposal is required for the disposal of dredged material (Section 103); New dredging >½ acre; ≥10,000 CY; >1000 SF permanent impacts to intertidal areas, saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF permanent impacts to tidal vegetated shallows; (b) Maintenance or improvement dredging and/or disposal with >1 acre of impacts to intertidal areas, saltmarsh, mudflats, riffle and pool complexes, or non-tidal vegetated shallows; (c) New dredging where the primary purpose is sand mining for beach nourishment; (d) Beach scraping; (e) Boulder removal and relocation for navigation >½ acre; or (f) Blasting.

**Self-Verification Eligible**

1. Maintenance dredging of previously dredged areas, with upland disposal, that meet all of the following terms:
   a. Dredged area ≤1/2 acre; and
   b. Activities comply with GC 20, TOY Restrictions. The time-of-year restriction(s) stated in Appendix B of the MA Division of Marine Fisheries (DMF) Technical Report TR-47[1] can apply instead if the general TOY restriction if a TOY is provided for a specific waterbody and is less restrictive. This is to protect endangered species, EFH, and other species; and
   c. The dredge footprint is located >25' from salt marsh or >100' from vegetated shallows; and
   d. Combined permanent and temporary impacts that are (i) ≤1,000 SF in mudflats or natural rocky habitat, or (ii) ≤5,000 SF within intertidal habitat and areas containing shellfish (an area contains shellfish unless: it is verified that minimal shellfish are present per the local shellfish constable or a shellfish survey; or it is not mapped as a MassGIS shellfish suitability area).
   e. No return water from upland disposal areas.

2. Boulder relocation with ≤1,000 SF of impacts, relocated to a similar depth and substrate.

**Pre-Construction Notification Required**

1. Maintenance dredging where the primary purpose is sand mining for beach nourishment.

2. New dredging and associated disposal ≤1/2 acre or <10,000 cubic yards.

3. Improvement dredging.

4. Beach nourishment in waters of the U.S. not associated with dredging.

5. Activities that are located in saltmarsh and tidal vegetated shallows.

6. Dredging in a Federal Navigation Project or within the buffer zone (see GC 15).

7. Activities that are not eligible for SV and do not require an IP.

Notes:

1. See Section VII for definitions of improvement and maintenance dredging.
2. For PCN activities, the USACE may waive or adjust the time of year requirement on a case-by-case basis after consultation with resource agencies.
3. Disposal site of any dredged material must be identified prior to obtaining USACE authorization.
4. Contact the USACE if a ten-year authorization to maintain an area is desired.

[1] The MA DMF Technical Report TR-47: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/

**GP 8. U.S. COAST GUARD APPROVED BRIDGES (Authorities: §404)**

Discharges of dredged or fill material incidental to the construction and modification of bridges across navigable waters of the U.S., including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided that the USCG authorizes the construction of the bridge structure under Section 9 of the Rivers and Harbors Act of 1899 or other applicable laws. A USCG Authorization Act Exemption or a Surface Transportation and Uniform Relocation Assistance Act (STURRA) (144h) exemption do not constitute USCG authorization.

**Not authorized under GP 8 (IP Required):** Causeways and approach fills (see GP 23).

| Self-Verification Eligible | Pre-Construction Notification Required |
|---|---|
| 1. Discharges of dredged or fill material that are incidental to the construction of bridges across navigable waters and meet all of the following:<br>a. Combined permanent and temporary impacts that are ≤5,000 SF.<br>b. Combined permanent and temporary impacts that are ≤1,000 SF in mudflats and natural rocky habitat.<br>c. Not located in saltmarsh and tidal vegetated shallows. | 1. Activities on USACE properties & USACE controlled easements.2. Installation of steel piles, including steel sheet piles, that cannot be done in the dry and where NOAA-ESA listed species are mapped as present.<br>3. Activities that are not eligible for SV and do not require an IP. |

Notes:

1. GP 8 is not applicable to bridges over inland waters or wetlands that are not tidally influenced or regulated as navigable under Section 10.
2. See eligibility criteria for GPs 2 & 23 for projects that are not subject to USCG regulations.

**GP 9. BANK AND SHORELINE STABILIZATION (Authorities: §10 & §404)**

Bank stabilization activities necessary for erosion protection along the banks of lakes, ponds, streams, estuarine and ocean waters, and any other open waters. Includes bulkheads, seawalls, riprap, revetments, living seawalls, or slope protection & similar structures, specifically for the purpose of shoreline protection. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to conduct the activities above.

Activities must meet the following criteria: (a) No material is placed in excess of the minimum needed for erosion protection; (b) No material is of a type, or is placed in any location, or in any manner, that will impair surface water flow into or out of any waters of the U.S.; (c) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored native trees and treetops may be used in low energy areas); (d) Native plants appropriate for current site conditions, including salinity, must be used for bioengineering or vegetative bank stabilization; (e) The activity is not a stream channelization activity; and (f) The activity must be properly maintained, which may require repairing it after severe storms or erosion events. This GP authorizes those maintenance and repair activities if they require authorization. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats, necessary to construct the bank stabilization activity. See GP 20 for living shoreline stabilization structures or fills.

**Not authorized under GP 9 (IP required):** (a) New bank stabilization >500 feet in total length (>1,000 linear feet in total length when necessary to protect transportation infrastructure) or permanent loss of saltmarsh >1,000 SF, unless the District Engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects (an exception is for bulkheads – the district engineer cannot issue a waiver for a new bulkhead that is >1,000 feet in length along the bank); (b) Stream channelization or relocation activities; or (c) Breakwaters, groins or jetties.

**Self-Verification Eligible**

1. Activities in tidal and non-tidal waters that are:
   a. <200 feet in length.
   b. <400 feet in length when necessary to protect transportation infrastructure.
   c. ≤1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW or HTL.
   d. Not located in non-tidal wetlands, saltmarsh, vegetated shallows.

**Pre-Construction Notification Required**

1. Activities in tidal and non-tidal waters that are:
   a. ≥200 feet to ≤500 feet in total length. Activities >500 feet in total length must have a written waiver from USACE.
   b. ≥400 feet to ≤1,000 feet in total length when necessary to protect transportation infrastructure. Activities >1,000 feet in total length must have a written waiver from USACE.
   c. >1 cubic yard of fill per linear foot average along the bank waterward of the plane of OHW or HTL.
   d. Located in non-tidal wetlands, saltmarsh, vegetated shallows.
2. Activities with permanent loss of tidal or non-tidal waters that is (a) ≥5,000 SF or (b) ≥1,000 SF in mudflats and natural rocky habitat.
3. Activities that are (a) located in the Connecticut River or Merrimack River and/or (b) require installation of steel piles/steel sheet piles that cannot be done in the dry where NOAA ESA-listed species are mapped as present.
4. Activities on USACE properties & USACE-controlled easements.
5. Activities that require grouted riprap and/or poured/unformed concrete.
6. Activities that are not eligible for SV and do not require an IP.

Note: The applicant shall comply with GC 24. This includes utilization of bioengineering techniques in lieu of hard armoring to the maximum extent practicable as site conditions allow.

**GP 10. AQUATIC HABITAT RESTORATION, ENHANCEMENT, AND ESTABLISHMENT ACTIVITIES (Authorities: §10 and §404)**

Activities for the restoration, enhancement and establishment of non-tidal and tidal wetlands and riparian areas, including invasive, non-native or nuisance species control; the restoration and enhancement of non-tidal streams and other non-tidal open waters; the relocation of non-tidal waters, including non-tidal streams & associated wetlands for reestablishment of a natural stream morphology and reconnection of the floodplain; the restoration and enhancement of shellfish, finfish and wildlife; and the rehabilitation or enhancement of tidal streams, tidal wetlands and tidal open waters; provided those activities result in net increases in aquatic resource functions and services. See GP 9 for bank and shoreline stabilization. See GP 20 for living shorelines.

**Not authorized under GP 10 (IP required):** Stream channelization activities and artificial reefs.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. In tidal and non-tidal waters excluding tidal vegetated shallows, the combined permanent and temporary impacts are ≤5,000 SF.<br><br>2. Eelgrass (vegetated shallows) planting and transplanting ≤100 SF in tidal waters. | 1. In tidal and non-tidal waters excluding tidal vegetated shallows, the combined permanent and temporary impacts are >5,000 SF.<br><br>2. Eelgrass (vegetated shallows) planting and transplanting >100 SF in tidal waters.<br><br>3. Permanent water impoundments, dam removal, fish ladders, or tide gates.<br><br>4. Stream relocation, impoundment, or loss of streambed occurs.<br><br>5. Runneling projects with the purpose of restoring saltmarsh by removing excess water that ponds on the saltmarsh surface.<br><br>6. The conversion of: (a) a stream or natural wetlands to another aquatic habitat type (e.g., stream to wetland or vice versa, wetland to pond, etc.) or uplands, (b) one wetland type to another (e.g., forested wetland to an emergent wetland).<br><br>7. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving permanent or temporary impacts unless they are performed <5 feet waterward from OHW or HTL and in the dry. This is to protect endangered species.<br><br>8. Activities on USACE properties & USACE-controlled easements.<br><br>9. Activities that are not eligible for SV and do not require an IP. |

Notes:

1. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type.
2. See RGL 18-01 for guidance on removal of obsolete dams and other structures from rivers and streams. https://www.usace.army.mil/missions/civil-works/regulatory-program-and-permits/guidance-letters/
3. An ecological reference site may be used for a design basis of the restoration activity. The reference site should possess characteristics of an intact aquatic habitat or riparian area that exists in the region. The reference site shall represent the target habitat type of the proposed activity. A reference site may be required at the discretion of USACE.

**GP 11. FISH AND WILDLIFE HARVESTING AND ATTRACTION DEVICES AND ACTIVITIES (Authorities: §10 and §404)**

Fish and wildlife harvesting and attraction devices and activities in waters of the U.S. such as pound nets, crab traps, crab and shellfish dredging, eel pots, lobster traps, duck blinds, clam and oyster digging, fish aggregating devices, and small fish attraction devices such as open-water fish concentrators (sea kites, etc.).

**Not authorized under GP 11 (IP required):** Artificial reefs; or new, or expansions of, impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area >½ acre.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤1/2 acre, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows.<br><br>2. Fish and wildlife harvesting and attraction devices and activities that do not require a PCN or IP. | 1. Pound nets, impoundments or semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster with an impounded area ≤½ acre, fish aggregating devices, or small fish attraction devices.<br><br>2. Devices and activities that are located in tidal vegetated shallows, mud flats, or saltmarsh.<br><br>3. Devices and activities that do not require an IP. |

Note: An SVN submittal to USACE is not required for work authorized under GP 11.

**GP 12. RESPONSE OPERATIONS, OIL AND HAZARDOUS SUBSTANCES (Authorities: §10 & §404)**

(a) Activities conducted in response to a discharge or release of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) including containment, cleanup, and mitigation efforts, provided that the activities are done under either: (i) The Spill Prevention, Control and Countermeasure Plan required by 40 CFR 112.3; (ii) The direction or oversight of the Federal on-scene coordinator designated by 40 CFR 300; or (iii) Any approved existing State, regional or local contingency plan provided that the Regional Response Team concurs with the proposed response efforts or does not object to the response effort; (b) Activities required for the cleanup of oil releases in waters of the U.S. from electrical equipment that are governed by EPA's polychlorinated biphenyl (PCB) spill response regulations at 40 CFR 761; (c) Booms placed in navigable waters of the U.S. for oil and hazardous substance containment, absorption and prevention; and (d) The use of structures and fills for spill response training exercises. Wetlands, vegetated shallows, mudflats, and riffle and pool complexes should be restored in place at the same elevation.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. Activities are conducted in accordance with (a) or (b) above that are not planned or scheduled, but an emergency response (see Note 1).<br><br>2. Booms placed in navigable waters of the U.S. for oil and hazardous substance containment, absorption and prevention.<br><br>3. Temporary impacts for spill response training exercises ≤5000 SF in non-tidal waters and ≤1000 SF in tidal waters with no impacts to wetlands, saltmarsh, mudflats, or vegetated shallows.<br><br>4. Temporary structures in tidal waters with no impacts to wetlands, saltmarsh, mudflats, vegetated shallows, or riffle and pool complexes and in place ≤30 days. | 1. Activities (a) or (b) above are planned or scheduled, not an emergency response; or<br><br>2. Activities that are not eligible for SV and do not require an IP. |

Notes:

1. For emergency response activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, Merrimack River from the Essex Dam to the mouth, and remaining tidal waters that are not rivers, the permittee must contact the USACE at (978) 318-8338 before or as soon as possible after the work authorized under GP 12(a) - (c) commences for the USACE to address effects under the Endangered Species Act.
2. An SVN submittal to USACE is not required for booms used for spill prevention, or properly contained and cleaned de minimus oil or hazardous substance discharges into navigable waters of the U.S.

**GP 13. CLEANUP OF HAZARDOUS AND TOXIC WASTE (Authorities: §10 and §404)**

Specific activities required to affect the containment, stabilization, or removal of hazardous or toxic waste materials, including court ordered remedial action plans or related settlements, which are performed, ordered or sponsored by a government agency with established legal or regulatory authority.

**Not authorized under GP 13:** (a) Establishment of new disposal sites; or (b) Expansion of existing sites used for the disposal of hazardous or toxic waste.

| Self-Verification Eligible | Pre-Construction Notification Required |
|---|---|
| 1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in vegetated shallows and riffle and pool complexes. | 1. In non-tidal waters, the combined permanent and temporary impacts are (a) >5,000 SF, and (b) located in vegetated shallows and riffle and pool complexes.<br>2. Permanent and temporary impacts in tidal waters or navigable waters of the U.S.<br>3. Stream channelization, relocation, impoundment, or loss of streambed occurs.<br>4. Activities that are not eligible for SV and do not require an IP. |

Notes:

1. Wetlands, vegetated shallows, mudflats, and riffle and pool complexes should be restored in place at the same elevation to the maximum extent practicable.
2. Activities undertaken entirely on a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site by authority of CERCLA, are not required to obtain permits under Section 404 of the CWA or Section 10 of the Rivers and Harbors Act.

**GP 14. SCIENTIFIC MEASUREMENT DEVICES (Authorities: §10 and §404)**

Scientific measurement devices for measuring and recording scientific data, such as staff gauges, tide and current gauges, meteorological stations, water recording and biological observation devices, water quality testing and improvement devices, and similar structures. Also eligible are small weirs and flumes constructed primarily to record water elevation, flow and/or velocity. Upon completion of the use of the device to measure and record scientific data, the measuring device and any other structures or fills associated with that device (e.g., foundations, anchors, buoys, lines, etc.) must be removed to the maximum extent practicable and the site restored to preconstruction elevations.

**Not authorized under GP 14 (IP required):** (a) Permanent impacts that are >5,000 SF in tidal and non-tidal waters of the U.S.; >1000 SF in tidal saltmarsh, mud flats, riffle and pool complexes; or >100 SF in tidal vegetated shallows; or (b) Temporary impacts in tidal waters that are >1 acre, unless the District Engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows.

**Self-Verification Eligible**

1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) not located in riffle and pool complexes and non-tidal vegetated shallows.

2. In tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) ≤1,000 SF in mudflats and/or natural rocky habitat, (c) not located in saltmarsh and tidal vegetated shallows.

3. Temporary, non-biological sampling devices in waters that do not restrict or concentrate movement of aquatic organisms and will not adversely affect the course, condition, or capacity of a waterway for navigation.

4. Scientific measurement devices, and small weirs and flumes constructed primarily to record water quantity and velocity provided the discharge of fill is limited to 25 cubic yards. These cannot obstruct or restrict the waterway course, condition, capacity, and location.

5. Temporary measuring devices and associated structures (e.g., anchors, buoys, etc.) in tidal and non-tidal waters that do not require a PCN or IP.

**Pre-Construction Notification Required**

1. Biological sampling devices, weirs or flumes, or the activity restricts or concentrates movement of aquatic organisms.

2. Permanent towers located in navigable waters that record and measure scientific data.

3. Devices that are not eligible for SV and do not require an IP.

Note: An SVN submittal to USACE is not required for temporary measuring devices with a footprint of <10 SF, with a profile of <3 feet high measured from the substrate and located in water deeper than -10 feet MLW.

**GP 15. SURVEY ACTIVITIES (Authorities: §10 and §404)**

Survey activities such as soil borings, core sampling, seismic exploratory operations, plugging of seismic shot holes and other exploratory-type bore holes, exploratory trenching, soil surveys, sampling, sample plots or transects for wetland delineations, and historic resources surveys.

**Not authorized under GP 15 (IP required):** (a) Permanent impacts that are >1 acre in tidal and non-tidal waters; >1000 SF in tidal saltmarsh, mud flats, or riffle and pool complexes; or >100 SF in tidal vegetated shallows; or (b) Temporary impacts in tidal waters that are >1 acre, unless the District Engineer waives this criterion by making a written determination concluding that the discharge of dredged or fill material will result in no more than minimal adverse environmental effects; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows.

**Self-Verification Eligible**

1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) not located in riffle and pool complexes and non-tidal vegetated shallows.

2. In tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, (b) ≤1,000 SF in mudflats and/or natural rocky habitat, (c) not located in saltmarsh and tidal vegetated shallows.

**Pre-Construction Notification Required**

1. Exploratory trenching (see Note 2) occurs in waterways (e.g., streams, tidal waters).

2. Activities associated with the recovery of historic resources, and the drilling and discharge of excavated material from test wells for oil and gas exploration.

3. Seismic exploratory operations occur in tidal waters, the Connecticut River from the Turners Falls Dam to the MA/CT border, or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species.

4. Activities that are not eligible for SV and do not require an IP.

Notes:

1. An SVN submittal is not required for wetland delineations, and core sampling conducted for preliminary evaluation of dredge project analysis.
2. For the purposes of GP 15, the term “exploratory trenching” means mechanical land or underwater clearing of the upper soil profile to expose bedrock or substrate for the purpose of mapping or sampling the exposed material.
3. The discharge of drilling mud and cuttings may require a permit under §402 of the CWA.

**GP 16. LAND AND WATER-BASED RENEWABLE ENERGY GENERATION FACILITIES (Authorities: §10 and §404), AND HYDROPOWER PROJECTS (Authority: §10 and §404)**

Structures and work in tidal waters and discharges of dredged or fill material into tidal and non-tidal waters for the construction, expansion, modification or removal of: (a) Land-based renewable energy production facilities (e.g., solar, wind, biomass, geothermal) and their attendant features; (b) Water-based wind or hydrokinetic renewable energy generation projects and their attendant features; and (c) Discharges of dredged or fill material associated with hydropower projects. Attendant features may include, but are not limited to, land-based collection and distribution facilities, control facilities, and parking lots. For each single and complete project in (b) above, no more than 10 generation units (e.g., wind turbines or hydrokinetic devices) are authorized in navigable waters of the U.S. Upon completion of the pilot project (see note 2), the generation units, transmission lines, and other structures or fills associated with the pilot project must be removed to the maximum extent practicable.

**Not authorized under GP 16 (IP required):** (a) Permanent impacts that are >1 acre in non-tidal waters, >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in vegetated shallows; or (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| In non-tidal waters, the combined permanent and temporary impacts for land-based activities are (a) ≤5,000 SF, (b) not located in riffle and pool complexes and non-tidal vegetated shallows. | 1. In non-tidal waters, the combined permanent and temporary impacts for land-based activities are (a) >5000 SF, or (b) located in vegetated shallows or riffle and pool complexes.<br>2. Permanent and temporary impacts in tidal waters.<br>3. Water-based wind or hydrokinetic renewable energy generation projects, and hydropower projects.<br>4. For all activities eligible for authorization under GP 16:<br>a. The activity occurs in tidal waters or in, over or under navigable waters.<br>b. Stream channelization, relocation, impoundment, or loss of streambed occurs.<br>5. Activities that are not eligible for SV and do not require an IP. |

Notes:

1. Utility lines constructed to transfer the energy from the land-based renewable generation or collection facility to a distribution system, regional grid, or other facility may be authorized by GP 6.
2. For the purposes of this GP, the term “pilot project” means an experimental project where the renewable energy generation units will be monitored to collect information on their performance and environmental effects at the project site.

**GP 17. RESIDENTIAL, COMMERCIAL AND INSTITUTIONAL DEVELOPMENTS AND RECREATIONAL FACILITIES (AUTHORITIES: §404)**

Discharges of dredged or fill material into non-tidal waters for the construction or expansion of: (a) Residences and residential subdivisions; (b) Residential, commercial and institutional building foundations and building pads; and (c) Recreational facilities such as playgrounds, playing fields, bikeways, trails, etc. This GP also authorizes attendant features that include, but are not limited to, roads, parking lots, garages, yards, and utility lines, and stormwater management facilities. This GP authorizes attendant features if they are necessary for the use of the project purpose.

**Not authorized under GP 17 (IP required):** (a) Permanent impacts that result in loss of non-tidal waters >1/2 acre; >1000 SF in riffle and pool complexes or vegetated shallows; or (b) Subsurface sewerage disposal systems in non-tidal waters.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. In non-tidal waters, the combined permanent and temporary impacts are (a) <5,000 SF, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows.<br><br>2. Stream channelization or relocation resulting in loss of streambed that is <200 LF. | 1. In non-tidal waters, the combined permanent and temporary impacts are (a) ≥5,000 SF, or (b) located in riffle and pool complexes or non-tidal vegetated shallows.<br><br>2. Stream and wetland crossings that require a PCN per GCs 20 TOY Restrictions and GC 31 Stream Work and Crossings & Wetland Crossings.<br><br>3. Stream channelization or relocation resulting in loss of streambed that is ≥200 LF. Stream impoundment activities of any kind.<br><br>4. Activities on USACE properties & USACE-controlled easements.<br><br>5. Activities that are not SV eligible and do not require an IP. |

Notes:

1. Stream and wetland crossings (permanent and temporary), including those built with construction mats; and modifications (including sliplining), replacements or extensions to existing crossings.
2. See GC 22 for information on temporary construction mats.
3. Subdivisions: For residential subdivisions, the aggregate total loss of waters of United States authorized by this GP cannot exceed 1/2-acre. This includes any loss of waters of the United States associated with development of individual subdivision lots.

**GP 18. AQUACULTURE (Authorities: §10 and §404)**

(a) The installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures into navigable waters of the U.S.; (b) Discharges of dredged or fill material into tidal and non-tidal waters necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting activities; and (c) Shellfish seeding or brushing the flats projects. Any fill material imported to the project from offsite (this is limited to mineral growth medium used in culture trays) shall be clean and of comparable grain size to the native substrate. Activities authorized under this GP must have (a) their MA DMF Aquaculture Certificate letter for licensed shellfish aquaculture sites, (b) documentation that the applicant has coordinated with the U.S. Coast Guard regarding USCG Private Aids to Navigation standards, (c) their MEPA Certificate (if required), and (d) documentation that the applicant has contacted their local authorities (ex. harbormaster, select board, shellfish constable) for authorization of their facility.

**Not authorized under GP 18 (IP required):** (a) New, or expansions of, impoundments and semi-impoundments of tidal and non-tidal waters for the culture or holding of motile species such as lobster with an impounded area >½ acre; (b) Cultivation of a nonindigenous species (see Note 1) unless that species has been previously cultivated in the waterbody; (c) Cultivation of an aquatic nuisance species (see Note 1); (d) Attendant features such as docks, piers, boat ramps (see GP 4); (e) stockpiles, staging areas, or the deposition of shell material back into tidal and non-tidal waters as waste.

**Self-Verification Eligible**

1. In tidal waters, a new lease site area is (a) ≤2-acre, (b) not located in salt marsh, natural rocky habitat, or tidal vegetated shallows.

2. In tidal waters, *expansions* of existing lease sites not to exceed 2 acres for the entire site (e.g. 1 acre lease site increasing to a 2 acre lease site may qualify as SV). A PCN is required for expansions in salt marsh, natural rocky habitat, and tidal vegetated shallows.

3. Cages, racks that are elevated ≥2 feet above the ocean floor with legs within a lease site with ≤4 buoys marking the corners.

4. Floating cage strings with a single connecting line, ≤2 anchors and ≤2 end marker buoys per string within a lease site with ≤4 buoys marking the corners.

5. No activities located within 25 feet of tidal vegetated shallows.

6. Culture only indigenous species.

7. Not located in FNP or within a distance of three times the authorized depth of an FNP (see GC 15).

8. Not located in or impinge upon the value of any National Lands or Federal Properties.

9. Floating upweller docks that total ≤600 SF in area.

**Pre-Construction Notification Required**

1. Discharges of fill material associated with aquaculture >5,000 SF.

2. Research, educational, commercial-viability or experimental aquaculture gear activities >1,000 SF.

3. Kelp or finfish aquaculture.

4. Land-based hatchery intakes >3 inches in diameter.

5. Activities in water depths >10 feet mean low lower water (MLLW).

6. Activities with in-water lines, ropes or chains that are not SV eligible (see #3-4).

7. Activities occur in the Connecticut River from the Turners Falls Dam to the MA/CT border or the Merrimack River from the Essex Dam to the mouth. This is to protect endangered species.

8. New, or expansions of, impoundments and semi-impoundments for the culture or holding of motile species such as lobster with an impounded area ≤1/2 acre.

9. Activities that do not require an IP. Activities that do not require a PCN or an IP may be SV eligible.

Note: The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 defines: (a) nonindigenous species as “any species or other viable biological material that enters an ecosystem beyond its historic range, including any such organism transferred from one country into another”; and (b) aquatic nuisance species as “a nonindigenous species that threatens the diversity or abundance of native species or the ecological stability of infested waters, or commercial, agricultural, aquacultural, or recreational activities dependent on such waters.”

**GP 19. MINING ACTIVITIES (Authorities: §10 and §404)**

Discharges of dredged or fill material into non-tidal waters for mining activities, except for coal mining and metallic mineral mining activities.

**Not authorized under GP 19 (IP required):** (a) Permanent impacts >1 acre in non-tidal waters; or (b) Activities in tidal waters.

| Self-Verification Eligible | Pre-Construction Notification Required |
|---|---|
| In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in riffle and pool complexes, non-tidal vegetated shallows, and streams. | 1. In non-tidal waters, the combined permanent and temporary impacts are (a) >5,000 SF, or (b) located in riffle and pool complexes, non-tidal vegetated shallows, and streams.<br><br>2. The activity occurs in non-tidal navigable waters of the U.S.<br><br>3. Stream channelization, relocation, impoundment, loss of streambed, or discharge of tailings into streams occurs.<br><br>4. Work on USACE properties & USACE-controlled easements.<br><br>5. Activities that are not eligible for SV and do not require an IP. |

**GP 20. LIVING SHORELINES[1] (Authorities: §10 and §404)**

Construction and maintenance of living shorelines to stabilize banks and shores in tidal waters. In non-tidal waters that are not subject to the ebb and flow of the tide, nature-based bank stabilization techniques such as bioengineering and vegetative stabilization may be authorized by GP 9. This GP authorizes those maintenance and repair activities in-kind that are necessary to address changing environmental conditions.

The following terms must be met for both SVs and PCNs as applicable: (a) Coir logs, coir mats, stone, native oyster shell, native wood debris, and other structural materials must be adequately anchored, of sufficient weight, or installed in a manner that prevents relocation in most wave action or water flow conditions, except for extremely severe storms; (b) For living shorelines consisting of tidal fringe wetlands, native plants appropriate for current site conditions, including salinity and elevation, must be used if the site is planted by the permittee; (c) Discharges of dredged or fill material into waters of the U.S., and oyster or mussel reef structures in navigable waters, must be the minimum necessary for the establishment and maintenance of the living shoreline; (d) If sills or other structural materials per PCN #4 must be constructed to protect fringe wetlands for the living shoreline, those structures must be the minimum size necessary to protect those fringe wetlands; (e) The activity must be designed, constructed, and maintained so that it has no more than minimal adverse effects on water and sediment movement between the waterbody and the shore and the movement of aquatic organisms between the waterbody and the shore; and (f) The living shoreline must be properly maintained and monitored, which may require periodic repair of sills, bioengineered components, or replacing sand fills after severe storms or erosion events. Vegetation may be replanted to maintain the living shoreline.

**Not authorized under GP 20 (IP required):** (a) The activity is ≥1000 feet in length along the bank (≥2000 LF both banks) unless waived by the District Engineer; or (b) The activity is >30 feet channel ward of mean low water in tidal waters; or (c) Upland reclamation activities; or (d) Stream channelization or relocation activities; or (e) Breakwaters, groins, jetties, or artificial reefs; or (f) Permanent impacts >1,000 SF in existing saltmarsh; >100 SF in existing tidal vegetated shallows.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. Tidal and non-tidal living shorelines ≤100 LF for each bank (≤200 LF for both banks).<br><br>2. Combined permanent and temporary impacts ≤5,000 SF in tidal waters, excluding existing salt marsh, tidal vegetated shallows, natural rocky habitat, and mudflats. | 1. Tidal and non-tidal living shorelines >100 LF to <1000 LF (>200 LF to <2000 LF for both banks).<br><br>2. Permanent and temporary impacts in existing salt marsh, tidal vegetated shallows, or mudflats.<br><br>3. Work on USACE properties & USACE-controlled easements.<br><br>4. Use of stone sills, native oyster shell, native wood debris, or other structural materials. |

Notes:

1. PCNs require monitoring for a minimum of 5 years in accordance with an approved restoration plan, unless otherwise determined by the USACE. The first year of monitoring will be the first year that the site has been through a full growing period after completion of construction and planting.
2. Applicants are encouraged to obtain a MEPA certificate prior to submitting a USACE permit application.

[1] A living shoreline has a footprint that is made up mostly of native material. It incorporates vegetation or other living, natural "soft" elements alone or in combination with some type of harder shoreline structure (e.g., oyster or mussel reefs or rock sills) for added protection and stability. Living shorelines should maintain the natural continuity of the land-water interface and retain or enhance shoreline ecological processes. Living shorelines must have a substantial biological component, either tidal or lacustrine fringe wetlands or oyster or mussel reef structures.

**GP 21. AGRICULTURAL ACTIVITIES (Authority: §404)**

Discharges of dredged or fill material in non-tidal waters for agricultural activities, including the construction of building pads for farm buildings. Authorized activities include: (a) installation, placement, or construction of drainage tiles, ditches, or levees; mechanized land clearing; land leveling; the relocation of existing serviceable drainage ditches; and similar activities; (b) construction of farm ponds, excluding perennial streams, provided the farm pond is used solely for agricultural purposes; and (c) discharges of dredged or fill material to relocate existing serviceable drainage ditches constructed in non-tidal streams.

**Not authorized under GP 21 (IP required):** (a) Permanent impacts that are >1 acre in non-tidal waters; or >1000 SF in riffle and pool complexes, or non-tidal vegetated shallows; (b) Work in tidal waters; or (c) Construction of farm ponds in perennial streams.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| In non-tidal waters, the combined permanent and temporary impacts are (a) ≤5,000 SF, and (b) not located in riffle and pool complexes and non-tidal vegetated shallows. | 1. In non-tidal waters, the combined permanent and temporary impacts are (a) >5,000 SF, or (b) located in riffle and pool complexes and non-tidal vegetated shallows.<br>2. Activities occur in non-tidal navigable waters of the U.S.<br>3. Stream channelization, relocation, impoundment, loss of streambed, or farm ponds in non-perennial streams occurs.<br>4. Activities that are not eligible for SV and do not require an IP. |

Note: Some discharges for agricultural activities may qualify for an exemption under Section 404(f) of the CWA (see 33 CFR 323.4). This GP authorizes the construction of farm ponds that do not qualify for the CWA §404(f)(1)(C) exemption because of the recapture provision at §404(f)(2).

**GP 22. RESHAPING EXISTING DRAINAGE DITCHES, CONSTRUCTION OF NEW DITCHES, AND MOSQUITO MANAGEMENT (Authorities: §10 and §404)**

Discharges to modify the cross-sectional configuration of currently serviceable drainage ditches constructed in tidal and non-tidal waters, for the purpose of improving water quality by regrading the drainage ditch with gentler slopes, which can reduce erosion, increase growth of vegetation, and increase uptake of nutrients and other substances by vegetation. Also authorized are mosquito reduction activities.

**Not authorized under GP 22 (IP required):** Stream channelization, relocation, impoundments, or loss of streambed.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| ≤500 linear feet of drainage ditch will be reshaped provided excavated material is deposited in an upland area. | 1. >500 linear feet of drainage ditch will be reshaped, excavated material is deposited in a water of the U.S., or the reshaping of the ditch increases the drainage capacity beyond the original as-built capacity or expands the area drained by the ditch as originally constructed (i.e., the capacity of the ditch is not the same as originally constructed or drains additional wetlands or other waters of the U.S.).<br>2. Permanent and temporary impacts in tidal vegetated shallows.<br>3. New ditches or relocation of drainage ditches constructed in waters of the U.S. (i.e., the location of the centerline of the reshaped drainage ditch is not approximately the same as the location of the centerline of the original drainage ditch).<br>4. Activities that are not eligible for SV and do not require an IP. |

Note: Some ditch activities are exempt under Section 404(f) of the CWA (see 33 CFR 323.4).

**GP 23. LINEAR TRANSPORTATION PROJECTS AND WETLAND/STREAM CROSSINGS (Authorities: §10 & §404)**

Activities[1] required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., driveways, roads, highways, railways, trails, airport runways, and taxiways) and attendant features. This GP also authorizes temporary structures, fills, and work, including the use of temporary mats (see Note 1), necessary to construct the linear transportation project.

**Not authorized under GP 23 (IP required):** (a) Permanent impacts for any single and complete project that are >1 acre in non-tidal waters; >½ acre in tidal waters; >1000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows; (c) Non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars (see GP 17); or (d) New tide gates.

**Self-Verification Eligible**

1. In non-tidal waters, the combined permanent and temporary impacts are a) ≤5,000 SF; b) not located in riffle and pool complexes and non-tidal vegetated shallows; and c) meet the Massachusetts River and Stream Crossing Standards

2. Existing crossings (e.g., culverts, elliptical or arch pipes, etc.) are not modified by (a) decreasing the diameter of the crossing or (b) changing the friction coefficient, such as through slip lining (retrofitting an existing culvert by inserting a smaller diameter pipe), culvert relining or invert lining.

3. Stream channelization or relocation resulting in loss of streambed that is <200 LF.

**Pre-Construction Notification Required**

1. In non-tidal waters, the combined permanent and temporary impacts are a) >5,000 SF; b) located in vegetated shallows or riffle and pool complexes; or c) do not meet the Massachusetts River and Stream Crossing Standards (see note 4).

2. The activity occurs in tidal waters, salt marsh, or in, over or under navigable waters of the U.S.

3. Stream and wetland crossings that require a PCN per GC 20 TOY Restrictions and GC 31 Stream Work and Crossings & Wetland Crossings.

4. Stream channelization or relocation resulting in loss of streambed that is ≥200 LF. Stream impoundment activities of any kind.

5. Work on USACE properties & USACE-controlled easements.

6. Activities that are not eligible for SV and do not require an IP.

Notes:

1. See GC 22 for information on temporary construction mats.
2. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the U.S. may be authorized under GP 8.
3. Loss of streambed does not require a PCN when bridge piers or similar supports are used.
4. In their PCN application submission to the USACE, applicants must explain why they are unable to meet the Massachusetts River and Stream Crossing Standards.
5. For tidal crossings, modeling is encouraged as a method to verify the proposed crossing would not be undersized and resilient to the effects of sea level rise.

[1] Stream crossings must conform with the MA Stream Crossing Guidelines when practicable and comply with all applicable GCs of this document (Section IV).

**GP 24. TEMPORARY CONSTRUCTION, ACCESS, AND DEWATERING (Authorities: §10 and §404)**

Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites that are not authorized under another GP activity.

**Not authorized under GP 24 (IP required):** (a) Permanent structures or impacts; (b) Temporary impacts in tidal waters that are >1 acre; >5000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1000 SF in vegetated shallows; (c) Use of cofferdams to dewater wetlands or other aquatic areas to change their use; (d) Temporary stream crossings (see GPs 6, 17, 23); (e) Structures or fill left in place after construction is completed.

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. In non-tidal waters, temporary impacts are a) ≤5,000 SF; b) not located in riffle and pool complexes and non-tidal vegetated shallows.<br><br>2. In tidal waters, temporary impacts are a) ≤5,000 SF, b) ≤1,000 SF in mudflats and/or natural rocky habitat, and c) not located in saltmarsh and tidal vegetated shallows.<br><br>3. Structures in navigable waters of the U.S. provided impacts do not require a PCN and they are left in place ≤30 days. | 1. In non-tidal waters, temporary impacts are a) >5,000 SF; b) located in riffle and pool complexes or non-tidal vegetated shallows.<br><br>2. In tidal waters, temporary impacts are a) >5,000 SF; b) >1,000 SF in mudflats and/or natural rocky habitat, or (c) located in saltmarsh and tidal vegetated shallows.<br><br>3. Activities in the Connecticut River from the Turners Falls Dam to the MA/CT border, or Merrimack River from the Essex Dam to the mouth, involving temporary impacts unless they are performed <5 feet waterward from OHW or HTL and in the dry. This is to protect endangered species; or<br><br>4. Activities not eligible for SV and do not require an IP. |

Notes:

1. Turbidity or sediment resuspension is generally not considered to occur when properly using management techniques to work in dry conditions. See GC 25.
2. Total impact areas under SV Eligible 1-2 exclude use of temporary construction mats. See GC 22 for information on temporary construction mats.
3. An SVN submittal to USACE is not required for SV #3 above.

**GP 25. EMERGENCY SITUATIONS (Authorities: §10 and §404)**

Structures or work in or affecting navigable waters of the U.S. and the discharge of dredged or fill material into waters of the U.S., including wetlands, necessary for repair or protection measures associated with an emergency situation[1], MassDEP Emergency Declaration/Certification, or FEMA Declared Disaster. The activity shall be the minimum necessary to alleviate the immediate emergency unless that additional work would result in no more than minimal effects to aquatic environment and is necessary to reduce the potential for future failure or loss of the structure or site. Typical activities authorized under this GP include, but are not limited to, restoration of damaged areas; bank stabilization; temporary fills for staging, access, and dewatering; and, repair, replacement, or rehabilitation of existing structures and/or fills (i.e., roads, bridges, utility pipelines and flood control structures, including attendant features, and other existing structures located in waters of the U.S.).

For the restoration of areas damaged by storms floods, or other discrete events: (a) The restored area must not extend waterward of the ordinary high-water mark or high tide line that existed prior to the damage. (b) The slope of the restored area below the ordinary high-water mark or high tide line must not exceed the slope that existed prior to the damage. (c) The bottom elevation of the restored area must not exceed the bottom elevation that existed prior to the damage (i.e., the restored area must not result in a reduction in the depth of the waterbody that existed prior to the damage). (d) Except in cases of FEMA reimbursement, the activity must be initiated, under contract to commence, or funds shall be allocated for the activity within 30 days of authorization under GP 25.

**Not authorized under GP 25 (IP required):** (a) Permanent impacts for a single and complete project >1/2 acre in tidal waters, unless the district engineer waives this criterion by making a written determination concluding that the activity will result in no more than minimal adverse environmental effects; >1,000 SF in saltmarsh, mud flats, riffle and pool complexes, or non-tidal vegetated shallows; or >100 SF in tidal vegetated shallows; (b) Temporary impacts in tidal waters that are >5,000 SF in saltmarsh, mud flats, or riffle and pool complexes; or >1,000 SF in vegetated shallows; (c) New structures or fills that did not previously exist before the storm event or other discrete event (see other GPs).

| **Self-Verification Eligible** | **Pre-Construction Notification Required** |
|---|---|
| 1. Activities that qualify under a Severe Weather Emergency Declaration pursuant to 310 CMR 10.06(8) and/or receive an Emergency Certification pursuant to 310 CMR 10.06 and/or meet the requirements of 314 CMR 9.12(2) or (3); and<br><br>2. Activities eligible under a FEMA Declared Disaster that also comply with #1 above. | 1. Activities that are eligible under a FEMA Declared Disaster and do not qualify under SV #1.<br><br>2. Minor deviations in the structure or fill area, including those to existing structures or fills are authorized due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to alleviate the emergency.<br><br>3. Activities that are not eligible for SV and do not require an IP. |

Notes:

1. Review the GCs (Section IV) to confirm if a PCN is not required elsewhere in this document.
2. If the activity is not a MassDEP Emergency Declaration/Certification, does not meet the requirements of 314 CMR 9.12(2) or (3), or is not a FEMA Declared Disaster, applicants must explain in writing why their activity qualifies as an emergency (see footnote) to be eligible under GP 25.
3. SV eligible activities qualify under the general 401 WQC MassDEP issued for the 2023 MA GPs (GC 9).

[1] An emergency, as determined by this office and 33 CFR 325.2(e)(4), is one which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a Department of the Army permit is not undertaken within a time period less than the normal time to process the request under standard processing procedures.

**SECTION IV. GENERAL CONDITIONS:**

To qualify for GP authorization, the applicant must comply with the following general conditions, as applicable, in addition to authorization-specific conditions imposed by the division or district engineer.

1. Other Permits
2. Federal Jurisdictional Boundaries
3. Single and Complete Projects
4. Use of Multiple General Permits
5. Suitable Material
6. Tribal Rights & Burial Sites
7. Avoidance, Minimization, and Compensatory Mitigation
8. Water Quality & Stormwater Management
9. Coastal Zone Management
10. Federal Threatened and Endangered Species
11. Essential Fish Habitat
12. National Lands
13. Wild and Scenic Rivers
14. Historic Properties
15. USACE Property and Federal Projects (§408)
16. Navigation
17. Permit/Authorization Letter On-Site
18. Storage of Seasonal Structures
19. Pile Driving and Pile Removal in Navigable Waters
20. Time of Year Restrictions
21. Heavy Equipment in Wetlands
22. Temporary Fill & Construction Mats
23. Restoration of Wetland Areas
24. Bank Stabilization
25. Soil Erosion and Sediment Controls
26. Aquatic Life Movements and Management of Water Flows
27. Spawning, Breeding, and Migratory Areas
28. Vernal Pools
29. Invasive Species
30. Fills Within 100-Year Floodplains
31. Stream Work and Crossings & Wetland Crossings
32. Utility Line Installation and Removal
33. Water Supply Intakes
34. Coral Reefs
35. Blasting
36. Inspections
37. Maintenance
38. Property Rights
39. Transfer of GP Verifications
40. Modification, Suspension, and Revocation
41. Special Conditions
42. False or Incomplete Information
43. Abandonment
44. Enforcement Cases
45. Previously Authorized Activities
46. Duration of Authorization

**1. Other Permits.** Authorization under these GPs does not obviate the need for the permittee to obtain other Federal, State, or local permits, approvals, or authorizations required by law. Permittees are responsible for obtaining all required permits, approvals, or authorizations. Activities that are not regulated by the State, but subject to USACE jurisdiction, may still be eligible for these GPs.

**2. Federal Jurisdictional Boundaries**.
a. Applicability of these GPs shall be evaluated with reference to Federal jurisdictional boundaries. Activities shall be evaluated with reference to "waters of the U.S." under the CWA (33 CFR 328) and "navigable waters of the U.S." under §10 of the Rivers and Harbors Act of 1899 (33 CFR 329). Permittees are responsible for ensuring that the boundaries used satisfy the Federal criteria defined at 33 CFR 328-329. These sections prescribe the policy, practice, and procedures to be used in determining the extent of the USACE jurisdiction. Note: Waters of the U.S. includes all waters pursuant to 33 CFR 328.3(a), and adjacent wetlands as the term is defined in 33 CFR 328.3(c).
b. Wetlands shall be delineated in accordance with the USACE Wetlands Delineation Manual and the most recent Northcentral/Northeast Regional Supplement. Wetland delineation and jurisdiction information is located at: www.nae.usace.army.mil/missions/regulatory/jurisdiction-and-wetlands and maps are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
c. Vegetated shallows shall be delineated when present on the project site. Vegetated shallow survey guidance and maps are located at: www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
d. Natural rocky habitats shall be delineated when present on the project site. The definition of natural rocky habitats is in Section VII of the MA GP. Natural rocky habitat survey guidance and maps are located at: www.nae.usace.army.mil/ missions/regulatory/state-general-permits/massachusetts-general-permit.

**3. Single and Complete Projects**. The MA GP shall not be used for piecemeal work and shall be applied to single and complete projects. The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers.
a. For non-linear projects, a single and complete project must have independent utility. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed, even if the other phases were not built, can be considered as separate single and complete projects with independent utility.
b. Unless USACE determines the activity has independent utility, all components of a single project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) shall be evaluated as one single and complete project.
c. For linear projects such as power lines or pipelines with multiple crossings, a "single and complete project" is all crossings of a single water of the U.S. (i.e., single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately. If any crossing requires a PCN review or an individual permit review, then the entire linear project shall be reviewed as one project under PCN or the individual permit procedures.

**4. Use of Multiple General Permits**. The use of more than one GP for a single and complete project is prohibited, except when the acreage loss of waters of the U.S. authorized by the GPs does not exceed the acreage limit of the GPs with the highest specified acreage limit. For example, if a road crossing over waters is constructed under GP 23, with an associated utility line

crossing authorized by GP 6, if the maximum acreage loss of waters of the U.S. for the total project is ≥1 acre it shall be evaluated as an IP.

**5. Suitable Material & Discharge of Pollutants.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). All activities involving any discharge into waters of the U.S. authorized under these GPs shall be consistent with applicable water quality standards, effluent limitations, standards of performance, prohibitions, and pretreatment standards and management practices established pursuant to the CWA (33 U.S.C. 1251), and applicable state and local laws. If applicable water quality standards, limitations, etc., are revised or modified during the term of this GP, the authorized work shall be modified to conform with these standards within six months from the effective date of such revision or modification, or within a longer period of time deemed reasonable by the District Engineer in consultation with the Regional Administrator of the EPA. Unless monitoring data indicates otherwise, applicants may presume that their activity complies with state water quality standards provided they are in compliance with the Section 401 WQC (Applicable only to the Section 404 activity).

**6. Tribal Rights & Burial Sites**

a. For all SV and PCN applications, prospective permittees shall follow the guidance set forth in Appendix A, Guidance for NHPA Section 106 Compliance in Massachusetts.

b. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

c. Many tribal resources are not listed on the National Register of Historic Places (NRHP) and may require identification and evaluation in collaboration with the identifying tribe and by qualified professionals. The Tribal Historic Preservation Officer (THPO) and State Historic Preservation Officer (SHPO) may be able to assist with locating information on:

i. Previously identified tribal resources; and
ii. Areas with potential for the presence of tribal resources.

d. Discovery of Previously Unknown Remains and Artifacts: If any previously unidentified human remains, cultural deposits, or artifacts are discovered while accomplishing the activity authorized by this permit, you must immediately notify the USACE of what you have found, and to the maximum extent practicable, cease work and avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The USACE will initiate the appropriate the Federal, Tribal, and state coordination required to determine if the items or remains are eligible for listing in the NRHP and warrant a recovery effort or can be avoided.

e. Burial Sites: Burial sites, marked or unmarked, are subject to state law (Massachusetts Unmarked Burial Law). Native American burial sites on federal or tribal land are subject to the provisions of Native American Graves Protection and Repatriation Act (NAGPRA). Regulated activities may not result in disturbance or removal of human remains until disposition of the remains has been determined by the appropriate authority under these laws, and the work is authorized by the USACE. Regulated activities which result in an inadvertent discovery of human remains must stop immediately, and the USACE, as well as the appropriate state and tribal authority, must be notified. Regulated work at inadvertent discovery sites requires compliance with state law or NAGPRA, as appropriate, prior to re-starting work.

**7. Avoidance, Minimization, and Compensatory Mitigation.** To qualify under the MA GP, activities must comply with Section V Mitigation Standards and the following as applicable:

a. Avoid and Minimize: Activities must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S. to the maximum extent practicable at the project site. Avoidance and minimization are required to the extent necessary to ensure that the adverse effects to the aquatic environment (both area and function) are no more than minimal.

b. Compensatory mitigation for unavoidable impacts to waters of the U.S., including direct, indirect, secondary, and temporal loss, will generally be required for permanent impacts that exceed the thresholds identified in Section V, and may be required for temporary impacts, to offset unavoidable impacts which remain after all appropriate and practicable avoidance and minimization has been achieved and to ensure that the adverse effects to the aquatic environment are no more than minimal. Proactive restoration projects or temporary impact work with no secondary effects may generally be excluded from this requirement.
c. Mitigation proposals shall follow the guidelines found in the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule April 10, 2008; 33 CFR 332. Prospective permittees may purchase mitigation credits in-lieu of permittee-responsible mitigation as compensation for unavoidable impacts to waters of the U.S. in the Commonwealth of Massachusetts.

**8. Water Quality & Stormwater Management.** The 401 WQC requirement applies to all activities listed under GPs 1-25, unless determined otherwise by MassDEP. Permittees shall also satisfy stormwater management requirements in Massachusetts.

a. General 401 WQC: MassDEP issued a WQC on April 21, 2023 which conditionally certifies all activities in GPs 1 – 24 eligible for SV and PCN so long as the activity is described in 314 CMR 9.03, and is not an activity described in 314 CMR 9.04, and so long as the activity meets all other requirements, terms and conditions of the WQC. The MassDEP WQC also conditionally certifies activities described in GP 25 so long as the activity meets all other conditions of the WQC. Emergency projects described in GP 25 must obtain an emergency certification or otherwise be authorized pursuant to 310 CMR 10.06, qualify under a Severe Weather Emergency Declaration pursuant to 310 CMR 10.06(8) issued by the MassDEP, or meet the requirements of 9.12(2) or (3) in order to be certified under the WQC. Prospective permittees may refer to the following link to determine if their activity is eligible: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/ Massachusetts-General-Permit/. The General 401 WQC is located here, and it provides detailed information regarding what activities are certified and the conditions for certification. Activities listed in 314 CMR 9.03 that are not exempt from the Wetland Protection Act must have a valid Final Order of Conditions (OOC) or Final Restoration Order of Conditions pursuant to 310 CMR 10.00 to be eligible under the General 401 WQC.
b. Individual 401 WQC: Prospective permittees shall contact MassDEP and apply for an individual 401 WQC if their activity does not qualify for a General 401 WQC as outlined above. MassDEP may issue, waive, or deny the individual 401 WQC on a case-by-case basis. All activities listed in 314 CMR 9.04 must obtain an individual 401 WQC from MassDEP to be eligible under these GPs. When an Individual 401 WQC is required for *PCN activities*, the prospective permittee shall submit their Individual 401 WQC application concurrently to MassDEP and USACE to comply with 40 CFR 121.
c. The prospective permittee is responsible for determining the appropriate 401 WQC requirement and submitting this information to the USACE at the time of their PCN application or when completing their SVN. Prospective permittees that are unsure of whether their activity has been certified should contact MassDEP for a determination.
d. As applicable, all activities shall be compliant with the Massachusetts Stormwater Handbook. The Stormwater Handbook can be accessed on the NAE Regulatory website here: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.
e. No work requiring authorization under Section 404 of the CWA may be performed unless (1) the prospective permittee qualifies for coverage under the April 21, 2023 General 401 WQC, (2) the prospective permittee receives an individual Section 401 WQC from the MassDEP, or (3) the MassDEP waives individual Section 401 WQC.

**9. Coastal Zone Management.** The permittee must obtain CZM consistency concurrence when an activity is located in the coastal zone in order to be eligible under the MA GP. This requirement

shall be satisfied by acquiring one of the following from the Massachusetts Office of Coastal Zone Management (MA CZM):

a. General CZM Federal Consistency Concurrence (General Concurrence): MA CZM has granted General Concurrence for all SV and PCN activities for GPs 1-25. The prospective permittee must obtain all applicable permits and approvals before construction of the authorized activity begins (e.g., before work begins on site). For SVs, General Concurrence is automatically granted and no further action is required from the prospective permittee. For PCNs, the USACE will coordinate with MA CZM to acquire General Concurrence as part of the PCN application review.
b. Individual CZM Federal Consistency Concurrence (Individual Concurrence): In certain cases, MA CZM may elevate any GP activity 1-25 and require Individual Concurrence. The prospective permittee must contact MA CZM and follow the procedures to obtain Individual Concurrence as determined appropriate by MA CZM.
c. Permittees must obtain CZM consistency concurrence as outlined above before commencing work authorized under these GPs.

**10. Federal Threatened and Endangered Species**

a. No activity is authorized under any GP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any GP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of “effects of the action” for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under ESA section 7 regarding “activities that are reasonably certain to occur” and “consequences caused by the proposed action.”
b. Other Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If a PCN is required for the proposed activity, the Federal permittee must provide USACE with the appropriate documentation to demonstrate compliance with those requirements. The USACE will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.
c. USFWS ESA-Listed Species: Non-federal applicants shall use the USFWS website, Information for Planning and Consultation (IPAC), to determine if their activity is located within the ESA-listed species range. The IPAC website can be accessed on the NAE Regulatory website: https://www. nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/. Applicants shall ensure they have an updated, valid species list before construction begins. This may require applicants to update their species list in IPAC before the start of construction. Note: Applicants should refer to the NAE Regulatory Website at the link above to determine if they have been designated as a non-federal representative. Applicants shall complete Section 7 consultation according to the guidance document located on the NAE Regulatory Website. After completing the Rangewide Determination Key and reaching the outcome “may affect, not likely to adversely affect”, you may be required to wait up to 15 days before that outcome is final and compliance under Section 7 of the ESA is fulfilled.

i. *Self-Verification Criteria*: The activity is SV-eligible if:
1) The activity is not located within the ESA-listed species range;
2) Another (lead) Federal agency has completed Section 7 consultation; or
3) The activity is located within the ESA-listed species range ***and*** USACE has designated the applicant as a non-federal representative under 50 CFR 402.08 of the ESA for all

species within the project's action area. As the non-federal representative, the applicant shall complete consultation through IPAC and reach the outcome of "no effect" or "not likely to adversely affect".

ii. *Pre-Construction Notification Criteria*: The activity requires a PCN if:

1) The activity is located within the ESA-listed species range ***and*** USACE has NOT designated the applicant as a non-federal representative under 50 CFR 402.08 of the ESA for all species within the project's action area;

2) The activity is located in designated or proposed critical habitat; or

3) The activity is located within the ESA-listed species range and completion of the IPAC determination key has resulted in the outcome of "may affect" or "may affect, likely to adversely affect"; or

4) A PCN is required elsewhere in this document.

d. NOAA-Listed Species: Non-federal applicants shall refer to the Section 7 Mapper for federally listed species to determine if any species are mapped as present. When NOAA-listed species are present, the applicant shall generate a species report through the mapper and submit this document as part of their PCN or SVN submission. The NOAA Fisheries' Section 7 Mapper can be accessed here on the NAE Regulatory website here: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.

e. Authorization of an activity by an GP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

**11. Essential Fish Habitat (EFH).**

a. SV eligible activities have been determined to result in no more than minimal adverse effects, provided the permittee complies with all terms and conditions of the MA GP as appliable to the activity. NMFS has granted General Concurrence [50 CFR 600.920(g)] for all SV eligible activities. These activities do not require project specific EFH consultation.

b. For PCN required activities, the applicant is required to describe and identify potential adverse effects to EFH and should refer to NOAA Fisheries' EFH Mapper (http://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper) and Omnibus Essential Fish Habitat Amendment 2 Volume 2: EFH and HAPC Designation Alternatives and Environmental Impacts (https://www.habitat.noaa.gov/application/efhmapper/oa2_efh_hapc.pdf). If an activity is located within EFH, the PCN application must contain:

1. A description of the action located in EFH.
2. An analysis of the potential adverse effects of the action on EFH and the managed Species.
3. Conclusions regarding the effects of the action on EFH.
4. Proposed mitigation, if applicable (refer to the mitigation thresholds located in Section V).

c. Federal agencies shall follow their own procedures for complying with the EFH requirements of the Magnuson-Stevens Fishery Conservation and Management Act. For activities requiring a PCN, the applicant is responsible for furnishing documentation that demonstrates consultation for EFH has been completed.

d. For PCN activities, no work may commence until EFH consultation as required by the Magnuson-Stevens Act has been completed.

**12. National Lands**. Activities that impinge upon the value of any National Wildlife Refuge, National Forest, National Marine Sanctuary, National Historic Landmarks or any other area administered by the National Park Service, U. S. Fish and Wildlife Service (USFWS) or U.S. Forest Service (USFS) require a PCN or Individual Permit. Federal land managers seeking authorization for activities located in the above listed National Lands may proceed under SV, unless a PCN is required elsewhere in this document.

**13. Wild and Scenic Rivers.** The following activities in designated river or study river segments in the National Wild and Scenic River (WSR) System require a PCN unless the Federal agency with direct management responsibility for such river, in Massachusetts this is generally the National Park Service, has determined in writing to the proponent that the proposed work will not adversely affect the WSR designation or study status:

a. Activities that occur in WSR segments, in and 0.25 miles up or downstream of WSR segments, or in tributaries within 0.25 miles of WSR segments;
b. Activities that occur in wetlands within 0.25 miles of WSR segments;
c. Activities that have the potential to alter free-flowing characteristics in WSR segments.

No GP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

As of May 10, 2023, affected rivers in Massachusetts include: the Taunton River (40 miles), Sudbury River (16.6 miles), Assabet River (4.4 miles), Concord River (8 miles), Nashua River (27 miles), Squannacook River (16.3 miles), Nissitissit River (4.7 miles), and the Westfield River, including West Branch, Middle Branch, Gendale Brook, East Branch, Drowned Land Brook, Center Brook, Windsor Jambs Brook, Shaker Mill Brook, Depot Brook, Savery Brook, Watson Brook, Center Pond Brook (78.1 miles). The most up to date list of designated and study rivers and their descriptions may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

**14. Historic Properties**

a. For all SV and PCN applications, permittees shall follow the guidance set forth in Appendix A, Guidance for NHPA Section 106 Compliance in Massachusetts.

b. No undertaking authorized by these GPs shall cause effects[1] (defined in 36 CFR Part 800 and 33 CFR Part 325, Appendix C, and its Interim Guidance) on properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places (NRHP)[2], including previously unknown historic properties within the permit area, unless the USACE or another Federal action agency has satisfied the consultation requirements of Section 106 of the National Historic Preservation Act (Section 106). If another Federal agency is determined the lead federal agency for compliance with Section 106, applicant must obtain the appropriate documentation and provide this information to the USACE to demonstrate compliance with Section 106. The applicant shall not begin the activity until the USACE notifies them in writing that the documentation provided satisfies Section 106 requirements.

[1] Effect means the alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register of Historic Properties.
[2] See the NAE Regulatory website, National Register of Historic Places link here: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.

c. Many historic properties are not listed on the NRHP and may require identification and evaluation by qualified historic preservation and/or archaeological consultants. The State Historic Preservation Officer (SHPO), Massachusetts Board of Underwater Archaeological Resources (BUAR), local historical societies, certified local governments, general public, and NRHP may also be able to assist with locating information on:

i. Previously identified historic properties; and
ii. Areas with potential for the presence of historic properties.

d. Discovery of Previously Unknown Remains and Artifacts: If any previously unidentified human remains, cultural deposits, or artifacts are discovered while accomplishing the activity authorized by this permit, you must immediately notify the USACE of what you have found, and to the maximum extent practicable, cease work and avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The USACE will initiate the Federal, State and tribal coordination required to determine if the items or remains warrant a recovery effort and/or if the site is eligible for listing in the National Register of Historic Places.

e. Section 110k: Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. § 306113) prevents the USACE from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106, has intentionally significantly adversely effected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the USACE, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the USACE is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties effected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or effects historic properties on tribal lands or effects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

f. Underwater Archaeological Resources: Under Massachusetts General Law Ch. 6, s.'s 179-180, and Ch. 91, s. 63, the BUAR has statutory jurisdiction within state waters and is the sole trustee of the Commonwealth's underwater heritage, charged with the responsibility of encouraging the discovery and reporting, as well as the preservation and protection, of underwater archaeological resources. Underwater archaeological resources located within the waters of the Commonwealth of Massachusetts are property of the Commonwealth, which holds title to these resources and retains regulatory authority over their use. Under Massachusetts General Law, no person, organization or corporation may "remove, displace, damage, or destroy" any underwater archaeological resources located within the Commonwealth's submerged lands except through consultation with the BUAR and in conformity with the permits it issues. https://www.mass.gov/orgs/board-of-underwater-archaeological-resources.

**15. USACE Property and Federal Projects. (33 USC §408)**

a. USACE projects and property can be found at: https://www.nae.usace.army.mil/Missions/Civil-Works/.

b. In addition to any authorization under these GPs, prospective permittee shall contact the USACE Real Estate Division (https://www.nae.usace.army.mil/Missions/Real-Estate-Division/) at (978) 318-8585 for work occurring on or potentially affecting USACE properties and/or USACE-controlled easements. Work may not commence on USACE properties and/or USACE-controlled easements until they have received any required USACE real estate documents evidencing site-specific permission to work.

c. Any proposed temporary or permanent occupation or alteration of a Federal project (including, but not limited to, a levee, dike, floodwall, channel, anchorage, breakwater, seawall, bulkhead, jetty, wharf, pier, or other work built or maintained but not necessarily owned by the United States),

is not eligible for SV and requires a PCN. This includes all proposed structures and work in, over, or under a USACE federal navigation project (FNP) or in the FNP's buffer zone. The buffer zone is an area that extends from the horizontal limits of the FNP to a distance of three times the FNP's authorized depth. The activity also requires review and approval by the USACE pursuant to 33 USC 408 (Section 408 Permission). The prospective permittee may reach out to the POCs located here: https://www.nae.usace.army.mil/ Missions/Section-408/.
d. Any structure or work constructed in a FNP or its buffer zone shall be subject to removal at the owner's expense prior to any future USACE dredging or the performance of periodic hydrographic surveys.
e. Where a Section 408 permission is required, written verification for the PCN will not be issued prior to the decision on the Section 408 permission request.

**16. Navigation**
a. No activity may cause more than a minimal adverse effect on navigation.
b. Any safety lights and signals prescribed by the U.S. Coast Guard, must be installed, and maintained at the permittee's expense on authorized facilities in navigable waters of the U.S.
c. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein.
d. The permittee understands and agrees that if future U.S. operations require the removal, relocation, or other alteration of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from USACE, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

**17. Permit/Authorization Letter On-Site.** For PCNs, the permittee shall ensure that a copy of these GPs and the accompanying authorization letter are at the work site (and the project office) whenever work is being performed, and that all personnel with operational control of the site ensure that all appropriate personnel performing work are fully aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and sub-contracts for work that affects areas of USACE jurisdiction at the site of the work authorized by these GPs. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means these GPs, including GCs and the authorization letter (including its drawings, plans, appendices, special conditions, and other attachments), and any permit modifications. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or sub-contract as a change order. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire authorization letter, and no contract or sub-contract shall require or allow unauthorized work in areas of USACE jurisdiction. For SVs, the permittee shall ensure that a complete and signed copy of the SVN is present on site during construction and is made available for review at any time by USACE and other Federal, State, & Local regulatory agencies. A complete and signed copy of the SVN must be submitted to USACE Regulatory within 30 days of initiating construction of the authorized activity, unless stated otherwise in the applicable GP.

**18. Storage of Seasonal Structures.** Coastal structures such as pier sections, floats, etc., that

are removed from the waterway for a portion of the year (often referred to as seasonal structures) shall be stored in an upland location, located above MHW and not in tidal wetlands. These seasonal structures may be stored on the fixed, pile-supported portion of the structure that is seaward of MHW. This is intended to prevent structures from being stored on the marsh substrate and the substrate seaward of MHW.

**19. Pile Driving and Pile Removal in Navigable Waters.**
a. Derelict, degraded or abandoned piles and sheet piles in navigable waters of the U.S., except for those inside existing work footprints for piers, must be completely removed, cut and/or driven to 3 feet below the substrate to prevent interference with navigation, and existing creosote piles that are affected by project activities shall be completely removed if practicable. In areas of fine-grained substrates, piles must be removed by the direct, vibratory or clamshell pull method[1] to minimize sedimentation and turbidity impacts and prevent interference with navigation from cut piles. Removed piles shall be disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands or mudflats.
b. A PCN is required for the installation or removal of structures with jetting techniques.
c. A PCN is required for the installation of >12 inch-diameter piles of any material type or steel piles of any size in tidal waters, unless they are installed in the dry. If piles are not installed in the dry:
i. Impact pile driving shall commence with an initial set of three strikes by the hammer at 40% energy, followed by a one-minute wait period, then two subsequent 3-strike sets at 40% energy, with one minute waiting periods, before initiating continuous impact driving.
ii. Vibratory pile driving shall be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds of reduced energy driving, one-minute waiting period shall be repeated two more times, followed immediately by pile-driving at full rate and energy.
iii. In addition to using a soft start at the beginning of the workday for pile driving as described in 19c(i-ii), a soft start must also be used at any time following a cessation of pile driving for a period of 30 minutes or longer.
d. Bubble curtains may be used to reduce sound pressure levels during vibratory or impact hammer pile driving.

**20. Time-of-Year (TOY) Restrictions**. Activities that include in-water work must comply with the TOY Restrictions below to be SV eligible, otherwise a PCN is required. PCN submittals shall contain written justification for deviation from the TOY Restrictions. The term “in-water work” does not include conditions where the work site is “in-the-dry” (e.g., intertidal areas exposed at low tide). The term “in-the-dry” includes work contained within a cofferdam so long as the cofferdam is installed and subsequently removed outside the TOY Restriction. The TOY restrictions stated in Appendix B of the MA DMF Technical Report TR-47[2] can apply instead for activities in tidal waters if (1) TOYs are provided for a specific waterbody where the activity is proposed and (2) the TOYs are less restrictive than below. The activity must also not require a PCN elsewhere in this document to be SV eligible.

[1] Direct Pull: Each piling is wrapped with a choker cable or chain that is attached at the top to a crane. The crane then pulls the piling directly upward, removing the piling from the sediment. Vibratory Pull: The vibratory hammer is a large mechanical device (5-16 tons) that is suspended from a crane by a cable. The vibrating hammer loosens the piling while the crane pulls up. Clamshell Pull: This can remove intact, broken or damaged pilings. The clamshell bucket is a hinged steel apparatus that operates like a set of steel jaws. The bucket is lowered from a crane and the jaws grasp the piling stub as the crane pulls up. The size of the clamshell bucket is minimized to reduce turbidity during piling removal.
[2] The MA DMF Technical Report TR-47: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/

| | TOY Restriction (No work) |
|---|---|
| **Non-tidal Waters** | Defer to TR-47 |
| **Tidal Waters** | January 15 – November 15 |

Alternate work windows proposed under a PCN will generally be coordinated with the USFWS and NMFS. Resulting written verifications may include species-specific work allowed windows.

**21. Heavy Equipment in Wetlands.** Operating heavy equipment (drill rigs, fixed cranes, etc.) within wetlands shall be minimized, and such equipment shall not be stored, maintained, or repaired in wetlands, to the maximum extent practicable. Where construction requires heavy equipment operation in wetlands, the equipment shall:

i. Have low ground pressure (typically ≤3 psi);

ii. Be placed on swamp/construction/timber mats (herein referred to as "construction mats" or "mats") that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation. See GC 22 for information on the placement of construction mats; or

iii. Be operated on adequately dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath the equipment and upheaval of adjacent wetlands. Construction mats are to be placed in the wetland from the upland or from equipment positioned on mats if working within a wetland. Dragging construction mats into position is prohibited. Other support structures that are capable of safely supporting equipment may be used with written USACE authorization.

**22. Temporary Fill, Work & Construction Mats.**

a. *Construction mats in non-tidal waters*: Temporary construction mats shall be in place ≤1 year *and* for one growing season or less to be SV eligible. A PCN is required if construction mats are in place >1 year *or* for more than one growing season. Construction mats can be placed in an area of any size in non-tidal waters. The activity may occur in segments to ensure the requirements for SV above are met, otherwise a PCN is required.

b. *Construction mats in tidal waters*: Temporary construction mats placed in an area <5,000 SF in tidal waters are SV eligible, provided those mats are in place ≤6 months. Temporary construction mats placed in an area ≥5,000 SF or in place >6 months in tidal waters require a PCN.

c. *Management of construction mats:* At a minimum, construction mats shall be managed in accordance with the following construction mat best management practices (BMPs):

1. Mats shall be in good condition to ensure proper installation, use, and removal.
2. As feasible, mats shall be placed in a location that will minimize the amount of mats needed for the wetland crossing(s).
3. Inspect mats prior to their re-use and remove any plant debris. Mats are to be thoroughly cleaned before re-use to prevent the spread of invasive plant species.
4. Impacts to wetland areas shall be minimized during installation, use, and removal of the mats.
5. Adequate erosion & sediment controls shall be installed at approaches to mats to promote a smooth transition to, and minimize sediment tracking onto, the mats.
6. In most cases, mats should be placed along the travel area so that the individual boards are resting perpendicular to the direction of traffic. No gaps should exist between mats. Place mats far enough on either side of the resource area to rest on firm ground.

d. A PCN is required for temporary fills in place >2 years. All temporary fills and disturbed soils shall be stabilized to prevent the material from eroding into waters of the U.S. where it is not authorized. Work shall include phased or staged development to ensure only areas under active development are exposed and to allow for stabilization practices as soon as practicable. Temporary fill must be placed in a manner that will prevent it from being eroded by expected high flows.

e. Activities that require unconfined temporary fill and are authorized for discharge into waters of the U.S. shall consist of material that minimizes effects to water quality.
f. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Materials shall be placed in a location and manner that does not adversely impact surface or subsurface water flow into or out of the wetland. Temporary fill authorized for discharge into wetlands shall be placed on geotextile fabric or other appropriate material laid on the pre-construction wetland grade where practicable to minimize impacts and to facilitate restoration to the original grade. Construction mats are excluded from this requirement.
g. Construction debris and deteriorated materials shall not be located in waters of the U.S.
h. Temporary fills, construction mats, and corduroy roads shall be entirely removed as soon as they are no longer needed to construct the authorized activity and the disturbed areas be restored to pre-construction contours and conditions.
i. Construction equipment, such as temporary barges in tidal waters, shall provide clearance above the substrate to avoid grounding onto the substrate during all tides.

**23. Restoration of Wetland Areas.**
a. Upon completion of construction, all disturbed wetland areas shall be stabilized with a wetland seed mix or plant plugs containing only plant species native to New England, and be appropriate for site conditions, including salinity and frequency of inundation, and shall not contain any species listed in the “Invasive and Other Unacceptable Plant Species” Appendix K of the New England District “Compensatory Mitigation Standard Operating Procedures” found at https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation.aspx.
b. The introduction or spread of invasive plant species in disturbed areas shall be prevented and controlled. Equipment shall be thoroughly cleaned before and after project construction to prevent the spread of invasive species. This includes, but is not limited to, tire treads and construction mats.
c. In areas of authorized temporary disturbance, if trees are cut in USACE jurisdiction, they shall be cut at or above ground level and not uprooted in order to prevent disruption of any kind to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.
d. Wetland areas where permanent disturbance is not authorized shall be restored to their original condition and elevation, which under no circumstances shall be higher than the pre-construction elevation. Original condition means careful protection and/or removal of existing soil and vegetation, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized.

**24. Bank Stabilization.**
a. Projects involving construction or reconstruction/maintenance of bank stabilization within USACE jurisdiction shall be designed to minimize environmental effects, effects to neighboring properties, scour, conversion of natural shoreline to hard armoring, etc. to the maximum extent practicable.
b. Projects involving the construction of new bank stabilization within USACE jurisdiction shall use bioengineering techniques and natural materials in the project design to the maximum extent practicable. Use of hard structures shall be eliminated or minimized unless the prospective permittee can demonstrate that use of bioengineering techniques is not practicable due to site conditions.
c. Where possible, bank stabilization projects shall optimize the natural function of the shoreline, including self-sustaining stability to attenuate flood flows, fishery, wildlife habitat and water quality protection, while protecting upland infrastructure from storm events that can cause erosion as well as impacts to public and private property.
d. No material shall be placed in excess of the minimum needed for erosion protection.
e. No material shall be placed in a manner that will be eroded by normal or expected high flows (properly anchored native trees and treetops may be used in low energy areas).

f. Native plants appropriate for current site conditions, including salinity, must be used for bioengineering or vegetative bank stabilization.
g. The activity must be properly maintained, which may require repairing it after severe storms or erosion events.

**25. Soil Erosion and Sediment Controls.**
a. Appropriate soil erosion and sediment controls[1] (hereinafter referred to as "controls") must installed prior to earth disturbance and maintained in effective operating condition during construction. Biodegradable wildlife friendly erosion controls should be used whenever practicable to minimize effects to water quality.
b. Activities in streams (rivers, streams, brooks, etc.) and tidal waters that are capable of producing sedimentation or turbidity should be done during periods of low-flow or no-flow, when the stream or tide is waterward of the work area. Controls may also be used to obtain dry work conditions (e.g., coffer dam, turbidity curtain). The prospective permittee must demonstrate in the project plans where the controls are proposed and how these controls would avoid and/or minimize turbidity or sedimentation.
c. A PCN is required for controls that encroach: i) >25% of the stream width measured from OHW in non-tidal diadromous streams from March 15 to June 30; or ii) >25% of the waterway width measured from MHW in tidal waters from Feb. 1 to June 30, or >50% of the waterway width measured from MHW in tidal waters from July 1 to Jan. 14. This is to protect upstream fish passage. Proponents must also maintain downstream fish passage throughout the project.
d. No dewatering shall occur with direct discharge to waters or wetlands. Excess water in isolated work areas shall be pumped or directed to a sedimentation basin, tank or other dewatering structures in an upland area adequately separated from waters or wetlands. Suspended solids shall be removed prior to discharge back into waters or wetlands from these dewatering structures. All discharge points back into waters and wetlands shall use appropriate energy dissipaters and erosion and sedimentation control BMPs.
e. Temporary controls shall be removed upon completion of work, but not until all exposed soil and other fills, as well as any work waterward of OHW or the HTL, are permanently stabilized at the earliest practicable date. Sediment and debris collected by these devices shall be removed and placed at an upland location in a manner that will prevent its later erosion into a waterway or wetland. Controls may be left in place if they are biodegradable and flows and aquatic life movements are not disrupted.

**26. Aquatic Life Movements and Management of Water Flows.**
a. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies and wetlands shall be:

i. Suitably spanned, bridged, culverted, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species; and
ii. Properly aligned and constructed to prevent bank erosion or streambed scour both adjacent to and inside the crossing.

[1] Appropriate soil erosion, sediment and turbidity controls include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint (i.e., dam and pump), installation of sediment control barriers (i.e., silt fence, vegetated filter strips, geotextile silt fences, filter tubes, erosion control mixes, hay bales or other devices) downhill of all exposed areas, stream fords, retention of existing vegetated buffers, application of temporary mulching during construction, phased construction, and permanent seeding and stabilization, etc.

b. To avoid adverse impacts on aquatic organisms, the low flow channel/thalweg shall remain unobstructed during periods of low flow, except when necessary to perform the authorized work.
c. For work in tidal waters, in-stream controls (e.g., cofferdams) should be installed in such a way as to not obstruct fish passage.
d. Riprap and other stream bed materials shall be installed in a manner that avoids organism entrapment in rock voids or water displaced to subterranean flow with crushed stone and riprap.
e. To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity shall not restrict or impede the passage of normal or high flows unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

**27. Spawning, Breeding, and Migratory Areas.**
a. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized under these GPs.
b. Activities in waters of the U.S. that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
c. The applicant is responsible for obtaining any “take” permits required under the USFWS’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The applicant should contact the appropriate local office of the USFWS to determine if such “take” permits are required for a particular activity.
d. Information on spawning habitat for species managed under the Magnuson-Stevens Fishery Conservation and Management Act (i.e., EFH for spawning adults) can be obtained from NAE Regulatory website, Essential Fish Habitat section, at: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.
e. Information regarding diadromous fish habitat can be obtained from the following DMF website at: https://www.mass.gov/info-details/massgis-data-diadromous-fish.

**28. Vernal Pools.**
a. A PCN is required if a discharge of dredged or fill material is proposed within a vernal pool depression that is also a water of the U.S.
b. Vernal pools must be identified on the plans that show aquatic resource delineations.
c. Adverse impacts to vernal pools shall be avoided & minimized to the maximum extent practicable.

**29. Invasive Species.**
a. The introduction, spread or the increased risk of invasion of invasive plant or animal species on the project site, into new or disturbed areas, or areas adjacent to the project site caused by the site work shall be avoided. Construction mats shall be thoroughly cleaned before reuse to avoid spread of invasive species.
b. Unless otherwise directed by USACE, all applications for PCN non-tidal projects proposing fill in USACE jurisdiction shall include an Invasive Species Control Plan. Additional information can be found at: https://www.nae.usace.army.mil/Missions/Regulatory/Invasive-Species/, https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/.

**30. Fills Within 100-Year Floodplains.** The activity shall comply with applicable Federal Emergency Management Agency (FEMA) approved, Massachusetts Emergency Management

Agency (MEMA) approved and/or local floodplain management requirements. Applicants should contact FEMA and/or MEMA regarding floodplain management requirements.

**31. Stream Work and Crossings & Wetland Crossings.**
a. When feasible, all temporary and permanent crossings of waterbodies and wetlands (hereinafter referred to as "crossings") shall conform to the "Massachusetts River and Stream Crossing Standards" located at: https://www.mass.gov/doc/massachusetts-river-and-stream-crossing-standards/download or https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/. Projects that do not conform to these guidelines shall be reviewed under PCN or IP procedures.
b. Crossings shall be suitably culverted, bridged, or otherwise designed to withstand and to prevent the restriction of high flows, to maintain existing low flows, maintain water quality, and not obstruct the movement of aquatic life indigenous to the waterbody beyond the duration of construction.
c. Crossings shall be installed in such a manner as to preserve hydraulic capacity and flow, sediment transport, and organism passage at its present level, between the wetlands on either side of the road. The applicant shall take necessary measures to correct any wetland damage resulting from deficiencies in hydraulic capacity, sediment transport and organism passage.
d. Stream crossings shall utilize a natural mixed grain-size streambed material composition that matches upstream and downstream substrates to create a stable streambed. Substrate should function appropriately during normal and high flows without washing out. If natural streambed material is not utilized, a PCN is required.
e. Activities involving open trench excavation in flowing waters require a PCN. Work should not occur in flowing waters (requires using management techniques such as temporary flume pipes, culverts, cofferdams, etc.). Normal flows should be maintained within the stream boundary's confines when practicable. Projects utilizing these management techniques must meet all applicable terms and conditions of the GP, including the GCs in Section IV.

**32. Utility Line Installation and Removal**
a. Subsurface utility lines must be installed at a sufficient depth to avoid damage from anchors, dredging, etc., and to prevent exposure from erosion and stream adjustment.
b. When utility lines are installed via horizontal directional drilling, a frac-out contingency plan shall be present on site for the duration of construction. As necessary, the applicant shall immediately contain, control, recover, and remove drilling fluids released into the environment.
c. Abandoned or inactive utility lines must be removed and faulty lines (e.g., leaking hazardous substances, petroleum products, etc.) must be removed or repaired. A written verification from the USACE is required if they are to remain in place, e.g., to protect sensitive areas or ensure safety.
d. Utility lines shall not adversely alter existing hydrology, and trenches cannot be constructed or backfilled in such a manner as to drain waters of the U.S. (e.g., backfilling with extensive gravel layers, creating a French drain effect). In wetland areas, structures such as ditch plugs, cut-off walls, clay blocks, bentonite, or other suitable material shall be used within utility trenches to ensure that the trench through which the utility line is installed does not drain waters of the U.S. including wetlands.
e. Stockpiling of tree debris, to the extent where it has the effect of fill material, shall not occur in waters of the U.S. Tree debris shall be removed from waters of the U.S. and placed in uplands without causing additional disturbance to aquatic resources. Failure to meet this condition could change the bottom elevation of the wetland and be considered a discharge of fill material, and depending on the area of alteration, may require a PCN or IP.

**33. Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

**34. Coral Reefs**. Impacts to coral reefs are not authorized under these GPs. Coral reefs consist of the skeletal deposit, usually of calcareous or silicaceous materials, produced by the vital activities of anthozoan polyps or other invertebrate organisms present in growing portions of the reef.

**35. Blasting.** Blasting in waters of the U.S. associated with work such as dredging, trenching, pile installation, etc. is not authorized under these GPs.

**36. Inspections.** The permittee shall allow USACE to make periodic inspections at any time deemed necessary to ensure that the work is being or has been performed in accordance with the terms and conditions of this permit. To facilitate these inspections, for activities requiring a PCN, the permittee shall complete and return the Certificate of Compliance when it is provided with a PCN verification letter. For SV-eligible activities, the permittee shall complete and submit the SVN to USACE within 30 days of initiating project construction, at which point, USACE may opt to inspect the activity to verify compliance with the terms and conditions of the GP. Post-construction engineering drawings may be required by USACE for completed work. This includes post-dredging survey drawings for any dredging work.

**37. Maintenance.** The permittee shall maintain the activity authorized by these GPs in good condition and in conformance with the terms and conditions of this permit. Some maintenance activities may not be subject to federal regulation under Section 404 in accordance with 33 CFR 323.4(a)(2). This condition is not applicable to maintenance of dredging projects. Prospective permittees should contact USACE to inquire about maintenance of dredging projects, and its eligibility under these GPs. Maintenance dredging is subject to the review thresholds in GP #7 as well as any conditions included in a written USACE authorization. Maintenance dredging includes only those areas and depths previously authorized and dredged.

**38. Property Rights.** Per 33 CFR 320.4(g)(6), these GPs do not convey any property rights, either in real estate or material, or any exclusive privileges, nor do they authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations.

**39. Transfer of GP Verifications.** When the work authorized by these GPs is still in existence at the time the property is transferred, the terms and conditions of these GPs, including any special conditions, will continue to be binding on the entity or individual who received the GP authorizations, as well as the new owner(s) of the property. If the permittee sells the property associated with a GP authorization, the applicant may transfer the GP authorization to the new owner by submitting a letter to USACE to validate the transfer. A copy of the GP authorization letter must be attached to the letter, and the letter must include the following statement: “The terms and conditions of these general permits, including any special conditions, will continue to be binding on the new owner(s) of the property.” This letter shall be signed by both the seller and new property owner(s).

**40. Modification, Suspension, and Revocation**. These GPs and any individual authorization issued thereof may be either modified, suspended, or revoked in whole or in part pursuant to the policies and procedures of 33 CFR 325.7; and any such action shall not be the basis for any claim for damages against the U.S.

**41. Special Conditions.** The USACE may impose other special conditions on a project authorized pursuant to these GPs that are determined necessary to minimize adverse navigational and/or environmental effects or based on any other factor of the public interest. Failure to comply with all conditions of the authorization, including special conditions, constitutes a permit violation and may subject the applicant to criminal, civil, or administrative penalties or restoration.

**42. False or Incomplete Information.** If USACE makes a determination regarding the eligibility of a project under these GPs, and subsequently discovers that it has relied on false, incomplete, or inaccurate information provided by the applicant, the authorization will not be valid, and the U.S. Government may institute appropriate legal proceedings.

**43. Abandonment.** If the permittee decides to abandon the activity authorized under these GPs, unless such abandonment is merely the transfer of property to a third party, he/she/they may be required to restore the area to the satisfaction of USACE.

**44. Enforcement cases.** These GPs do not apply to any existing or proposed activity in USACE jurisdiction associated with an on-going USACE or EPA enforcement action, until such time as the enforcement action is resolved or USACE or EPA determines that the activity may proceed independently without compromising the enforcement action.

**45. Previously Authorized Activities.**

a. Completed projects that received prior authorization from USACE (SV or PCN), shall remain authorized in accordance with the original terms and conditions of those authorizations, including their terms, GCs, and any special conditions provided in a written verification.

b. Activities authorized pursuant to 33 CFR 330.3 (activities occurring before certain dates) are not affected by these GPs.

**46. Duration of Authorization.**

These GPs expire on June 1, 2028. Activities authorized under these GPs will remain authorized until the GPs expire, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 325.2(e)(2). Activities authorized under GPs 1-25 that have either commenced (i.e., are under construction) or are under contract to commence in reliance upon this authorization will have until June 1, 2029 to complete the work. If requested by USACE, the permittee shall furnish documentation that demonstrates the project was under construction or under contract to commence by June 1, 2028. If work is not completed before June 1, 2029, the permittee must contact USACE. The USACE may issue a new authorization provided the project meets the terms and conditions of the MA GPs in effect at the time. Activities completed under the SV or PCN authorizations of these GPs will continue to be authorized after their expiration date.

## SECTION V: MITIGATION STANDARDS

### 1. Mitigation Types

For all activities, applicants must (a) demonstrate how the project has been designed to avoid or minimize impacts to aquatic resources; and (b) describe measures taken to avoid or minimize impacts to aquatic resources through construction techniques and/or site access. Please see https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/ for assistance with preparing mitigation in accordance with the 2008 Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (33 CFR 332.3), hereafter referred to as "2008 Mitigation Rule."

*Avoidance* - Avoidance of impacts (direct and indirect) to aquatic resources means that project activities would not result in the placement of fill material or installation of a structure that could impact the resource area. Avoidance can include, but is not limited to, designing the project to avoid impacts to all or a portion of the aquatic resource areas.

*Minimization* - Minimization of impacts (direct and indirect) to aquatic resources means that measures are taken to ensure the amount and duration of impacts are limited to the maximum extent practicable. There are many minimization measures that could be implemented, prior to, during, or after the proposed activity, to ensure impacts are minimized. Examples include, but are not limited to:

- Permanent preservation of avoided aquatic features and buffer zone, in perpetuity. In these cases, the preserved area would be under a conservation easement and managed by conservation oriented third-party manager.
- Utilization of best management practices (BMPs) to ensure impacts are limited, and do not result in adverse impacts to the integrity and long-term functions of preserved/avoided features.

*Compensatory Mitigation* - Compensatory mitigation is generally required for PCN activities in which the impacts to the aquatic resources have been avoided and minimized to the maximum extent practicable but would still result in unavoidable adverse effects to the environment that are considered more than minimal or are contrary to the public interest. *Whatever the case may be, compensatory mitigation is no substitute for avoidance and minimization.*

### 2. Thresholds for Compensatory Mitigation

The basic objective of compensatory mitigation in the USACE Regulatory Program is to offset environmental losses resulting from unavoidable impacts to waters of the U.S. authorized by Department of the Army permits. **The following compensatory mitigation thresholds apply to all PCN activities that result in loss[1] of the resource area types listed below. Activities[2] in waters of the U.S. associated with the restoration, enhancement, and establishment of tidal and non-tidal aquatic resources are not considered loss and are not subject to the thresholds below.** Thresholds for different resource areas may not be combined to exceed 5,000 SF of total loss of all waters. The USACE will continue to evaluate projects on a case-by-case basis, and may in some cases require compensatory mitigation below these thresholds (e.g. minor impacts that add to a cumulative loss).

[1] See definition of loss in Section VII.
[2] These activities must result in net increases in aquatic resource functions and services to be exempted from the thresholds above.

| Compensatory Mitigation Thresholds in Massachusetts | | |
|---|---|---|
| **Resource Area** | **Non-Tidal Threshold** | **Tidal Threshold** |
| Stream | 200 LF | 200 LF |
| Bank Stabilization | 500 LF | 500 LF |
| Open Water | Project Dependent | Project Dependent |
| Wetland | 5,000 SF | 500 SF |
| Vernal Pool | All | N/A |
| SAV | Project dependent | 25 SF |
| Mudflat | N/A | 1,000 SF |
| Intertidal | N/A | 1,000 SF |

These thresholds can be utilized to determine at what point compensatory mitigation is required but are not used to determine how much mitigation may be needed to offset impacts to resources. Per the 2008 Mitigation Rule (33 CFR 332.3(f)(1)) "the amount of required compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions. In cases where appropriate functional or condition assessment methods or other suitable metrics are available, these methods should be used where practicable to determine how much compensatory mitigation is required. If a functional or condition assessment or other suitable metric is not used, a minimum one-to-one acreage or linear foot compensation ratios must be used."

### 3. Compensatory Mitigation Hierarchy

Compensatory mitigation should follow the hierarchy as outlined in 33 CFR 332.3(b)(2-6) or current regulation. This hierarchy in order of preference includes: (1) Mitigation Bank credits, (2) In-Lieu Fee program credits, (3) permittee-responsible mitigation under a watershed approach, (4) permittee-responsible mitigation through on-site and in-kind mitigation, and (5) permittee-responsible mitigation through off-site and/or out-of-kind mitigation. If the proposed mitigation deviates from this mitigation hierarchy, the applicant **must** justify in writing why the proposed mitigation is environmentally preferable to the preferred method of compensatory mitigation (See 2008 Mitigation Rule). **In order for your application to be considered complete, you must provide a statement that discusses how your project will compensate for the loss or impact to aquatic resources.** If you are proposing permittee responsible mitigation, the 12 components of a mitigation plan (33 CFR 332.4(c)(2-14) must be addressed for your application to be considered complete. Prospective applicants are encouraged to contact USACE with questions at any time. Addressing the 12 components of a mitigation plan is commensurate with the amount of compensatory mitigation required, and USACE can assist prospective applicants with the level of information needed to satisfy each component.

For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee.

### 4. In-Lieu Fee (ILF)

The purchase of credits from the Massachusetts In-Lieu Fee Program (MA ILFP) is the ***preferred*** method of compensatory mitigation in Massachusetts since, as of the issuance date of this GP, there are no mitigation banks available in Massachusetts. The applicant shall develop a mitigation plan that addresses the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

The MA ILFP is administered by the Massachusetts Department of Fish & Game (DFG) in accordance with the 2008 Mitigation Rule at 33 CFR 332. The Mitigation Rule governs in-lieu fee compensatory mitigation associated with USACE permits under §404 of the Clean Water Act and/or §9 or §10 of the Rivers and Harbors Act of 1899.

MA ILFP Website: https://www.mass.gov/in-lieu-fee-program

Acceptance of an ILF payment into the ILFP established by the 2014 MA ILFP Instrument (link below) is an acknowledgement by DFG that it assumes all legal responsibility for satisfying the mitigation requirements of the USACE (i.e., the implementation, performance, and long-term management and monitoring of the compensatory mitigation project(s) approved under this Instrument and subsequent Compensatory Mitigation Plans). This transfer of legal responsibility is established by: 1) the approval of this In-Lieu Fee Instrument; 2) receipt by the district engineer of a Notice of Credit Sale and Transfer of Legal Responsibility to DFG that is signed by the DFG and the permittee and dated; and 3) the transfer of fees from the permittee to DFG.

MA ILFP Fact Sheet: https://www.mass.gov/files/documents/2017/01/sj/ilfp-fact-sheet-ma-ilfp-fees.pdf

MA ILFP Instrument: https://www.mass.gov/files/documents/2016/08/nd/ilfp-final-instrument-dfg.pdf

**5. Permittee-Responsible**

The USACE may determine that the proposed permittee-responsible compensatory mitigation is appropriate on a case-by-case basis. As described in the Compensatory Mitigation Hierarchy section above, applicants must justify in writing why the proposed mitigation is environmentally preferable to the purchase of ILF credits. Applicants are encouraged to contact the USACE prior to submission of a permit application to seek further guidance regarding USACE mitigation requirements.

Applicants will demonstrate their proposed compensatory mitigation in writing by addressing the 12 components of a mitigation plan (33 CFR 332.4(c)(2-14). *Please note that all elements must be addressed, or the permit application will be deemed incomplete.* In certain circumstances, the district engineer may determine that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). Guidance on how to address these components can be found on the New England District Mitigation webpage: https://www.nae.usace.army.mil/Missions/Regulatory/Mitigation/

Performance standards will be used to measure the successfulness of the mitigation project. A successful mitigation project is one that is self-sustaining. For a mitigation project that will restore, enhance, or create wetlands, proper performance standards must address hydrology, hydric soils, and hydrophytic vegetation. The mitigation proposal must include an explanation of quantitative methods used to measure the success of performance standards (i.e., percent cover may be measured using vegetation plots, hydrology may be measured using data loggers, soil cores may be taken and evaluated for hydric soil indicators).

Monitoring methods should include quantitative sampling methods following established, scientific protocols. Sampling documentation, as part of monitoring reports, should include maps and coordinates (also shapefiles, if available) showing locations of sampling points, transects, quadrats, etc. In addition, permanent photo stations should be established coincident with sampling locations.

## SECTION VI: FEDERAL & STATE AGENCY CONTACT INFORMATION & ORGANIZATIONAL WEBSITES

### Federal Agencies

U.S. Army Corps of Engineers
Regulatory Division
696 Virginia Road
Concord, Massachusetts 01742-2751
(978) 318-8338 (phone); (978) 318-8303 (fax)
www.nae.usace.army.mil/missions/regulatory

National Marine Fisheries Service
55 Great Republic Drive
Gloucester, Massachusetts 01930
(978) 281-9300 (phone)
(*Federal endangered species & EFH)*

National Park Service
15 State Street
Boston, Massachusetts 02109
(617) 223-5191 (phone)
(*Wild and Scenic Rivers*)

Chief, Risk Analysis Branch
FEMA Region 1
99 High Street, 6th Floor
U.S. Department of Homeland Security
Boston, Massachusetts 02110
(617) 956-7576 (phone)

U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP06–3)
Boston, Massachusetts 02109-3912
(617) 918-1692 (phone)

U.S. Army Corps of Engineers
Navigation Division – Section 408
696 Virginia Road
Concord, Massachusetts 01742-2751
*See link below for contact information:*
https://www.nae.usace.army.mil/Missions/Section-408/

U.S. Fish & Wildlife Service
70 Commercial Street, Suite 300
Concord, New Hampshire 03301
(603) 223-2541 (phone)
*(Federal endangered species)*

Bureau of Ocean and Energy Management
1849 C Street, NW
Washington D.C. 20240
202-208-6474 (phone)
(*Offshore Wind Facilities)*

Commander (dpb)
First Coast Guard District
Battery Building
One South Street
New York, New York 10004-1466
(212) 514-4331 (phone); (212) 514-4337 (fax)
(*Bridge permits*)

**State Agencies in Massachusetts**

| Massachusetts Department of Environmental Protection (MassDEP) | |
|---|---|
| DEP Division of Wetlands & Waterways | 100 Cambridge Street, Suite 900<br>Boston, Massachusetts 02114<br>(617) 292-5695 |
| Northeast Region | 150 Presidential Way, Suite 300<br>Woburn, Massachusetts 01801<br>(978) 694-3200 |
| Southeast Region | 20 Riverside Drive, Route 105<br>Lakeville, Massachusetts 02347<br>(508) 946-2800 |
| Central Region | 8 New Bond Street<br>Worcester, Massachusetts 01606<br>(508) 792-7650 |
| Western Region | 436 Dwight Street<br>Springfield, Massachusetts 01103<br>(413) 784-1100 |

| Massachusetts Office of Coastal Zone Management (CZM)<br>Emails may be sent to: czm@mass.gov | |
|---|---|
| MA Office of Coastal Zone Management | 100 Cambridge Street, Suite 900<br>Boston, Massachusetts 02114<br>(617) 626-1200 |
| North Shore Region | 2 State Fish Pier<br>Gloucester, Massachusetts 01930<br>(978) 281-3972 |
| South Shore Region | 175 Edward Foster Road<br>Scituate, Massachusetts 02066 |
| Cape Cod and Islands Region | 3195 Main Street, P.O. Box 220<br>Barnstable, MA 02630 |
| South Coastal Region | 81-B County Road, Suite E<br>Mattapoisett, MA 02739 |

| Massachusetts Historical Commission (MHC) | |
|---|---|
| Office Location: | 220 Morrisey Boulevard<br>Boston, Massachusetts 02125<br>(617) 727-8470 |

| Massachusetts Board of Underwater Archaeological Resources (BUAR)<br>Emails may be sent to: david.s.robinson@mass.gov | |
|---|---|
| Office Location: | 100 Cambridge Street, Suite 900<br>Boston, Massachusetts 02114<br>(617) 626-1014 |

## SECTION VII: Definitions & Acronyms

**Artificial or Living Reef:** A structure which is constructed or placed in waters for the purpose of enhancing fishery resources and commercial and recreational fishing opportunities.
**Attendant Features:** Occurring with or as a result of; accompanying.
**Biodegradable:** A material that decomposes into elements found in nature within a reasonably short period of time and will not leave a residue of plastic or a petroleum derivative in the environment after degradation. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Examples of biodegradable materials include jute, sisal, cotton, straw, burlap, coconut husk fiber (coir) or excelsior. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation. Photodegradable, UV degradable or Oxo-(bio)degradable plastics are not considered biodegradable under this GP.
**Boating facilities:** These provide, rent or sell mooring space, such as marinas, yacht clubs, boat yards, dockominiums, municipal facilities, land/home owners, etc. Not classified as boating facilities are piers shared between two abutting properties or municipal mooring fields that charge an equitable user fee based on the actual costs incurred.
**Compensatory mitigation:** The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. Must comply with the applicable provisions of 33 CFR 332. See also the New England District Compensatory Mitigation Guidance at http://www.nae.usace.army.mil/Missions/Regulatory/Mitigation.aspx.
**Construction mats:** Constructions, swamp and timber mats (herein referred to as “construction mats”) are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they are installed temporarily or permanently.
**Cumulative Impacts:** The impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.1). Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. See 40 CFR 230.11(g).
**Currently serviceable:** Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.
**Dredging:**
*Improvement Dredging*: For the purposes of these GPs, this is dredging deeper than previously authorized by the USACE and dredged under that authorization.
*Maintenance Dredging*: For the purposes of these GPs, this is dredging from an area previously authorized by the USACE and dredged under that authorization. The USACE may require proof of authorization and dredging. Maintenance dredging typically refers to the routine removal of accumulated sediment to maintain the design depths of serviceable navigation channels, harbors, marinas, boat launches and port facilities. Maintenance dredging is conducted for navigational purposes and does not include any expansion of the previously dredged area. The USACE may

review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS, shellfish, etc.
*New Dredging*: For the purposes of these GPs, this is a) first time the USACE authorizes dredging of a particular location or b) dredging has not occurred for an extended period of time, and this has allowed for aquatic resources (i.e., eelgrass, shellfish, etc.) to redevelop in the area.
**Dredged material & discharge of dredged material:** These are defined at 33 CFR 323.2(c) and (d). The term dredged material means material that is excavated or dredged from waters of the U.S.
**Enhancement:** The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s) but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.
**Ephemeral stream:** A stream with flowing water only during, and for a short duration, after precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.
**Erosion Controls:** Appropriate soil erosion, sediment and turbidity controls include cofferdams, bypass pumping around barriers immediately up and downstream of the work footprint (i.e., dam and pump), installation of sediment control barriers (i.e., silt fence, vegetated filter strips, geotextile silt fences, filter tubes, erosion control mixes, hay bales or other devices) downhill of all exposed areas, stream fords, retention of existing vegetated buffers, application of temporary mulching during construction, phased construction, and permanent seeding and stabilization, etc.
**Establishment (creation):** The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area (33 CFR 332.2).
**Expansions:** Work that increases the footprint of fill, structures, depth of basin or drainage features, or floats, or slip capacity.
**Essential Fish Habitat (EFH):** The Federal Magnuson-Stevens Fishery Management and Conservation Act broadly defines EFH to include those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. See www.greateratlantic.fisheries.noaa.gov/habitat for more information.
**Fill material & discharge of fill material:** Material placed in waters of the U.S. where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S. Fill material does not include any pollutant discharged into the water primarily to dispose of waste. These are defined at 33 CFR 323.2 (e) & (f).
**Federal navigation projects (FNPs):** These areas are maintained by the USACE; authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms; and comprised of USACE Federal anchorages, Federal channels and Federal turning basins. The buffer zone is equal to three times the authorized depth of a FNP. The following are FNPs in MA and more information, including the limits, is provided at www.nae.usace.army.mil/missions/navigation >> Navigation Projects:

- Andrews River, Harwich, MA
- Aunt Lydia's Cove
- Beverly Harbor
- Boston Harbor
- Buttermilk Bay Channel
- Canapitsit Channel
- Cape Cod Canal
- Chatham Harbor
- Cohasset Harbor
- Cross Rip Shoals, Nantucket Sound
- Cuttyhunk Harbor
- Dorchester Bay and Neponset River
- Duxbury Harbor
- Edgartown Harbor
- Essex River
- Fall River Harbor
- Falmouth Harbor
- Gloucester Harbor and Annisquam River
- Green Harbor
- Hingham Harbor
- Hyannis Harbor
- Ipswich River
- Island End River (Chelsea, MA)
- Kingston Harbor
- Lagoon Pond
- Little Harbor Woods Hole

Lynn Harbor
Malden River
Menemsha Creek
Merrimack River
Mystic River
Nantucket Harbor of Refuge
New Bedford and Fairhaven Harbor
Newburyport Harbor
Oak Bluffs Harbor
Pigeon Cove Harbor
Plymouth Harbor
Pollock Rip Shoals, Nantucket Sound
Provincetown Harbor
Red Brook Harbor
Rockport Harbor
Salem Harbor
Sandy Bay Harbor of Refuge
Saugus River
Scituate Harbor
Sesuit Harbor
Taunton River
Vineyard Haven Harbor
Wareham Harbor
Wellfleet Harbor
Westport River and Harbor
Weymouth Back River
Weymouth Fore and Town Rivers
Winthrop Harbor
Woods Hole Channel

**Flume:** An open artificial water channel, in the form of a gravity chute, which leads water from a diversion dam or weir alongside a natural flow. A flume can be used to measure the rate of flow.
**FNP buffer zone:** The buffer zone of a USACE Federal Navigation Project (FNP) is equal to three times the authorized depth of the FNP.
**Frac out:** During horizontal directional drilling (HDD) operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface and may affect surface waters.
**Ground disturbance:** Any activity that compacts, relocates, overturns, removes, mixes, or otherwise disturbs the ground, including under water. Ground disturbance can be caused by the use of hand tools (shovels, pick axe, posthole digger, etc.), heavy equipment (excavators, backhoes, bulldozers, dredgers, trenching and earthmoving equipment, etc.), and heavy trucks (large four wheel drive trucks, dump trucks and tractor trailers, etc.). Trenching, bulldozing, dredging, excavating, scraping, and plowing are typical examples of ground disturbance activities.
**Height:width ratio:** The height of structures shall at all points be equal to or exceed the width of the deck. For the purpose of this definition, height shall be measured from the marsh substrate to the bottom of the longitudinal support beam.
**High Tide Line (HTL):** The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides 58 that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds. (33 CFR 328). Refer to the highest predicted tide for the current year at the nearest NOAA tide gage. https://tidesandcurrents.noaa.gov/map/index.html
**Historic Property:** Any prehistoric or historic site (including archaeological sites), district, building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).
**Impacts:**
*Direct Impacts:* Effects that are caused by the activity and occur at the same time and place (40 CFR 1508.7).
*Indirect impacts:* Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.
*Secondary impacts:* Effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.

Information about secondary effects on aquatic ecosystems shall be considered prior to the time final section 404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are: aquatic areas drained, flooded, fragmented; fluctuating water levels in an impoundment and downstream associated with the operation of a dam; septic tank leaching and surface runoff from residential or commercial developments on fill; and leachate and runoff from a sanitary landfill located in waters of the U.S. See 40 CFR 230.11(h).

**Incidental Fallback:** Incidental fallback is the redeposit of small volumes of dredged material that is incidental to excavation activity in waters of the U.S. when such material falls back to substantially the same place as the initial removal (33 CFR 323.2(d)(2)(iii)).

**In the dry:** Work that is done under dry conditions, e.g., work behind cofferdams or when the stream or tide is waterward of the work.

**Independent utility:** A test to determine what constitutes a single and complete non-linear project in the USACE Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

**Individual permit:** A Department of the Army authorization that is issued following a case-by-case evaluation of a specific structure or work in accordance with the procedures of 33 CFR 322, or a specific project involving the proposed discharge(s) in accordance with the procedures of 33 CFR 323, and in accordance with the procedures of 33 CFR 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.

**Intermittent stream:** An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

**Intertidal:** The area in between mean low water and the high tide line.

**Living reef:** See the definition of “artificial or living reef.”

**Living shoreline:** A term used to describe a low-impact approach with a substantial biological component to shoreline protection and restoration along coastal shores, riparian zones, lacustrine fringe wetlands, or oyster or mussel reef structures. This approach integrates natural features to restore, enhance, maintain, or create habitat, functions, and processes while also functioning to mitigate flooding or shoreline erosion. Living shorelines may stabilize banks and shores with small fetch and gentle slopes that are subject to low-to mid-energy waves. A living shoreline has a footprint that is made up mostly of native material. It incorporates vegetation or other living, natural “soft” elements alone or in combination with some type of harder shoreline structure (e.g., oyster or mussel reefs or rock sills) for added protection and stability. Living shorelines should maintain the natural continuity of the land-water interface and retain or enhance shoreline ecological processes.

**Loss of waters of the United States:** Waters of the U.S. that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the U.S. is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for a GP; it is not a net threshold that is calculated after considering compensatory mitigation that maybe used to offset losses of aquatic functions and services. Waters of the U.S. temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the U.S. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the U.S.

**Maintenance:** The repair, rehabilitation, or in-kind replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3 – "Activities occurring before certain dates," provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification. Maintenance includes minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards that are necessary to make repair, rehabilitation, or replacement are authorized. Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.
**Maintenance Exemption**: In accordance with 33 CFR 323.4(a)(2), any discharge of dredged or fill material that may result from any of the following activities is not prohibited by or otherwise subject to regulation under Section 404 of the CWA: "Maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures. Maintenance does not include any modification that changes the character, scope, or size of the original fill design."
**Mean high water:** Line on the shore reached by the plane of the average high water. Where precise determination of the actual location of the line becomes necessary, it must be established by survey with reference to the available tidal datum, preferably averaged over a period of 18.6 years. Less precise methods, such as observation of the "apparent shoreline" which is determined by reference to physical markings, lines of vegetation, or changes in type of vegetation, may be used only where an estimate is needed of the line reached by the mean high water.
**Mechanized land clearing:** Land clearing activities using mechanized equipment such as backhoes or bulldozers with sheer blades, rakes or discs constitute point source discharges and are subject to section 404 jurisdiction when they take place in wetlands or waters of the U.S (Regulatory Guidance Letter 90-05).
**Metallic mineral:** Any ore or material to be excavated from the natural deposits on or in the earth for its metallic mineral content to be used for commercial or industrial purposes. "Metallic mineral" does not include thorium or uranium.
**Minor deviations:** Deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards, which are necessary to make repair, rehabilitation, or replacement are permitted, provided the adverse environmental effects resulting from such repair, rehabilitation, or replacement are minimal.
**Natural Rocky Habitats:** Intertidal and subtidal substrates of pebble-gravel, cobble, boulder, or rock ledge and outcrops. Manufactured stone (e.g., cur or engineered riprap) is not considered a natural rocky habitat. Natural rocky habitats are either found as pavement (consolidated pebble-gravel, cobble, or boulder areas) or as a mixture with fines (i.e., clay and sand) and other substrates. Rocky habitats as EFH are defined as follows: (1) All pebble-gravel, cobble, or boulder pavements; (2) Pebble-gravel mixed with fines: mixed substrate of pebble-gravel and fines where pebble-gravel is an evident component of the substrate (either through visual observation or within sediment samples). Sediment samples with a content of 10% or more of pebble-gravel in the top layer (6-12 inches) should be delineated; (3) Scattered cobble, scattered boulder, scattered cobble/boulder: mixed substate of cobble and/or boulder and other substrates. The aerial extent of cobbles and/or boulders should be delineated; and (4) All rock ledge outcrops: area should be delineated along the edge of the ledge/outcrop (as defined by NMFS Habitat and Ecosystems Services Branch, Gloucester, MA).
**Navigable waters or Navigable waters of the U.S.:** These waters are subject to section 10 of the Rivers and Harbors Act of 1899 and are defined as those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce (33 CFR Part 329). Work or structures in navigable

waters require permits pursuant to §9 and §10 of the Rivers and Harbors Act of 1899. Also see the definition of “waters of the U.S.” below.
Note: Currently the following non-tidal waters have been determined to be navigable waters of the U.S. subject to permit jurisdiction in Massachusetts: Merrimack River, Connecticut River, and Charles River to the Watertown Dam.
**Nearshore disposal:** This is defined in the USACE Coastal Engineering Manual as “(1) In beach terminology an indefinite zone extending seaward from the shoreline well beyond the breaker zone. (2) The zone which extends from the swash zone to the position marking the start of the offshore zone, typically at water depths of the order of 20m.” A nearshore berm is an artificial berm built in shallow water using dredged material. Often, the berm is intended to renourish the adjacent and downdrift shore over time under the influence of waves and currents.
**Non-regulated activity:** Only structures or fills that were previously authorized and are in compliance with the terms and condition of the original authorization can be maintained as a non-regulated activity under 33 CFR 323.4(a)(2). Minor deviations from the previously authorized footprint do not qualify as a non-regulated activity and require new authorization from the USACE. The state’s maintenance provisions may differ from the USACE and a project may require reporting and written authorization from the state.
**Non-tidal wetlands:** A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the HTL (*i.e.,* spring HTL). Also see the definition of “Waters of the U.S.” below.
**Oil or natural gas pipeline:** Any pipe or pipeline for the transportation of any form of oil or natural gas, including products derived from oil or natural gas, such as gasoline, jet fuel, diesel fuel. heating oil, petrochemical feedstocks, waxes, lubricating oils, and asphalt.
**Ordinary High Water Mark (OHWM):** A line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas. See 33 CFR 328.3(e).
**Overall project:** The overall project, for purposes of these GPs, includes all regulated activities that are reasonably related and necessary to accomplish the project purpose. Also see the definition of “single and complete linear project.”
**Perennial stream**: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
**Practicable:** Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.
**Permanent impacts:** Permanent impacts means waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody.
**Preconstruction notification (PCN):** A request submitted by the applicant to the USACE for confirmation that a particular activity is authorized by these GPs. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Preconstruction notification may be required by the terms and conditions of these GPs. A PCN may be voluntarily submitted in cases where PCN is not required and the applicant wants confirmation that the activity is authorized under these GPs.
**Preservation:** The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions (33 CFR 332.2).
**Real estate subdivision:** Includes circumstances where a landowner or developer divides a tract of land into smaller parcels for the purpose of selling, conveying, transferring, leasing, or

developing said parcels. This would include the entire area of a residential, commercial or other real estate subdivision, including all parcels and parts thereof

**Reconfiguration zone:** A USACE authorized area in which permittees may rearrange pile-supported structures and floats without additional authorizations. A reconfiguration zone does not grant exclusive privileges to an area or an increase in structure or float area.

**Re-establishment:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in again in aquatic resource area and functions (33 CFR 332.2).

**Reference Site:** Reference sites - Compensatory restoration, rehabilitation, and creation mitigation projects should seek to duplicate the features of reference aquatic resources or enhance connectivity with adjacent natural upland and aquatic resource landscape elements. Performance standards related to reference sites are encouraged. Mitigation project sites must be selected based on their ability to be, and continue to be, resistant to disturbance from the surrounding landscape, by locating them adjacent to refuges, buffers, green spaces, and other preserved natural elements of the landscape. In general, aquatic resource mitigation projects must be designed to be self-sustaining, natural systems within the landscape and climate in which they are located, with little or no ongoing maintenance and/or hydrologic manipulation.

**Rehabilitation:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area (33 CFR 332.2).

**Restoration:** The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation (33 CFR 332.2).

**Riffle and pool complex:** Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

**Sedimentation:** Sedimentation is defined as the process of deposition of a solid material from a state of suspension. Deposited sediments may accumulate and have temporal impacts to aquatic resource areas. See secondary effects definition above. For the purposes of this document, “greater than minimal sedimentation” is generally not considered to occur when using proper erosion controls (GC 25) or when sedimentation is considered “de minimis” 33 CFR 323.2(d)(5).

**Single and complete linear project:** A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/ developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for the purposes of these GPs. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

**Single and complete non-linear project:** For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete

non-linear project must have independent utility (see the definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in a GP authorization.
**Special aquatic sites (SAS):** These include inland and saltmarsh wetlands, mud flats, vegetated shallows, sanctuaries and refuges, coral reefs, and riffle and pool complexes. These are defined at 40 CFR 230.3 and listed in 40 CFR 230 Subpart E.
**Streambed:** The stream substrate between the OHW marks on each side. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the streambed, but outside of the OHW marks, are not considered part of the streambed.
**Stream channelization:** The manipulation of a stream’s course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the U.S.
**Structure:** An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.
**Temporal loss:** The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site(s) (33 CFR 332.2).
**Temporary impacts:** Temporary impacts include, but are not limited to, jurisdictional waters that are temporarily filled, flooded, excavated, or drained because of the regulated activity. Impacts are considered temporary when they are removed immediately upon completion of the activity. Note: An impact is considered temporary when the aquatic resource is restored to pre-project conditions, but effects to archaeological and/or cultural resources may be permanent in duration.
**Tidal wetlands:** A wetland that is subject to the ebb and flow of the tide. See the definition of “Waters of the U.S.” below.
**Tide gates:** Structures such as duckbills, flap gates, manual and self-regulating tide gates, etc. that regulate or prevent upstream tidal flows.
**Turbidity:** A measure of the level of particles such as sediment, plankton, or organic by-products, in a body of water. As the turbidity of water increases, it becomes denser and less clear due to a higher concentration of these light-blocking particles. Suspended solids are more likely to carry toxic chemicals, and can also negatively affect aquatic organisms, water temperature, and dissolved oxygen levels.
**Utility line:** Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose that is not oil, natural gas, or petrochemicals. A utility line also includes any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term ‘utility line’ does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.
**Vegetated shallows:** Permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as eelgrass *(Zostera marina)* and widgeon grass (*Rupia maritima*) in marine systems (does not include salt marsh) as well as a number of freshwater species in rivers and lakes. These are a type of SAS defined at 40 CFR 230.43. Vegetated shallows are commonly referred to as submerged aquatic vegetation or SAV. Vegetated shallow survey guidance is located at www.nae.usace.army.mil/missions/regulatory /jurisdiction-and-wetlands. Maps of vegetated shallows in Massachusetts are located at www.nae.usace.army.mil/missions/regulatory/state-general-permits/massachusetts-general-permit.
**Vernal pools:** For the purposes of these GPs, vernal pools are depressional wetland basins that typically dry up in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In

most years, vernal pools support one or more of the following obligate indicator species: wood frog, spotted salamander, blue-spotted salamander, marbled salamander, Jefferson's salamander and fairy shrimp. However, they should preclude sustainable populations of predatory fish.

**Water diversions:** Water diversions are activities such as bypass pumping (e.g., "dam and pump") or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions.

**Waters of the United States (U.S.)** These waterbodies are the waters where permits are required for the discharge of dredged or fill material pursuant to §404 of the CWA. These waters include but are not limited to navigable waters of the U.S. and tidal wetlands and include many non-tidal wetlands and other waterbodies. See definitions for navigable waters of the U.S., tidal wetlands, waterbody, and non-tidal wetlands. (33 CFR 328)

**Waterbody:** Examples of "waterbodies" include oceans, coastal waters, rivers, streams, ditches, lakes, ponds, and wetlands. If a wetland is adjacent to a waterbody determined to be a water of the U.S., that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).

**Weir:** A barrier across a river designed to alter the flow characteristics. In most cases, weirs take the form of a barrier, smaller than most conventional dams, across a river that causes water to pool behind the structure and allows water to flow over the top. Weirs are commonly used to alter the flow regime of a river, prevent flooding, measure discharge and help render a river navigable.

**Wetland:** Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. The Corps of Engineers Wetlands Delineation Manual in conjunction with the associated regional supplement should be used to determine if a wetland is present and delineate wetland boundaries.

**Acronyms**

| | |
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| BMPs | Best Management Practices |
| BUAR | Massachusetts Board of Underwater Archaeological Resources |
| CWA | Clean Water Act |
| CZM | Coastal Zone Management |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| EFH | Essential Fish Habitat |
| FNP | Federal Navigation Project |
| GC | General Condition |
| GP | General Permit |
| HTL | High Tide Line |
| IP | Individual Permit |
| LID | Low impact development |
| MassDEP | Massachusetts Department of Environmental Protection |
| MA DMF | Massachusetts Division of Marine Fisheries |
| MHC | Massachusetts Historical Commission |
| MHW | Mean High Water |
| MLLW | Mean Lower Low Water |
| MLW | Mean Low Water |
| NHPA | National Historic Preservation Act |
| NMFS | National Marine Fisheries Service |
| OHW | Ordinary High Water Mark |
| PCN | Preconstruction Notification |
| SAS | Special Aquatic Sites |
| SF | Square Feet |
| SV | Self-Verification |
| SHPO | State Historic Preservation Officer |
| THPO | Tribal Historic Preservation Officer |
| USFWS | U.S. Fish and Wildlife Service |
| USCG | U.S. Coast Guard |
| USFS | U.S. Forest Service |
| USGS | U.S. Geological Service |
| WQC | Water Quality Certification |

## Appendix A: Guidance for NHPA Section 106 Compliance in Massachusetts

### 1. Purpose & Applicability

Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA) (54 U.S.C § 306108), requires Federal agencies to take into account the effects of their undertakings on Historic Properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on such undertakings. Therefore, in order for an activity to be eligible for authorization under the 2023 Massachusetts General Permit, the USACE must consider the effect the activity may have on historic properties. Historic properties may include, but are not limited to, historic districts, archaeological districts, sites, buildings, structures, objects, sacred sites, traditional cultural places, and traditional cultural landscapes that are included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).

This guidance applies to projects that require authorization under Section 404 of the Clean Water Act (33 U.S.C. § 1344) and/or Section 10 of the Rivers and Harbors Act (33 U.S.C. §403) and will assist applicants when evaluating and documenting the presence of historic properties within or near their project site(s). The prospective applicant will evaluate their proposed project using the criteria below to determine if their project has the potential to affect historic properties and if so, whether or not historic properties are present or are likely to be present. All activities authorized under these GPs shall follow the terms outlined in General Condition 14: Historic Properties and General Condition 6: Tribal Rights & Burial Sites. Prospective applicants shall complete their due diligence according to the procedures below for their application to be deemed complete.

### 2. No Potential to Affect Historic Properties

Certain activities do not have the potential to cause effects on historic properties, assuming such historic properties were present, based on the nature of the activity and site-specific conditions. Therefore, these activities **do not** require historic property identification efforts or notification of the SHPO, THPOs, and/or BUAR under Section 106. The USACE has determined the following activities within the stated parameters have no potential to affect historic properties:

| General Permit | Activity Parameters |
|---|---|
| 1 | Temporary buoys, markers and similar structures that are placed during winter events on ice and removed before spring thaw. |
| 2 | Repair or rehabilitation of structures that are less than 45 years in age. Any temporary structures or fills or work necessary to complete repairs or rehabilitation must not result in any ground disturbance. |
| 3 | Maintenance and replacement of moorings that are less than 45 years in age. |
| 6 | Maintenance, repair, replacement, or removal of utility lines, oil or natural gas pipelines, outfall or intake structures, and/or appurtenant features that are less than 45 years in age when all access, staging, and ground disturbance is strictly limited to previously disturbed areas (including any previous ground disturbance). Replacement must be in kind or smaller in size.<br>Installation of tide gates on outfall structures that are less than 45 years in age. |
| 7 | Maintenance dredging of previously dredged areas where dredging does not extend beyond the original bottom elevations. |

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| | Disposal of dredged material at an existing established and USACE-approved confined aquatic disposal cell.<br>Beach nourishment in ongoing existing nourishment areas. |
| 11 | Fish and wildlife harvesting and attraction devices and activities. |
| 13 | Cleanup of hazardous and toxic waste materials, including contaminated sediments, that are less than 45 years in age. |
| 16 | Removal of land-based and water-based renewable energy generation facilities and hydropower projects that are less than 45 years in age. |
| 18 | Installation of buoys, floats, racks, trays, nets, lines, tubes, containers, and other structures for previously authorized by the USACE and ongoing aquaculture activities.<br>Discharges of dredged or fill material into tidal or non-tidal waters necessary for shellfish seeding, rearing, cultivating, transplanting, and harvesting activities for previously authorized and ongoing aquaculture activities. |
| 20 | Maintenance activities for existing living shorelines excluding maintenance activities that require new ground disturbance such as excavation or re-sloping of the bank/shoreline. |
| 22 | Reshaping or maintenance of existing drainage ditches less than 45 years in age excluding ditch enlargement. |
| 23 | Placement of temporary and removable linear transportation and wetland/stream crossings that have no ground disturbance prior to placement, during placement, and during removal (i.e., placed on the surface and subsequently removed within one year of placement). |
| 24 | Placement of temporary and removable crossings and cofferdams that have no ground disturbance prior to placement, during placement, and during removal (i.e., placed on the surface and subsequently removed within one year of placement). |
| 25 | Emergency repair of existing structures and/or fills less than 45 years in age. |

**3. Historic Property Identification**

If the activity does not fit under the criteria above, the following historic property identification efforts must be completed to demonstrate compliance with Section 106 of the NHPA. This includes documenting previously identified and unidentified historic properties in the project area.

a. Previously Identified Historic Properties: The prospective applicant shall document if previously identified historic properties are present on or adjacent to the project site by notifying the Massachusetts Historical Commission (MHC) and the Massachusetts Board of Underwater Archaeological Resources (BUAR), as appropriate, of the proposed project. The MHC and BUAR will check their records for the presence of any previously identified historic properties. The following outlines how prospective applicants should notify the MHC and BUAR.

i. The prospective applicant will notify the SHPO and BUAR to identify any previously recorded cultural resources. Applicants shall mail a completed Project Notification Form[18], project narrative, location (coordinates), plans, soil maps, and information on known cultural resources to the MHC. The MHC does not accept submissions via email. Applicants shall email or mail this information to the BUAR when the activity is located in lakes, ponds, rivers, and/or navigable waters in MA. Emailed file attachments should be <10MB. Any files >10MB shall be delivered via a file exchange system or the hard copy documents shall be mailed. Preferred contact information is listed below.

ii. **When sending this information, applicants must also document proof of receipt OR proof the information was delivered.** Proof of receipt constitutes a certified mail receipt, read email receipt, or other mail/email/online tracking services that document the information has reached the intended recipient(s). Proof the information was delivered constitutes a certificate of mailing, email delivery receipt, or other mail/email/online services that document the information was sent at a particular time. When using proof of delivery such (e.g., certificate of mailing), applicants should add 5 days to the 30-day notification period so the mail has time to reach its intended recipient. When using proof of receipt, the applicant may begin the 30-day notification period from the date received by the intended recipient.

iii. When mailing or emailing the application materials, applicants should include the following statement: “Please send responses to this notification directly to the USACE via email: cenae-r-ma@usace.army.mil or address regular mail responses to: Regulatory Division, U.S. Army Corps of Engineers, New England District, 696 Virginia Road, Concord, Massachusetts 01742-2751.” Email responses to the USACE are strongly preferred. The SHPO and BUAR will contact the USACE and cc the applicant(s) within 30 days of receiving the notification if their records indicate that historic properties are located in the project vicinity, and if additional review and/or surveys are recommended to ensure NHPA compliance. If the SHPO and/or BUAR do not respond within 30 days of receiving the notification, is it presumed that no known historic properties are present.

b. Previously Unidentified Historic Properties: The prospective applicant shall evaluate the project site and determine the sensitivity for the presence of historic properties if the project site has not been previously surveyed for cultural resources within the last 10 years. If the sensitivity is determined to be moderate to high, an intensive archaeological and/or architectural survey is required to investigate the potential presence of historic properties. The individual conducting this survey must meet the Secretary of the Interior’s Standards for Professional Qualifications (48 FR 44738-44739) in the discipline relevant to a particular resource type. For example, archeologists should not document and evaluate buildings or structures and architectural historians should not document and evaluate archaeological sites. The identification and qualifications for those participating in any survey and evaluation of resources should be included with the survey results. The criteria listed below are indicators of low sensitivity for the presence of historic properties for consideration when determining if an archaeological or architectural survey is needed.

Low sensitivity indicators:

- Previous archaeological and/or architectural survey within the last 10 years with negative results.
- In a location created in modern times (i.e., built on fill placed within the last 45 years or within an area excavated within the last 45 years).
- USACE has reviewed the project description and determined that a survey is not warranted based on the proposed activity and its location.

State survey guidance and standards are provided in the September 1995 Historic Properties Survey Manual Guidelines for the Identification of Historical and Archaeological Resources in Massachusetts available. State survey guidance and standards for underwater surveys are provided

[18] https://www.sec.state.ma.us/mhc/mhcform/formidx.htm

in the Board of Underwater Archaeological Resources' 2022 Policy Guidance on Archaeological Investigations and Related Survey Standards for the Discovery of Underwater Archaeological Resources. This guidance is available on the NAE Regulatory website: https://www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Massachusetts-General-Permit/.

Please note, a negative result from MHC and/or BUAR does not necessarily mean no historic properties are present. Often proposed project sites have not been previously subject to a survey, so historic properties which may be present have not been previously recorded.

**4. Tribal Coordination**

Prospective applicants shall mail the Project Notification Form, project narrative, location (coordinates), plans with locus map, soil maps, and information on cultural resources to the Wampanoag Tribe of Gay Head (Aquinnah), Mashpee Wampanoag Tribe, Narragansett Indian Tribe, and/or Stockbridge-Munsee Community Band of Mohican Indians with interests in the project location. Preferred tribal contact information, including their respective areas of interest, can be found below. Applicants shall follow the same procedures as identified in Section 3(a)i-iii above when notifying Tribes of the proposed activity. Applicants shall provide the USACE with any responses received from the tribe(s) with their PCN application. If a tribe does not respond within 30 days of receiving the notification, the applicant shall provide USACE with all documentation of tribal outreach with their SV or PCN submission (e.g., emails, letters, phone call log, etc.). If the tribe indicates the presence of a previously unrecorded cultural resource, including a traditional cultural property (TCP) or traditional cultural landscape (TCL), a PCN is required.

**5. Effect Determination**

The project may have the potential to affect historic properties and/or tribal resources if 1) notification recipients respond within 30 calendar days of notification with concerns, 2) historic properties eligible for listing, or potentially eligible for listing in the NRHP, are present or 3) tribal resources are known to be present. The USACE may need to further review the project to confirm potential effects to historic properties and/or tribal resources. A PCN is required for any activity that may affect a historic property.

The USACE may determine the project will have 'no effect' on historic properties (i.e., no historic properties affected) when procedures outlined in Section 3 above are followed and no cultural resources are identified. Similarly, if historic properties are identified and will be completely avoided, the USACE may determine 'no effect.'

**6. Contact Information:**

***Massachusetts Historical Commission***

The Massachusetts Archives Building
220 Morrissey Boulevard
Boston, Massachusetts 02125

No email. Applicants or their representatives must send project information via certified mail and submit the certified mail receipt to the USACE or send via regular mail and submit proof of delivery.

Area of concern: All of Massachusetts.

***Massachusetts Board of Underwater Archaeological Resources (BUAR)***

100 Cambridge Street, Suite 900
Boston, Massachusetts 02114
Email: david.s.robinson@mass.gov

Applicants or their representatives must send project information via email (***strongly preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: All waterbodies in Massachusetts.

***Wampanoag Tribe of Gay Head (Aquinnah)***

Bettina Washington
Tribal Historic Preservation Officer (THPO)
20 Black Brook Road
Aquinnah, Massachusetts 02535
Email: thpo@wampanoagtribe-nsn.gov

Applicants or their representative must send project information via email (***preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: All of Massachusetts.

***Mashpee Wampanoag Tribe***

ATTN: David Weeden
Tribal Historic Preservation Officer (THPO)
483 Great Neck Road South
Mashpee, Massachusetts 02649
Email: 106review@mwtribe-nsn.gov
Cc: David.weeden@mwtribe-nsn.gov

Applicants or their representative must send project information via email (***preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: All of Massachusetts.

***Narragansett Indian Tribe***

ATTN: John Brown
Tribal Historic Preservation Officer (THPO)
Narragansett Indian Longhouse
4425 South County Trail
Charlestown, Rhode Island 02813
Email: tashtesook@aol.com

Applicants or their representative must send project information via email (***preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: Massachusetts east of the Connecticut River.

***Stockbridge-Munsee Community Band of Mohican Indians***

ATTN: Jeff Bendremer
Tribal Historic Preservation Manager
Stockbridge-Munsee Community
Tribal Historic Preservation Extension office
86 Spring Street
Williamstown, Massachusetts 01267
Email: thpo@mohican-nsn.gov

Applicants or their representative must send project information via email (***preferred***) or regular mail and provide proof of receipt or proof of delivery.

Area of concern: West of the Connecticut River and Northfield, Montague, Miller's Falls, Turner's Falls, Sunderland, Amherst, Hadley, South Hadley, Chicopee, Springfield and Longmeadow.

# APPENDIX B PRE-CONSTRUCTION NOTIFICATION

U.S. Army Corps of Engineers (USACE), New England District (NAE)

## PRE-CONSTRUCTION NOTIFICATION (PCN)

**DATA REQUIRED BY THE PRIVACY ACT OF 1974**

**Authority** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.

**Principal Purpose** The information provided will be used in evaluating activities under Pre-Construction Notification procedures within New England.

**Routine Uses** This information may be shared with other federal, state, and local government agencies during the application review process. Submission

**Disclosure** of requested information is voluntary. However, if information is not provided the PCN application cannot be fully evaluated nor can USACE render a permit decision.

**Instructions** The applicant must complete ALL required sections of this document before their submission to USACE. The PCN submission to USACE shall include one set of drawings which show the location and character of the proposed activity, statements that address each required field below, and documentation that supports each field (e.g., emails, letters, description/narrative, phone calls, surveys, reports, etc.). Electronic submissions to the following address are strongly preferred: cenae-r-ma@usace.army.mil. The email subject line shall contain the following: General Permit #, PCN, City/Town, and date submitted. An application that is not completed in full will be returned.

**(ITEMS 1 THRU 4 TO BE FILLED BY USACE)**

| 1. APPLICATION NO. | 2. FIELD OFFICE CODE | 3. DATE RECEIVED | 4. DATE APPLICATION COMPLETE |
|---|---|---|---|
| | | | |

**(ITEMS BELOW TO BE FILLED BY APPLICANT)**

| 5. APPLICANT'S NAME | 8. AUTHORIZED AGENT'S NAME AND TITLE (*agent is not required*) |
|---|---|
| First - Middle - Last - | First - Middle - Last - |
| Company - | Company - |
| E-mail Address - | E-mail Address - |
| 6. APPLICANT'S ADDRESS: | 9. AGENT'S ADDRESS: |
| Address- | Address- |
| City - State - Zip - Country - | City - State - Zip - Country - |
| 7. APPLICANT'S PHONE NOs. with AREA CODE | 10. AGENT'S PHONE NOs. with AREA CODE |
| a. Residence b. Business c. Fax d. Mobile | a. Residence b. Business c. Fax d. Mobile |

**STATEMENT OF AUTHORIZATION**

11. I hereby authorize, _____ to act on my behalf as my agent in the processing of this general permit PCN application and to furnish, upon request, supplemental information in support of this general permit PCN application.

_____ _____

SIGNATURE OF APPLICANT DATE

**NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY**

12. PROJECT NAME or TITLE (*see instructions*)

| 13. NAME OF WATERBODY, IF KNOWN (*if applicable*) | 14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*) |
|---|---|
| 15. LOCATION OF PROPOSED ACTIVITY (*see instructions*) | City: State: Zip: |
| Latitude: °N Longitude: °W | |

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)

State Tax Parcel ID: Municipality:

Section: Township: Range:

17. DIRECTIONS TO THE SITE.

18. IDENTIFY THE SPECIFIC GENERAL PERMIT(S) YOU PROPOSE TO USE:

19. DESCRIPTION OF PROPOSED GENERAL PERMIT ACTIVITY (*see instructions*)

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)

21. PURPOSE OF GENERAL PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)

22. Quantity of Wetlands, Streams, or Other Types of Waters Directly Affected by Proposed General Permit Activity (*see instructions*)

| Area (square feet) | Length (linear feet) | Volume (cubic yards) | Duration | Purpose |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

**Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.**

23. List any other GP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project on any related activity (*see instructions*)

24. If the proposed activity will result in the loss of aquatic resources that exceed those identified in the New England District Compensatory Mitigation Thresholds, explain how the compensatory mitigation requirement will be satisfied. (*see instructions*)

25. Is Any Portion of the General Permit Activity Already Complete? ☐ Yes ☐ No If Yes, describe the completed work:

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed GP activity or utilize the designated critical habitat that might be affected by the proposed GP activity. (*see instructions*)

27. List any historic properties that have the potential to be affected by the proposed GP activity or include a vicinity map indicating the location of the historic property or properties. Attach relevant project information, along with any responses received from project notifications to this submittal. (*see instructions*)

28. For a proposed GP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

29. If the proposed GP activity also requires permission from the USACE pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the USACE district having jurisdiction over that project? ☐ Yes ☐ No

If "yes", please provide the date your request was submitted to the USACE District:

30. Does the activity require a 401 Water Quality Certification (WQC)? If so, specify the type of 401 WQC that is required (general or individual). In cases where an individual 401 WQC is required, provide the date the 401 WQC certification request was submitted to the certifying authority and their contact information.

31. If the terms of the GP(s) you want to use require additional information to be included in the PCN (i.e. sampling and analysis plan), please include that information in this space or provide it on an additional sheet of paper marked Block 30. (*see instructions*)

32. I certify that the information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

| SIGNATURE OF APPLICANT | DATE | SIGNATURE OF AGENT | DATE |
|---|---|---|---|

The Pre-Construction Notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in block 11 has been filled out and signed, the authorized agent.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

**Instructions for Preparing a**

**Department of the Army**

**General Permit (GP) Pre-Construction Notification (PCN)**

**Blocks 1 through 4.** To be completed by the U.S. Army Corps of Engineers.

**Block 5. Applicant' Name.** Enter the name and the e-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the PCN, please attach a sheet of paper with the necessary information marked Block 5.

**Block 6. Address of Applicant.** Please provide the full address of the party or parties responsible for the PCN. If more space is needed, attach an extra sheet of paper marked Block 6.

**Block 7. Applicant Telephone Number(s).** Please provide the telephone number where you can usually be reached during normal business hours.

**Blocks 8 through 11.** To be completed, if you choose to have an agent.

**Block 8. Authorized Agent's Name and Title.** Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, consultant, or any other person or organization. Note: An agent is not required.

**Blocks 9 and 10. Agent's Address and Telephone Number.** Please provide the complete mailing address of the agent, along with the telephone number where they can be reached during normal business hours.

**Block 11. Statement of Authorization.** To be completed by the applicant, if an agent is to be employed.

**Block 12. Proposed General Permit Activity Name or Title.** Please provide a name identifying the proposed GP activity, e.g., Windward Marina, Rolling Hills Subdivision, or Smith Commercial Center.

**Block 13. Name of Waterbody.** Please provide the name (if it has a name) of any stream, lake, marsh, or other waterway to be directly impacted by the GP activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

**Block 14. Proposed Activity Street Address.** If the proposed GP activity is located at a site having a street address (not a box number), enter it in Block 14.

**Block 15. Location of Proposed Activity.** Enter the latitude and longitude of where the proposed GP activity is located. Indicate whether the project location provided is the center of the project or whether the project location is provided as the latitude and longitude for each of the "corners" of the project area requiring evaluation. If there are multiple sites, please list the latitude and longitude of each site (center or corners) on a separate sheet of paper and mark as Block 15.

**Block 16. Other Location Descriptions.** If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality where the site is located.

**Block 17. Directions to the Site.** Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide a description of the location of the proposed GP activity, such as lot numbers, tract numbers, or you may choose to locate the proposed GP activity site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed GP activity site if known. If there are multiple locations, please indicate directions to each location on a separate sheet of paper and mark as Block 17.

**Block 18. Identify the Specific General Permit(s) You Propose to Use.** List the number(s) of the General Permit(s) you want to use to authorize the proposed activity (e.g., GP 4).

**Block 19. Description of the Proposed General Permit Activity.** Describe the proposed GP activity, including the direct and indirect adverse environmental effects of the proposed activity. The description of the proposed activity should be sufficiently detailed for USACE to determine that the adverse environmental effects of the activity will be no more than minimal. Identify the materials to be used in construction, as well as the methods by which the work is to be done.

Provide drawings to show that the proposed GP activity complies with the terms of the applicable GP(s). Drawings should contain sufficient detail to provide an illustrative description of the proposed GP activity, but do not need to be detailed engineering plans. The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 19.

**Block 20: Description of Proposed Mitigation Measures.** Describe any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed GP activity. The description of any proposed mitigation measures should be sufficiently detailed for USACE to determine how the measures would avoid and minimize adverse environmental effects. If adverse effects exceed the New England District compensatory mitigation thresholds, you must document how compensatory mitigation would be satisfied in Block 24.

**Block 21. Purpose of General Permit Activity.** Describe the purpose and need for the proposed GP activity. What will it be used for and why? Also include a brief description of any related activities associated with the proposed project. Provide the approximate dates you plan to begin and complete all work.

**Block 22. Quantity of Wetlands, Streams, or Other Types of Waters Directly Affected by the Proposed General Permit Activity.** For discharges of dredged or fill material into Waters of the U.S., provide the amount of wetlands, streams, or other types of waters filled, flooded, excavated, or drained by the proposed GP activity. For structures or work in Navigable Waters of the U.S. subject to Section 10 of the Rivers and Harbors Act of 1899, provide the amount of navigable waters filled, dredged, occupied by one or more structures (e.g., aids to navigation, mooring buoys) by the proposed GP activity. The area of impact includes the structures or fills with direct or indirect effects to waters of the U.S. The length of impact includes the length of a stream, including is banks, that are directly affected by the structures or fills. The duration of impact should be identified as temporary (xx days) or permanent. The impact purpose should briefly describe what structure or fill is responsible for the impact.

**Block 23. Identify Any Other General Permit(s), Regional General Permit(s), or Individual Permit(s) Used to Authorize Any Part of Proposed Activity or Any Related Activity.** List any other GP(s) or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. For linear projects, list other separate and distant crossings of waters and wetlands authorized by these GPs that do not require PCNs. If more space is needed, attach an extra sheet of paper marked Block 23.

**Block 24. Compensatory Mitigation Statement for Losses Greater Than the New England District Compensatory Mitigation Thresholds.** New England District requires compensatory mitigation at a minimum one for one replacement ratio or greater for all aquatic resource losses that require a PCN and exceed the New England District Compensatory Mitigation Thresholds, unless USACE determines in writing that either some other form of mitigation is more environmentally appropriate or the adverse environmental effects of the proposed GP activity are no more than minimal without compensatory mitigation, and provides an activity specific waiver of this requirement. Describe the proposed compensatory mitigation for wetland losses greater than the New England District Compensatory Mitigation Thresholds or provide an explanation of why USACE should not require wetland compensatory mitigation for the proposed GP activity. If more space is needed, attach an extra sheet of paper marked Block 24.

**Block 25. Is Any Portion of the General Permit Activity Already Complete?** Describe any work that has already been completed for the GP activity.

**Block 26. List the Name(s) of Any Species Listed As Endangered or Threatened under the Endangered Species Act that Might be Affected by the General Permit Activity.** If you are not a federal agency, and if any listed species or designated critical habitat might be affected or is in the vicinity of the proposed GP activity, or if the proposed GP activity is located in designated critical habitat, list the name(s) of those endangered or threatened species that might be affected by the proposed GP activity or utilize the designated critical habitat that might be affected by the proposed GP activity. If you are a Federal agency, and the proposed GP activity requires a PCN, you must provide documentation demonstrating compliance with Section 7 of the Endangered Species Act.

**Block 27. List Any Historic Properties that Have the Potential to be Affected by the General Permit Activity.** If you are not a federal agency, and if any historic properties have the potential to be affected by the proposed GP activity, list the name(s) of those historic properties that have the potential to be affected by the proposed GP activity. Provide all relevant documentation about these historic properties in the PCN submittal. If you are a Federal agency, and the proposed GP activity requires a PCN, you must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

**Block 28. List the Wild and Scenic River or Congressionally Designated Study River if the General Permit Activity Would Occur in such a River.** If the proposed GP activity will occur in a river in the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" under the Wild and Scenic Rivers Act, provide the name of the river. For a list of Wild and Scenic Rivers and study rivers, please visit http://www.rivers.gov/

**Block 29. General Permit Activities that also Require Permission from the USACE Under 33 U.S.C. 408.** If the proposed GP activity also requires permission from the USACE under 33 U.S.C. 408 because it will temporarily or permanently alter, occupy, or use a USACE federal authorized civil works project, indicate whether you have submitted a written request for section 408 permission from the USACE district having jurisdiction over that project.

**Block 30. 401 Water Quality Certification.** As described above, specify if the activity requires a 401 WQC from the certifying authority.

**Block 31. Other Information Required For General Permit Pre Construction Notifications.** The terms of some of the General Permits include additional information requirements for preconstruction notifications:

* Maintenance – information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals.
* Temporary Construction, Access, and Dewatering – a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions.
* Repair of Uplands Damaged by Discrete Events – documentation, such as a recent topographic survey or photographs, to justify the extent of the proposed restoration.
* Commercial Shellfish Aquaculture Activities – (1) a map showing the boundaries of the project area, with latitude and longitude coordinates for each corner of the project area; (2) the name(s) of the species that will be cultivated during the period this GP is in effect; (3) whether canopy predator nets will be used; (4) whether suspended cultivation techniques will be used; and (5) general water depths in the project area (a detailed survey is not required).Dredging – (1) a proposed sampling and analysis plan shall be provided to USACE for approval prior to its execution. Pre-application meetings are encouraged.
* Beach Nourishment – sediment grain size should be determined for the length of the beach where nourishment is proposed. The frequency and locations of sediment sampling shall be sufficient to identify the sediment composition of the beach profile. This data shall be consolidated to generate a sediment gradation curve for each sampled transect. Each sampled transect should also be identified on the project plans (drawings).

If more space is needed, attach an extra sheet of paper marked Box 31.

**Block 32. Signature of Applicant or Agent.** The PCN must be signed by the person proposing to undertake the GP activity, and if applicable, the authorized party (agent) that prepared the PCN. The signature of the person proposing to undertake the GP activity shall be an affirmation that the party submitting the PCN possesses the requisite property rights to undertake the GP activity (including compliance with special conditions, mitigation, etc.).

**DELINEATION OF WETLANDS, OTHER SPECIAL AQUATIC SITES, AND OTHER WATERS**

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current wetland delineation manual and regional supplement published by the USACE. The permittee may ask the USACE to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the USACE does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. The 60-day PCN review period will not start until a delineation has been completed.

**DRAWINGS AND ILLUSTRATIONS**

**General Information.**

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross Section Map. Identify each illustration with a figure or attachment number. For linear projects (e.g. roads, subsurface utility lines, etc.) gradient drawings should also be included. Please submit one copy of all drawings on 8½ x 11 inch plain white paper (electronic submissions preferred). Use the fewest number of sheets necessary for your drawings or illustrations. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross section). While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.

**ADDITIONAL INFORMATION AND REQUIREMENTS**

For proposed GP activities that involve discharges into waters of the United States, water quality certification from the State, Tribe, or EPA must be obtained or waived. Some States, Tribes, or EPA have issued water quality certification for one or more GPs. Please check the New England District website to see if water quality certification has already been issued for the GP(s) you wish to use. For proposed GP activities in coastal states, state Coastal Zone Management Act consistency concurrence must be obtained, or a presumption of concurrence must occur. Some States have issued Coastal Zone Management Act consistency concurrences for one or more GPs. Please check the New England District website to see if Coastal Zone Management Act consistency concurrence has already been issued for the GP(s) you wish to use.

# APPENDIX C SELF-VERIFICATION NOTIFICATION

U.S. Army Corps of Engineers (USACE)

# SELF-VERIFICATION NOTIFICATION (SVN)

**DATA REQUIRED BY THE PRIVACY ACT OF 1974**

**Authority** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.

**Principal Purpose** This information will be used in evaluating activities under Self-Verification procedures within Massachusetts.

**Routine Uses** Routine uses will include: (1) Documenting compliance with the terms and conditions of the General Permit (GP) for activities that may require authorization pursuant to one or more of USACE's Regulatory authorities. (2) Records may be referred to other Federal, State, and local agencies for evaluation and enforcement purposes.

**Disclosure** Failure to fully comply and abide by the GP terms and conditions prior to commencing work and after completion project may result in formal enforcement action, up to and including monetary penalties and/or legal action, pursuant to 33 CFR Part 326.

**Instructions** The permittee must complete ALL required sections of this document before commencing USACE-regulated activities. A copy of this completed SVN must be kept on site during construction and be made available for review by USACE and other Federal, State, & Local regulatory authorities at any time. Within 30 days of initiating project construction, the permittee shall submit the completed SVN to USACE. The SVN shall be submitted to USACE as **ONE signed document** that includes project plans and documentation that supports each field (e.g., emails, letters, description, phone calls, surveys). Electronic submissions to the following address are strongly preferred: cenae-r-ma-sv@usace.army.mil. The email subject line shall contain the following: GP #, SVN, City/Town, and date submitted.

**(ITEMS 1 THRU 3 TO BE FILLED BY USACE)**

| 1. APPLICATION NO. | 2. FIELD OFFICE CODE | 3. DATE RECEIVED |
|---|---|---|
| | | |

**APPLICANT AND AGENT INFORMATION**

| 4. APPLICANT'S NAME | 7. AGENT'S ADDRESS: |
|---|---|
| First - Middle - Last - | First - Middle - Last - |
| Company - | Company - |
| E-mail Address - | E-mail Address - |
| 5. APPLICANT'S ADDRESS: | 8. AGENT'S ADDRESS: |
| Address- | Address- |
| City - State - Zip - Country - | City - State - Zip - Country - |
| 6. APPLICANT'S PHONE NOs. w/AREA CODE | 9. AGENTS PHONE NOs. w/AREA CODE |
| a. Residence b. Business c. Fax | a. Residence b. Business c. Fax |

**NAME, LOCATION, AND DESCRIPTION OF PROJECT SITE**

10. PROJECT NAME OR TITLE

| 11. FILE NUMBER(S) OF PREVIOUS USACE ACTIONS ON THE SITE (if applicable) | 12. NAME OF WATERBODY |
|---|---|
| | |
| 13. PROJECT COORDINATES (in decimal degrees) | 14. PROJECT STREET ADDRESS (if applicable) |
| Latitude: ◦N Longitude: ◦W | Address |
| | City - State - Zip - |

**ACTIVITY TYPE, PROJECT IMPACTS, AVOIDANCE & MINIMIZATION**

15. GENERAL PERMIT ACTIVITIES (CHECK ALL THAT APPLY)

| | | | | |
|---|---|---|---|---|
| 1 ☐ | 6 ☐ | 11 ☐ | 16 ☐ | 21 ☐ |
| 2 ☐ | 7 ☐ | 12 ☐ | 17 ☐ | 22 ☐ |
| 3 ☐ | 8 ☐ | 13 ☐ | 18 ☐ | 23 ☐ |
| 4 ☐ | 9 ☐ | 14 ☐ | 19 ☐ | 24 ☐ |
| 5 ☐ | 10 ☐ | 15 ☐ | 20 ☐ | 25 ☐ |

16. SUMMARY OF PROJECT IMPACTS (*see instructions*)

| Area (square feet) | Length (linear feet) | Volume (cubic yards) | Duration |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

17. PROJECT PLANS (BY CHECKING THE BOXES BELOW, YOU CERTIFY THESE ITEMS ARE COMPLETE) (*see instructions*)

- ☐ a. Plans shall at least contain the following: Vicinity Map, Plan View, and Typical Cross Section View of the proposed activity.
- ☐ b. All direct, indirect and secondary impacts from USACE regulated activities are shown on the project plans.
- ☐ c. The size of the impact area for each activity (acre, square feet, linear feet) are shown on the project plans.
- ☐ d. For discharges of fill material (§404), the volume of fill material is identified on the project plans.
- ☐ e. The duration of each impact, permanent or temporary (X days), is identified on the project plans.
- ☐ f. Do activities with permanent impacts result in the loss of waters? If so, this is identified on the project plans.
- ☐ g. All aquatic resources in the vicinity of the USACE regulated activities are delineated on the project plans.

18. AVOIDANCE & MINIMIZATION (BY CHECKING THE BOXES BELOW, YOU CERTIFY THESE CRITERIA ARE MET) (*see instructions*)

- ☐ a. The project has been designed to avoid and minimize impacts to aquatic resources.
- ☐ b. The footprint of activities in waters of the U.S. has been reduced to only what is necessary to achieve the overall project purpose.
- ☐ c. All practicable measures have been taken to avoid and minimize impacts to aquatic resources through construction techniques and site access (e.g., Best Management Practices, Time of Year Restrictions).
- ☐ d. All temporary impacts from USACE regulated activities will be restored upon completion of construction and the project area will be returned to pre-construction contours and conditions.

**COMPLIANCE WITH FEDERAL REGULATIONS & SUPPLEMENTAL INFORMATION**

19. DUE DILIGENCE (*see instructions*)

Complete the entries below to document compliance with the following Federal requirements. Construction may NOT begin if a PCN is/may be required, and you must contact USACE to determine permitting requirements. Documentation that demonstrates how the activity complies with each field below shall be submitted to the USACE as noted in the instructions block. See each General Condition (GC) in the GP for how to comply with each requirement.

| | |
|---|---|
| a. State Historic Preservation Officer | Select Option |
| b. Massachusetts BUAR | Select Option |
| c. Tribal Historic Preservation Officers | Select Option |
| d. Endangered Species Act - NOAA | Select Option |
| e. Endangered Species Act - USFWS | Select Option |
| f. Northern Long Eared Bat (ESA) | Select Option |
| g. Essential Fish Habitat | Select Option |
| h. Wild & Scenic Rivers | Select Option |
| i. 401 Water Quality Certification 401 | Select Option |
| | 401 WQC/OOC File Number: OOC issued: 401 issued: |
| j. Section 408 Permission | Select Option |
| k. Coastal Zone | Select Option |
| l. Construction Mats | Select Option |
| m.Time of Year Restrictions | Select Option |
| n. Vernal Pools | Select Option |
| o. Sediment & Erosion Controls | Select Option |
| p. Stream/Wetland Crossings | Select Option |

20. AQUACULTURE ACTIVITIES - GP 18 (*see instructions*)

- ☐ a. If required, an Aquaculture Certification from the Massachusetts Division of Marine Fisheries was obtained prior to commencing work.
- ☐ b. Coordination with the U.S. Coast Guard pursuant to Private Aids to Navigation has occurred prior to commencing work.
- ☐ c. If required, a MEPA Certificate was obtained from the Massachusetts Environmental Protection Agency prior to commencing work. Select Option
- ☐ d. The prospective permittee contacted local authorities (e.g. harbormaster, select board, shellfish constable) for authorization of their facility prior to commencing work.

21. ADDITIONAL INFORMATION/ATTACHMENTS (*see instructions*)

- ☐ a. The project plans are enclosed in this SVN submittal (see block 17).
- ☐ b. The activity Select Option funded through the Bipartisan Infrastructure Bill (also known as the Infrastructure Investment and Jobs Act).
- ☐ c. All required state, local and federal approvals were acquired prior to starting construction in USACE jurisdiction.
- ☐ d. After construction of the activity is completed, a complete Certificate of Compliance will be submitted to USACE.

22. IS THERE ANOTHER LEAD FEDERAL AGENCY:

☐ YES ☐ NO

23. STATEMENT OF AUTHORIZATION *(see instructions)*

I certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

| SIGNATURE OF APPLICANT | DATE | SIGNATURE OF AGENT | DATE |
|---|---|---|---|

24. SIGNATURES *(see instructions)*

I hereby certify that the information in this Self-Verification Notification is complete and accurate. As the applicant or their duly authorized agent, I certify the activity was completed in accordance with the terms and conditions of the GP. This includes all applicable terms, general conditions, and activity-specific GP criteria. I agree to allow the duly authorized representatives of the Corps of Engineers Regulatory Program and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as “no trespassing” this consent specifically supersedes and waives that prohibition and grants permission to enter the property despite such posting.

| SIGNATURE OF APPLICANT | DATE | SIGNATURE OF AGENT | DATE |
|---|---|---|---|

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

**Instructions for Preparing a**
**Department of the Army**
**General Permit (GP) Self-Verification**

**Blocks 1 through 3.** To be completed by the Corps of Engineers.

**Block 4. Applicant' Name.** Enter the name and the e-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the self-verification, please attach a sheet of paper with the necessary information marked Block 4.

**Block 5. Address of Applicant.** Please provide the full address of the party or parties responsible for the self-verification. If more space is needed, attach an extra sheet of paper marked Block 5.

**Block 6. Applicant Telephone Number(s).** Please provide the telephone number where you can usually be reached during normal business hours.

**Blocks 7 through 9.** To be completed, if you choose to have an agent.

**Block 7. Authorized Agent's Name and Title.** Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, consultant, or any other person or organization. Note: An agent is not required.

**Blocks 8 and 9. Agent's Address and Telephone Number.** Please provide the complete mailing address of the agent, along with the telephone number where they can be reached during normal business hours.

**Block 10. Proposed General Permit Activity Name or Title.** Please provide a name identifying the proposed GP activity, e.g., Windward Marina, Rolling Hills Subdivision, or Smith Commercial Center.

**Block 11. File Number(s) of Previous USACE Actions on the Site** Please provide any known USACE file number. If the activity does not have a known USACE file number, you may state N/A.

**Block 12. Name of Waterbody.** Please provide the name (if it has a name) of any stream, lake, marsh, or other waterway to be directly impacted by the GP activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

**Block 13. Proposed Activity Coordinates.** Please enter the latitude and longitude of where the proposed GP activity is located. Indicate whether the project location provided is the center of the project or whether the project location is provided as the latitude and longitude for each of the "corners" of the project area. If there are multiple sites, please list the latitude and longitude of each site (center or corners) on a separate sheet of paper and mark as Block 13.

**Block 14. Proposed Activity Street Address.** If the proposed activity is located at a site having a street address (not a box number), enter it in Block 14.

**Block 15. General Permit Activity Type.** Please select all GP activity types that apply to the proposed activity. A list of GP activity types can be found in Section III of the GP.

**Block 16. Summary of Project Impacts.** Please provide ALL proposed impacts, both temporary and permanent in duration, that are located in Waters of the United States. The area of impact shall be provided in square feet (SF). When applicable, impacts that result in conversion of stream bank or shoreline must also be identified in linear feet (LF). Dredging or the discharge of dredged or fill material shall also include the volume, cubic yards (CY), of material removed from or placed into Waters of the U.S. If more entries are required, please attach a table matching the desired format in Block 16.

**Block 17. Project Plans.** Please verify that items a-g are included in the project plans. Three types of illustrations are necessary to properly depict the proposed work. These illustrations or drawings are identified as a Vicinity Map, a Plan View (Aerial view) and a Cross Section Map. For linear projects (e.g. roads, subsurface utility lines, etc.) gradient drawings (longitudinal profile) should also be included. Plans must accurately depict the existing conditions and all aspects of the proposed activity located in waters of the U.S. Please submit one copy of all drawings formatted to print on 8½ x 11 inch or 11 x 17 inch plain white paper. Use the fewest number of sheets necessary for your drawings or illustrations. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross section). While illustrations need not be certified engineering sheets; they should be clear, accurate, contain all necessary information, and depict all proposed work. Each submission must also include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current wetland delineation manual and regional supplement published by USACE.

**Block 18. Avoidance & Minimization.** Please verify that items a-d have been implemented for the proposed activity.

**Block 19. Due Diligence.** Please complete all the fields and submit documentation to USACE to demonstrate compliance with the above requirements. This Documentation may include emails, letters, meeting notes, phone call log, project narrative, project plans, a species list from the NOAA Section 7 Mapper, a completed copy of the IPAC determination keys, etc. Documentation should be limited to what is necessary to demonstrate how the proposed activity meets each requirement. Refer to the MA GP, Appendix A, for specific guidance on the identification of previously identified historic properties and previously unidentified historic properties. Endangered Species: *The applicant must be designated as the non-federal representative for the purposes of Section 7 consultation to select the Rangewide D-Key options. Otherwise, the applicant shall select the following option when IPAC indicates the NLEB is present: "The activity IS located within the NLEB Species Range (PCN Required)."

**Block 20. Aquaculture Activities.** Please verify that items a-d have been obtained or completed prior to commencing work in waters of the U.S.

**Block 21. Additional Information/Attachments.** Please verify that items a-d have been completed prior to commencing work in waters of the U.S.

**Block 22. Lead Federal Agency.** Please identify if there is another lead federal agency involved with the proposed activity. Enter the lead federal agency name (e.g., the Federal Emergency Management Agency, FEMA) and the agency's designated person of contact for the activity.

**Block 23. Statement of Authorization.** The applicant shall sign this section for all activities. If an agent is to be employed, the agent shall sign this section.

**Block 24. Signatures.** The SVN must be signed by the person proposing to undertake the GP activity, and if applicable, the authorized party (agent) that prepared the SVN. The signature of the person proposing to undertake the GP activity shall be an affirmation that the party submitting the SVN possesses the requisite property rights to undertake the GP activity.

US Army Corps of Engineers®
New England District

## APPENDIX D: PCN APPLICATION CHECKLIST

The following information shall be submitted for all PCNs for USACE to properly evaluate your application. Some applications may require more information and this checklist is offered as a tool to assist applicants with submitting a complete application.

### *SECTION 1: GENERAL APPLICATION INFORMATION*

1. ☐ Complete the Pre-Construction Notification document (Appendix B).
2. ☐ Specify which local/state/federal authorizations are required for the project and if any have been obtained or applied for at the time of USACE application submittal.
3. ☐ Identify all funding sources the project will receive or has received to date. Provide any relevant information in the application submission.
4. ☐ Is this part of a larger project that is being implemented in phases? If so, describe the project schedule and how each phase will be implemented.
5. ☐ Describe the existing conditions on the site and the general land use in the vicinity of the project at the time application submittal.
6. ☐ Provide any historic information available that you may have of project area, e.g., existing USACE permit numbers, the names under which the permits were obtained if the permit numbers are unknown, construction dates and proof of prior existence (aerials, photos, town hall records, affidavits, state or local permits, etc.) to verify that the project predates regulation and is "vested".[19]
7. ☐ The anticipated start and end dates for construction.

### *SECTION 2: WETLAND DELINEATION*

8. ☐ Data used to support aquatic resource boundary determinations (delineation forms, delineation map(s) that show the locations of each aquatic resource in the project area, aerial and ground photographs, LIDAR imagery, national wetland inventory maps, soil maps, national hydrography dataset maps, floodplain maps, historical imagery, etc.).
9. ☐ Photographs of the wetland(s) and/or waterway(s) where impacts are proposed. Photos at low tide are preferred for work in tidal waters.
10. ☐ Indicate the relationship of the project area to waters of the U.S., i.e., adjacent wetlands, tidal influence or hydraulic connectivity through culverts, or other conveyances, etc.
11. ☐ At minimum the delineation map/figure should include the following:
    a. Contour lines showing topography.
    b. North arrow.
    c. Bar and text scale.
    d. Legend.
    e. Drawn project boundary.
    f. High tide line, mean high water, mean low water, ordinary high water mark, and/or wetland boundaries.
    g. Captions with a unique name for each aquatic resource and the area or length of the aquatic resource within the project area.

[19] Vested is exempt (someone or something) from a new law or regulation.

h. Appropriate landmarks and features (e.g., culverts, special aquatic sites, etc.).
i. Points showing the paired upland and wetland delineation locations for tidal and non-tidal wetlands only.

## *SECTION 3: AVOIDANCE & MINIMIZATION*

12. ☐ Describe specific measures taken to avoid impacts to aquatic resources or describe why aquatic resources could not be avoided while achieving the project purpose and need.
13. ☐ For impacts to aquatic resources that could not be avoided, describe specific considerations/ measures taken to minimize the area of proposed impacts to aquatic resources in designing the project.
14. ☐ Describe specific measures taken to avoid and minimize the proposed direct, indirect, and secondary impacts to aquatic resources and their functions through construction techniques and timing.
15. ☐ If applicable, provide a restoration plan that describes how all temporary fills and structures will be removed and the area restored to pre-impact conditions (see GC 22).
16. ☐ If applicable, provide an Invasive Species Control Plan (see GC 29). For sample control plans, see www.nae.usace.army.mil/missions/regulatory/invasive-species.
17. ☐ If applicable, describe how the proposed wetland/waterbody crossing is compliant with GC 31, Stream Work and Crossings, and Wetland Crossings.

## *SECTION 4A: PROJECT IMPACTS*

18. ☐ Describe the overall project and the activities located in Waters of the U.S. (WOTUS) that you are seeking authorization for.
19. ☐ Identify the following for project impacts in WOTUS:
    a. ☐ Direct, indirect, secondary impacts[20] within WOTUS.
    b. ☐ The size of each impact (square feet or acres, or linear feet).
    c. ☐ For discharges of fill material (§404), specify the volume of fill material to be discharged (cubic yards).
    d. ☐ The impact duration from each activity, permanent or temporary (X days).

## *SECTION 4B: PROJECT PLANS*

20. ☐ Submit project plans that depict all impacts in WOTUS. On the project plans, applicants shall provide:

    *General Information*

    a. ☐ Plan view and typical cross-section view sheets that show the existing and proposed conditions. These illustrations should each be identified with a figure number, date of the map, the project title, the name of the applicant and the type of illustration (vicinity map, plan view, or cross section).
    b. ☐ Drawings, sketches, or plans that are legible, reproducible (color is encouraged, but features must be distinguishable in black and white), drawn to scale, and no larger than 11”x17” and 10 MB when submitted in digital format. Numeric and graphic/bar scales must agree, and plan details must be measurable using a standard engineer’s scale on printed plans. Reduced plans are not acceptable.
    c. ☐ The north arrow and remove miscellaneous non-wetland or water project related features such as conduits, utility poles, guardrails, etc.

[20] See definitions section for the definitions of direct, indirect, secondary impacts.

d. ☐ Clearly draw the overall limits of work, staging areas, disposal sites, access routes, and any permittee responsible mitigation sites. These areas may include both aquatic resources and upland areas.
e. ☐ Names or numbers of all roads in the site's vicinity and ownership and numbers of abutting parcels.
f. ☐ Datum in plan and elevation views. The horizontal datum shall be in the NAD 83 Massachusetts State Plane Coordinate System (INSERT) in U.S. survey feet. The vertical data in coastal projects shall be referenced to either MLLW or the North American Vertical Datum of 1988 (NAVD 88). Both the distance and depth units shall be U.S. survey feet and specified on the project plans.

*Aquatic Resources & Project Impacts*

g. ☐ Delineation of all aquatic resource types on site including salt marsh; other special aquatic sites (vegetated shallows, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges); other waters, such as lakes, ponds, vernal pools, natural rocky habitat (tidal only), and perennial, intermittent, and ephemeral streams.
h. ☐ Identify the substrate type (cobble/gravel, organic detritus, sand/shell, silt, mud) and the approximate percentage of each substrate type on site. Grain sizes shall be based on Wentworth grain size classification scale for granules, pebbles, cobbles, and boulders. Sediment samples with a content of 10% or more of pebble-gravel-cobble and/or boulder in the top layer (6-12 inches) should be delineated and material with epifauna/macroalgae should be differentiated from bare pebble-gravel-cobble and boulder.
i. ☐ The direction of ebb and flood in tidal waters and direction of flow in non-tidal waters.
j. ☐ In tidal waters, the project boundary distance from special aquatic sites identified in 20g above if within 25 feet from that resource.
k. ☐ USACE jurisdictional boundaries including ordinary high-water mark (OHWM), high tide line (HTL), mean high water (MHW). Other boundaries include mean low water (MLW), mean lower low water (MLLW), as applicable.
   - Non-tidal: OHWM and/or wetland boundaries.
   - Tidal (structures/work only): MHW, MLW.
   - Tidal (Fill and Structures/work): HTL, MHW, MLW.
   - Tidal (Dredging/Beach Nourishment): HTL, MHW, MLW, MLLW.
l. ☐ Identification of each aquatic resource with a unique name (ex. Wetland 1, Wetland 2, Tributary 1, Beaver Brook, Atlantic Ocean) and the size of each aquatic resource within the project area (square feet or acres).
m. ☐ Impacts to each aquatic resource with captions denoting the size of each impact (square feet, acres, or linear feet) and the duration of the impact (ex. Permanent, Temporary (X days).

## *SECTION 4C: PROJECT PLANS - SPECIFIC PROJECT INFORMATION*

21. ☐ For projects involving Navigation, Structures, Dredging, and/or Beach Nourishment, the applicant shall also address the following:

*Navigation*

a. ☐ Identify the locations of adjacent Federal navigation project (FNP) and/or state/local navigation projects on the project plans.
b. ☐ Specify the distance between the FNP and proposed project boundary, the authorized depths of the FNP, and state plane coordinates of seaward end(s) of project structures near an FNP.

*Structures*

a. ☐ Identification of the piling type (steel, timber, concrete) and diameter to be removed and/or installed.
b. ☐ Specify the minimal height of the structures' frame over saltmarsh. To meet the SV threshold, piers must be ≤4 feet in width and this minimal height must achieve a 1.5:1 ratio (i.e., a 4-foot-wide pier is 6 feet above a saltmarsh).
c. ☐ For floats, the methods of securing them (piles, bottom anchors) and for keeping them off substrate (skids, stops) at low water. To meet the SV threshold, a minimum depth of 18-inches of water should be maintained below a floating dock/structure at lower tide levels.

*Dredging*

a. ☐ The area (SF, acre) and volume (CY) of material to be dredged waterward of MHW for each dredge location.
b. ☐ Dredge boundaries.
c. ☐ Bathymetry for existing, proposed, and historical (include dates and USACE permits) dredge depths.
d. ☐ The likely final angle of repose of the side cuts based on the physical characterization of the material to be dredged and based upon the high/ medium/low, wave or current energy of the location.
e. ☐ Label area whether the dredging is new, maintenance, improvement, or a combination.
f. ☐ Location of the disposal site (include location sheet). NOTE: For projects proposing open water, nearshore disposal, or beach nourishment, contact USACE as early as possible for sampling and testing protocols. Sediment testing, including physical (e.g., grain-size analysis), chemical and biological testing may be required. Sampling/testing of sediments without such contact should not occur and if done, will be at the applicant's risk.
g. ☐ The methods and areas used to retain or prevent dredged material from running back into the wetland or waterway. Provide the capacity of the storage area and points of runback, including the overflow route, into the aquatic system.
h. ☐ For open-water disposal, explain why inland or beneficial reuse sites are not practicable.
i. ☐ Show the finished top elevation of the disposal site.

*Beach Nourishment*

a. ☐ For beach nourishment, identify the disposal footprint, existing and proposed nourishment profiles (multiple profiles are appropriate if the site is more than 150 feet long or non-contiguous), total fill area (SF) and volume (CY), fill area and volume waterward of the HTL, and delineation of dunes, banks, existing beach vegetation, and contours.
b. ☐ For beach nourishment identify the substrate type (fine sand, sand, cobble, boulder) and/or grain-size of existing material.

## *SECTION 5: STRUCTURES*

22. ☐ For projects with the removal of existing pilings identify the number, type (steel, timber, concrete) and diameter of pilings to be removed and the methodology for removal (cut off at mud line, pulling, vibratory, etc.).
23. ☐ For projects with the installation of new pilings identify the number, type (steel, timber, concrete) and diameter of pilings to be installed and the methodology for installation (vibratory hammer, impact hammer etc.).
24. ☐ Identify any existing structures and moorings in waters adjacent to the proposed activity, their dimensions, and the distance to the limits and coordinates of any proposed mooring field or reconfiguration zone. For reconfiguration zone and mooring fields, provide the coordinates for all

corners based on the Massachusetts State Plane Coordinate System. Specify the maximum number of slips and/or moorings within proposed reconfiguration zones or anchorage areas.

25. ☐ The dimensions of the structure or work and extent of encroachment waterward of MHW and from affixed point on the shoreline or upland.
26. ☐ Shoreline of adjacent properties and property boundary offset for structures. In narrow waterbodies, the distance to opposite shoreline, waterway width, and structures across from proposed work.
27. ☐ For new commercial boating facilities, anchorage areas or reconfiguration zones, provide a description of the type of vessels that would use the facility, and any plans for sewage pump-out facilities, fueling facilities and contingency plans for oil spills.
28. ☐ See Sections 4A-C above.

## *SECTION 6: AQUACULTURE*

29. ☐ Identify the coordinates for lease area corners and gear configuration area on the project plans.
30. ☐ Identify the proposed aquaculture gear type (buoys, floats, racks, trays, nets, lines, tubes, cages, containers, and other structures). Provide the impacts for each aquaculture gear type (see Section 4A 19a-d).
31. ☐ For a GP 18 to be valid, applicants must have (a) their MA DMF Aquaculture Certification letter for licensed shellfish aquaculture sites, (b) documentation that the applicant has coordinated with the U.S. Coast Guard regarding USCG Private Aids to Navigation standards, (c) their MEPA Certificate (if required), and (d) documentation that the applicant has contacted their local authorities (ex. harbormaster, select board, shellfish constable) for authorization of their facility.
32. Provide information on site the operation, maintenance, and access. Will the site be accessed via boat, kayak, etc.? Will cages be removed in the winter? How often will gear be checked on? Is there an operations plan for the proposed aquaculture area?
33. ☐ See Sections 4A-C above.

## *SECTION 7: DREDGING*

34. ☐ Sampling plan requests for new, improvement or maintenance dredging must submit completed **Dredged Material Evaluation checklist found at Dredged Material Evaluation Checklist, Sampling and Analysis Plan Requirements from Applicant (army.mil)** and identify the method of handling/transporting the dredged material.
35. ☐ Identify grain-size of material to be dredged (e.g., silty sand) and provide any existing sediment grain size and bulk sediment chemistry data from the proposed project or nearby projects. Include information on any recent spills of oil and/or other hazardous materials and/or nearby outfalls. Document the information source, e.g., EPA database, the harbormaster or fire chief. If there are none, state “none”.
36. ☐ See Section 4A, 4B and 4C, Dredging 21(a-i) above.

## *SECTION 8: WETLAND/WATERBODY CROSSINGS*

37. ☐ For the stream crossing, identify the crossing methodology on the project plan (e.g., dam and pump, dry, wet, etc.). Submit a waterway crossing sequencing plan with the application.
38. ☐ If the project includes a permanent crossing of a tidal waterway, your project design should be modified to match the velocity, depth, cross-sectional area, and substrate of the existing waterbody adjacent to the crossing and provide documentation (hydraulic analysis including low lying property analysis) that the size of the crossing will not restrict tidal flow over the full natural tide range and will not adversely affect abutting infrastructure.

39. ☐ If the work includes a permanent crossing of a non-tidal stream, your project design should be modified to match the culvert gradient of the existing stream channel profile, provide clearance for ≥1.2 times bank full width and conveyance should be embedded ≥1-2 feet for box culverts and pipe arches or ≥1-2 feet and at least 25 percent for rounded pipes/culverts in accordance with the Massachusetts Stream Crossing Standards. Provide the basis for any variation to this requirement.
40. ☐ If the work includes a permanent crossing of a non-tidal stream, the structure should be designed to include a natural bottom substrate within the conveyance that matches the characteristics of the substrate in the natural stream channel and the character of the banks (mobility, slope, stability, confinement, grain and rock size). The conveyance should be designed with a minimum openness ratio ≥0.82-feet (0.25-meters). For how to calculate openness ratio and stream simulation ecological approach for road and stream crossings, see https://www.nae.usace.army.mil/Missions/Regulatory/Stream-and-River-Continuity/.

## *SECTION 9: COMPENSATORY MITIGATION*

41. ☐ Does the project require Compensatory Mitigation[21] for impacts to Waters of the U.S.? (See Section V in the 2023 Massachusetts General Permit)
42. ☐ If the project requires mitigation, does the selected compensatory mitigation option (i.e., In-Lieu Fee, permittee-responsible mitigation) deviate from the order of the options presented in §332.3(b)(2)-(6)? If so, please explain why. https://www.ecfr.gov/current/title-33/chapter-II/part-332/section-332.3
43. ☐ For any compensatory mitigation that involves preservation, the applicant must use a site protection instrument to preserve the parcel in perpetuity. (Conservation Easement, Deed Restriction, etc.) https://www.mass.gov/service-details/conservation-restriction-review-program.

## *SECTION 10: HISTORIC PROPERTIES & NOTIFICATIONS TO SHPO, THPOs, BUAR*

44. ☐ Notify the SHPO, Massachusetts Historical Commission, of the Project via Certified Mail and include proof of delivery or receipt in the application package (See Appendix A).
45. ☐ As applicable, notify the THPOs, Narragansett Indian Tribe, Wampanoag Tribe of Gay Head (Aquinnah), and Mashpee Wampanoag Tribe, of the Project via email OR mail and include proof of delivery or receipt in the application package (See Appendix A).
46. ☐ As applicable, notify the BUAR via email (*strongly preferred*) OR mail and include proof of delivery or receipt in the application package (See Appendix A).
47. ☐ Include responses to this notification in the permit application.
48. ☐ As applicable, information on historic properties (Tribal and Archaeological) within the project area should be provided in the permit application.

## *SECTION 11: ENDANGERED SPECIES & ESSENTIAL FISH HABITAT*

49. ☐ Provide a USFWS Information for Planning and Consultation (IPaC) Official Species List from https://ecos.fws.gov/ipac and the email of the individual who generated the list (see GC 10 of the 2023 Massachusetts General Permit for more information).
50. ☐ Provide a species list from the NMFS Section 7 Endangered Species Act mapper at https://noaa.maps.arcgis.com/apps/webappviewer/index.html.
51. ☐ Provide a species list from the NMFS Essential Fish Habitat Mapper at https://www.habitat.noaa.gov/apps/efhmapper/?page=page_3.

[21] Your mitigation proposal must be consistent with the December 29, 2020 Compensatory Mitigation Standard Operating Procedures at https://www.nae.usace.army.mil/Portals/74/docs/regulatory/Mitigation/Compensatory-Mitigation-SOP-2020.pdf and 2008 Mitigation Rule.

52. ☐ If the project will generate turbidity, describe the extent of turbidity and if erosion controls will be used to contain turbidity. If turbidity controls are not operationally feasible, explain the basis for your conclusion and identify any other measures that you will implement to minimize resuspension of sediment.
53. ☐ Identify the substrate type and any aquatic resources that will be affected by the proposed action. (SAV, salt marsh, sand, silt/clay, rocky/hard bottom)
54. ☐ For projects which will include the installation of pilings/sheet-piles, identify the substrate at the project site (sand, cobble, silt/mud/clay), the installation method (vibratory hammer, impact hammer, combination) and indicate whether the following “soft start” procedures at beginning of the workday and after a 30-minute period of rest will be deployed:
    a. ☐ Vibratory Pile Installation: pile driving will be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds of reduced energy driving, one-minute waiting period will be repeated two additional times, followed immediately by pile-driving at full rate and energy.
    b. ☐ Impact Pile Installation: pile driving will commence with an initial set of three strikes by the hammer at 40% energy, followed by a one-minute wait period, then two subsequent 3-strike sets at 40% energy, with one-minute waiting periods, before initiating continuous impact driving.
55. ☐ If the project involves dredging, describe any dredge history, number of dredge events to be covered by the permit, erosion/sediment controls, dredge type, intake structures (mesh screen size), dredged material disposal site.
56. ☐ For project activities associated with structures, identify the number, type (drill barge, work boat, tugboat, etc.), and size of any temporary vessels that will be used. Specify measures that will be implemented to ensure vessels are not berthed in shallow water or will “ground out” at low tide.
57. ☐ For aquaculture projects identify whether any component of the gear is seasonal (will be removed annually) or will be in place year-round. If gear will be present year-round and will be variably managed (e.g., floating in summer, bottom in winter) identify month/date for such configurations.
58. ☐ For aquaculture projects identify whether the project will involve use of an existing vessel or new vessel. Identify the length for all work vessels and identify the distance round trip from vessel berthing location and aquaculture area.
59. ☐ For project activities associated with docking structures (either commercial, industrial, or recreational) identify the number, type (motorized/non-motorized, jet-ski, sailboat, kayak, canoe, other that will be berthed there and the sizes of each.
60. ☐ Information required for Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act:
    a. Results of an eelgrass survey completed per the INSERT.
    b. Essential Fish Habitat Assessment to determine project-related impacts to essential fish habitat, using guidance developed by the National Marine Fisheries Service.
61. ☐ A document containing the following information (requirements of 50 CFR §600.920(e)(3)):
    a. Description of proposed action.
    b. Analysis of potential adverse effects on essential fish habitat.
    c. Conclusions regarding the effects of the action on essential fish habitat.
    d. If applicable, proposed mitigation.
    e. Analysis of alternatives to the proposed action.
    f. Other:

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