

Updated 05/15/2020

FEDERAL PROJECT

BIDDING INSTRUCTIONS

FOR ALL PROJECTS:

1. Use pen and ink to complete all paper Bids.
2. As a minimum, the following must be received prior to the time of Bid opening:

For a Paper Bid:

- a) a copy of the Notice to Contractors, b) the completed Acknowledgement of Bid Amendments form, c) the completed Schedule of Items, d) two copies of the completed and signed Contract Offer, Agreement & Award form, e) a Bid Guaranty, (if required), and f) any other certifications or Bid requirements listed in the Bid Documents as due by Bid opening.

For an Electronic Bid:

NOTE: Not all projects accept Electronic Bids. Please review the Notice to Contractors and see if it specifically states that Electronic Bids will be accepted.

- a) a completed Bid using Expedite® software and submitted via the Bid Express™ web-based service, b) an electronic Bid Guaranty (if required) or a faxed copy of a Bid Bond (with original to be delivered within 72 hours), and c) any other Certifications or Bid requirements listed in the Bid Documents as due by Bid opening.
3. Include prices for all items in the Schedule of Items (excluding non-selected alternates).
4. Bid Guaranty acceptable forms are:
 - a) a properly completed and signed Bid Bond on the Department's prescribed form (or on a form that does not contain any significant variations from the Department's form as determined by the Department) for 5% of the Bid Amount or
 - b) an Official Bank Check, Cashier's Check, Certified Check, U.S. Postal Money Order or Negotiable Certificate of Deposit in the amount stated in the Notice to Contractors or
 - c) an electronic bid bond submitted with an electronic bid.
5. If a paper Bid is to be sent, "FedEx First Overnight" delivery is suggested as the package is delivered directly to the DOT Headquarters Building located at 16 Child Street in Augusta. Other means, such as U.S. Postal Service's Express Mail has proven not to be reliable.

IN ADDITION, FOR FEDERAL AID PROJECTS:

6. Complete the DBE Proposed Utilization form, and submit with your bid. If you are submitting your bid electronically, you must FAX the form to (207) 624-3431. This is a curable defect.

*If you need further information regarding Bid preparation, call the DOT
Contracts Section at (207) 624-3410.*

*For complete bidding requirements, refer to Section 102 of the Maine Department
of Transportation, Standard Specifications, March 2020 Edition.*

NOTICE

The Maine Department of Transportation is attempting to improve the way Bid Amendments/Addendums are handled and allow for an electronic downloading of bid packages from our website, while continuing to maintain an optional plan holders list.

Prospective bidders, subcontractors or suppliers who wish to download a copy of the bid package and receive a courtesy notification of project specific bid amendments must fill out the on-line plan holder registration form and provide an email address to the MDOT Contracts mailbox at: MDOT.contracts@maine.gov. Each bid package will require a separate request.

Additionally, interested parties will be responsible for reviewing and retrieving the Bid Amendments from our web site, and acknowledging receipt and incorporating those Bid Amendments in their bids using the Acknowledgement of Bid Amendment Form.

The downloading of bid packages from the MDOT website is not the same as providing an electronic bid to the Department. Electronic bids must be submitted via <http://www.BIDX.com>. For information on electronic bidding contact Rebecca Snowden at rebecca.snowden@maine.gov or Diane Barnes at diane.barnes@maine.gov.

NOTICE

For security and other reasons, all Bid Packages which are mailed, shall be provided in double (one envelope inside the other) envelopes. The *Inner Envelope* shall have the following information provided on it:

Bid Enclosed - Do Not Open

PIN:

Town:

Date of Bid Opening:

Name of Contractor with mailing address and telephone number:

In Addition to the usual address information, the *Outer Envelope* should have written or typed on it:

Double Envelope: Bid Enclosed

PIN:

Town:

Date of Bid Opening:

Name of Contractor:

This should not be much of a change for those of you who use Federal Express or similar services.

Hand-carried Bids may be in one envelope as before, and should be marked with the following information:

Bid Enclosed: Do Not Open

PIN:

Town:

Name of Contractor:

October 16, 2001

STATE OF MAINE DEPARTMENT OF TRANSPORTATION
Bid Guaranty-Bid Bond Form

KNOW ALL MEN BY THESE PRESENTS THAT _____

_____, of the City/Town of _____ and State of _____

as Principal, and _____ as Surety, a

Corporation duly organized under the laws of the State of _____ and having a usual place of

Business in _____ and hereby held and firmly bound unto the Treasurer of

the State of Maine in the sum of _____, for payment which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

The condition of this obligation is that the Principal has submitted to the Maine Department of Transportation, hereafter Department, a certain bid, attached hereto and incorporated as a part herein, to enter into a written contract for the construction of _____

_____ and if the Department shall accept said bid

and the Principal shall execute and deliver a contract in the form attached hereto (properly

completed in accordance with said bid) and shall furnish bonds for this faithful performance of

said contract, and for the payment of all persons performing labor or furnishing material in

connection therewith, and shall in all other respects perform the agreement created by the

acceptance of said bid, then this obligation shall be null and void; otherwise it shall remain in full

force, and effect.

Signed and sealed this _____ day of _____ 20____

WITNESS:

WITNESS

PRINCIPAL:

By _____

By: _____

By: _____

SURETY:

By _____

By: _____

Name of Local Agency: _____

NOTICE

Bidders:

Please use the attached “Request for Information” form when submitting questions concerning specific Contracts that have been advertised for Bid, include additional numbered pages as required. RFI’s may be faxed to 207-624-3431, submitted electronically through the Departments web page of advertised projects by selecting the RFI tab on the project details page or via e-mail to RFI-Contracts.MDOT@maine.gov.

These are the only allowable mechanisms for answering Project specific questions. Maine DOT will not be bound to any answers to Project specific questions received during the Bidding phase through other processes.

When submitting RFIs by Email please follow the same guidelines as stated on the “Request for Information” form and include the word “RFI” along with the Project name and Identification number in the subject line.

RFI No: _____

Date _____ **Time** _____

WIN(S): _____ **Town(s):** _____ **Bid Date:** _____

Question(s):_____

Company Name: _____ **Phone: ()** _____

Email: _____ **Fax:** (____) _____

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NOTICE

Disadvantaged Business Enterprise Proposed Utilization

The Apparent Low Bidder shall submit the Disadvantaged Business Enterprise Proposed Utilization form with their bid. This is a curable bid defect.

The Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan form contains additional information that is required by USDOT.

The Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan form should be used.

A copy of the new Contractor's Disadvantaged Business Enterprise Proposed Utilization Plan and instructions for completing it are attached.

Note: Questions about DBE firms, or to obtain a printed copy of the DBE Directory, contact The Office of Civil Rights at (207) 624-3066.

MDOTs DBE Directory of Certified firms can also be obtained at <https://www.maine.gov/mdot/civilrights/dbe/>

INSTRUCTIONS FOR PREPARING THE MaineDOT CONTRACTOR'S DBE/SUBCONTRACTOR UTILIZATION FORM

The Contractor Shall Extend equal opportunity to MaineDOT certified DBE firms (as listed in MaineDOT's DBE Directory of Certified Businesses) in the selection and utilization of Subcontractors and Suppliers.

SPECIFIC INSTRUCTIONS FOR COMPLETING THE FORM:

Insert Contractor name, the name of the person(s) preparing the form, and that person(s) telephone, fax number and e-mail address.

Calculate and provide percentage of your bid that will be allocated to DBE firms, Federal Project Identification Number, and location of the Project work.

In the columns, name each subcontractor, DBE and non-DBE firm to be used, provide the Unit/Item cost of the work/product to be provided by the subcontractor, give a brief description and the dollar value of the work.

Revised 1/12

DBE GOAL NOTICE FFY 2019-2021
Maine Department of Transportation
Disadvantaged Business Enterprise Program

Notice is hereby given that in accordance with US DOT regulation 49 CFR Part 26, the Maine Department of Transportation (MaineDOT) has established a Disadvantaged Business Enterprise Program (DBE) for disadvantaged business participation in the federal-aid highway and bridge construction programs; MaineDOT contracts covered by the program include consulting, construction, supplies, manufacturing, and service contracts.

For FFY 2019-21 (October 1, 2018 through September 30, 2021) MaineDOT has established an annual DBE participation goal of **2.4%** to be achieved through race/gender neutral means. This goal has been approved by the Federal Highway Administration and remains in effect through September 30, 2021. Maine DOT must meet this goal each federal fiscal year. If the goal is not met, MaineDOT must provide a justification for not meeting the goal and provide a plan to ensure the goal is met, which may include placing contract goals on certain projects that contractors will be required to meet.

MaineDOT asks all contractors, consultants and subcontractors to seek certified DBE firms for projects and to work to meet the determined 2.4% goal without the need to impose contract goals. DBE firms are listed on the MaineDOT website at:

<https://www.maine.gov/mdot/civilrights/docs/dbe/WeeklyDBEVendorList.pdf>

Interested parties may view MaineDOT's DBE goal setting methodology, also posted on this website. If you have questions regarding this goal or the DBE program you may contact Sherry Tompkins at the Maine Department of Transportation, Civil Rights Office by telephone at (207) 624-3066 or by e-mail at: sherry.tompkins@maine.gov

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**MaineDOT CONTRACTOR'S DBE/SUBCONTRACTOR
PROPOSED UTILIZATION FORM**

All Bidders must furnish this form with their bid on Bid Opening day

Contractor: _____ Telephone: _____ Ext _____

Contact Person: _____ Fax: _____

E-mail: _____

BID DATE: _____

FEDERAL PROJECT PIN # _____ PROJECT LOCATION: _____

TOTAL ANTICIPATED DBE _____% PARTICIPATION FOR THIS CONTRACT

W B E	D B E	Non DBE	Firm Name	Item Number & Description of Work	Quantity	Cost Per Unit/Item	Anticipated \$ Value
Subcontractor Total >							
DBE Total >							

NOTE: THIS INFORMATION IS USED TO TRACK AND REPORT ANTICIPATED DBE PARTICIPATION IN ALL FEDERALLY FUNDED MAINE DOT CONTRACTS. THE ANTICIPATED DBE AMOUNT IS VOLUNTARY AND WILL NOT BECOME A PART OF THE CONTRACTUAL TERMS.

Equal Opportunity Use:

Form received: ____/____/____ Verified by: _____

FHWA ☐

FTA ☐

FAA ☐

**For a complete list of certified firms and company designation (WBE/DBE) go to
<http://www.maine.gov/mdot/civilrights/>**

Rev. 01/15

Maine Department of Transportation Civil Rights Office

Directory of Certified Disadvantaged Business Enterprises

Listing can be found at:

<https://www.maine.gov/mdot/civilrights/dbe/>

For additional information and guidance contact:

Civil Rights Office at (207) 624-3066

It is the responsibility of the Contractor to access the DBE Directory at this site in order to have the most current listing.

Vendor Registration

Prospective Bidders must register as a vendor with the Department of Administrative & Financial Services if the vendor is awarded a contract. Vendors will not be able to receive payment without first being registered. Vendors/Contractors will find information and register through the following link –

<http://www.maine.gov/purchases/venbid/index.shtml>

STATE OF MAINE DEPARTMENT OF TRANSPORTATION NOTICE TO CONTRACTORS

Sealed Bids addressed to the Maine Department of Transportation, Augusta, Maine 04333 and endorsed on the wrapper "Bids for Veranda Street Bridge Replacement, CNRR Crossing Bridge Rehabilitation, and Interstate 295 Southbound over Washington Avenue Bridge Rehabilitation in the city of **PORTLAND**" will be received from contractors at the Reception Desk, MaineDOT Building, Capitol Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on October 28, 2020 and at that time and place, publicly opened and read. **Only bidders prequalified for this specific project through the Letter of Interest process earlier this year will be allowed to submit bids.** We now accept electronic bids for bid packages posted on the bidx.com website. Electronic bids do not have to be accompanied by paper bids. Please note: The Department will accept a facsimile of the bid bond; however, the original bid bond must then be received at the MDOT Contract Section within 72 hours of the bid opening. Until further notice, dual bids (one paper, one electronic) will be accepted, with the paper copy taking precedence.

Description: Maine Federal Aid Project No. NHPP-2174(500) WIN 021745.00, 2354500 WIN 023545.00, 2361503 WIN 023615.03

Location: In Cumberland County, Veranda Street bridge is located on Interstate 295 over Veranda street and US 1 approximately 0.45 of a mile southerly of Falmouth town line. CNRR Crossing bridge is located on Interstate 295/ US 1 approximately 0.75 of a mile southerly of Falmouth town line. Interstate 295 Southbound over Washington Avenue Bridge is located approximately 1.00 mile southerly of Falmouth town line.

Scope of Work: Veranda Street Bridge Replacement, CNRR Crossing Bridge Rehabilitation, and Interstate 295 Southbound over Washington Avenue Bridge Rehabilitation plus other incidental work.

For general information regarding Bidding and Contracting procedures, contact George Macdougall at (207) 624-3410. Our webpage at <http://www.maine.gov/mdot/contractors/> contains a copy of the Schedule of Items, Plan Holders List, written portions of bid amendments, drawings, bid results and an electronic form for RFI submittal. For Project-specific information fax all questions to **Project Manager Scott Rollins** at (207) 624-3431, use electronic RFI form or email questions to RFI-Contracts.MDOT@maine.gov, project name and identification number should be in the subject line. Questions received after 12:00 noon of Monday (or if that Monday is a state holiday, Friday) prior to bid date will not be answered. Bidders shall not contact any other Departmental staff for clarification of Contract provisions, and the Department will not be responsible for any interpretations so obtained. TTY users call Maine Relay 711.

Plans, specifications and bid forms may be seen at the MaineDOT Building in Augusta, Maine, and at the Department of Transportation's Regional Office in Scarborough. They may be purchased from the Department between the hours of 8:00 a.m. to 4:30 p.m. by cash, credit card (Visa/Mastercard) or check payable to Treasurer, State of Maine sent to Maine Department of Transportation, Attn.: Mailroom, 16 State House Station, Augusta, Maine 04333-0016. They also may be purchased by telephone at (207) 624-3536 between the hours of 8:00 a.m. to 4:30 p.m. Full size plans \$248.00 (\$260.00 by mail). Half size plans \$124.00 (\$129.00 by mail), Bid Book \$10 (\$13 by mail), Single Sheets \$2, payment in advance, all non-refundable.

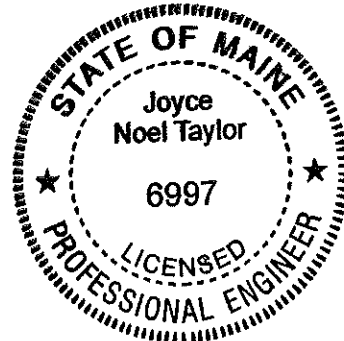
Each Bid must be made upon blank forms provided by the Department and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of \$540,000.00 payable to Treasurer, State of Maine as a Bid guarantee. A Contract Performance Surety Bond and a Contract Payment Surety Bond, each in the amount of 100 percent of the Contract price, will be required of the successful Bidder.

This Contract is subject to all applicable Federal Laws. This contract is subject to compliance with the Disadvantaged Business Enterprise program requirements as set forth by the Maine Department of Transportation.

All work shall be governed by *State of Maine, Department of Transportation, Standard Specifications, March 2020 Edition*, price \$10 [\$15 by mail], and *Standard Details, March 2020 Edition*, price \$10 [\$15 by mail]. They also may be purchased by telephone at (207) 624-3536 between the hours of 8:00 a.m. to 4:30 p.m. *Standard Detail* updates can be found at <http://www.maine.gov/mdot/contractors/publications/>.

The right is hereby reserved to the MaineDOT to reject any or all bids.

Augusta, Maine
October 7, 2020



A handwritten signature in black ink that reads "Joyce Noel Taylor".

JOYCE NOEL TAYLOR, P. E.
CHIEF ENGINEER

Portland
I295 Over Veranda St, WIN 021745.00
CNRR Crossing, WIN 023545.00
I295 Over Washington Ave, WIN 023615.03
April 14, 2011
Supersedes August 3, 2004

SPECIAL PROVISION 102.7.3
ACKNOWLEDGMENT OF BID AMENDMENTS

With this form, the Bidder acknowledges its responsibility to check for all Amendments to the Bid Package. For each Project under Advertisement, Amendments are located at <http://www.maine.gov/mdot/contractors/> . It is the responsibility of the Bidder to determine if there are Amendments to the Project, to download them, to incorporate them into their Bid Package, and to reference the Amendment number and the date on the form below. The Maine DOT will not post Bid Amendments any later than noon the day before Bid opening without individually notifying all the planholders.

Amendment Number	Date

The Contractor, for itself, its successors and assigns, hereby acknowledges that it has received all of the above referenced Amendments to the Bid Package.

CONTRACTOR

Date

Signature of authorized representative

(Name and Title Printed)

NOTICE

(COVID-19 Pandemic)

The Department considers the COVID-19 Pandemic an Uncontrollable Event as defined in Section 101.2 of the Department's Standard Specifications.

Accordingly, any documented delay to the project's Critical Path due to COVID-19 related issues, such as impacted workforce, subcontracts, or material supply, will be considered an Excusable Delay as defined in Section 109.5(A)(3) of the Department's Supplemental Specifications.

As an Excusable Delay, the Contractor is entitled to an extension of time provided that other associated notification, documentation, and procedural requirements set forth in the Contract are met.

10/5/2020

Maine Department of Transportation

Proposal Schedule of Items

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0010	201.23 REMOVING SINGLE TREE TOP ONLY	9.000 EA				
0020	201.24 REMOVING STUMP	9.000 EA				
0030	202.15 REMOVING EXISTING MANHOLE OR CATCH BASIN	24.000 EA				
0040	202.19 REMOVING EXISTING BRIDGE	LUMP SUM				
0050	202.202 REMOVING PAVEMENT SURFACE	8,400.000 SY				
0060	203.20 COMMON EXCAVATION	15,792.000 CY				
0070	203.24 COMMON BORROW	3,050.000 CY				
0080	203.25 GRANULAR BORROW	4,480.000 CY				
0090	203.4339 GEOFOAM LIGHTWEIGHT FILL	9,100.000 CY				
0100	203.4539 LEVELING SAND	580.000 CY				
0110	206.082 STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	1,565.000 CY				
0120	304.10 AGGREGATE SUBBASE COURSE - GRAVEL	9,965.000 CY				

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SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0130	403.207 HOT MIX ASPHALT 19.0 MM HMA	540.000 T				
0140	403.2081 12.5 MM POLYMER MODIFIED HOT MIX ASPHALT	1,720.000 T				
0150	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	460.000 T				
0160	403.211 HOT MIX ASPHALT (SHIMMING)	57.000 T				
0170	403.213 HOT MIX ASPHALT 12.5 MM BASE	1,820.000 T				
0180	403.2131 12.5 MM POLYMER MODIFIED HMA BASE	1,430.000 T				
0190	409.15 BITUMINOUS TACK COAT - APPLIED	1,582.000 G				
0200	461.131 TEMPORARY PAVEMENT	325.000 T				
0210	501.222 MICROPILES	2,320.000 LF				
0220	501.2221 ABANDONED MICROPILES	210.000 LF				
0230	501.231 DYNAMIC LOADING TEST	4.000 EA				
0240	501.2331 MICROPILE VERIFICATION LOAD TEST	2.000 EA				

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0250	501.2341 MICROPILE PROOF LOAD TEST	2.000 EA	_____	_____	_____	_____
0260	501.50 STEEL H-BEAM PILES 89 LBS/FT, DELIVERED	3,850.000 LF	_____	_____	_____	_____
0270	501.501 STEEL H-BEAM PILES 89 LBS/FT, IN PLACE	3,850.000 LF	_____	_____	_____	_____
0280	501.804 DRILLING EQUIPMENT MOBILIZATION	LUMP SUM	LUMP SUM	_____	_____	_____
0290	501.90 PILE TIPS	35.000 EA	_____	_____	_____	_____
0300	501.91 PILE SPLICES	111.000 EA	_____	_____	_____	_____
0310	501.92 PILE DRIVING EQUIPMENT MOBILIZATION	LUMP SUM	LUMP SUM	_____	_____	_____
0320	502.219 STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	LUMP SUM	LUMP SUM	_____	_____	_____
0330	502.26 STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLABS ON STEEL BRIDGES	LUMP SUM	LUMP SUM	_____	_____	_____
0340	503.12 REINFORCING STEEL, FABRICATED AND DELIVERED	28,000.000 LB	_____	_____	_____	_____
0350	503.13 REINFORCING STEEL, PLACING	28,000.000 LB	_____	_____	_____	_____

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0360	503.17 MECHANICAL WELDED SPLICE	1,062.000 EA	_____	 _____	_____	 _____
0370	503.26 STAINLESS STEEL REINFORCEMENT - FABRICATED & DELIVERED	232,000.000 LB	_____	 _____	_____	 _____
0380	503.27 STAINLESS STEEL REINFORCEMENT - PLACING	232,000.000 LB	_____	 _____	_____	 _____
0390	504.702 STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED	LUMP SUM	LUMP	 SUM	_____	 _____
0400	504.71 STRUCTURAL STEEL ERECTION	LUMP SUM	LUMP	 SUM	_____	 _____
0410	505.08 SHEAR CONNECTORS	LUMP SUM	LUMP	 SUM	_____	 _____
0420	506.9104 THERMAL SPRAY COATING - SHOP APPLIED	LUMP SUM	LUMP	 SUM	_____	 _____
0440	508.14 HIGH PERFORMANCE WATERPROOFING MEMBRANE	LUMP SUM	LUMP	 SUM	_____	 _____
0450	515.21 PROTECTIVE COATING FOR CONCRETE SURFACES	LUMP SUM	LUMP	 SUM	_____	 _____
0500	520.223 ARMORLESS BRIDGE JOINT	LUMP SUM	LUMP	 SUM	_____	 _____
0510	520.232 EXPANSION DEVICE - ASPHALTIC PLUG JOINT	102.000 LF	_____	 _____	_____	 _____

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SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0550	523.52 BEARING INSTALLATION	24.000 EA	_____	_____	_____	_____
0560	523.5401 LAMINATED ELASTOMERIC BEARINGS, FIXED	12.000 EA	_____	_____	_____	_____
0570	523.5402 LAMINATED ELASTOMERIC BEARINGS, EXPANSION	12.000 EA	_____	_____	_____	_____
0580	524.301 TEMPORARY STRUCTURAL SUPPORT	LUMP SUM	LUMP	SUM	_____	_____
0590	524.302 BRIDGE MOVEMENT SYSTEM	LUMP SUM	LUMP	SUM	_____	_____
0600	524.303 TEMPORARY STRUCTURAL SUPPORT, ABUTMENTS	LUMP SUM	LUMP	SUM	_____	_____
0610	524.40 PROTECTIVE SHIELD	LUMP SUM	LUMP	SUM	_____	_____
0640	526.301 TEMPORARY CONCRETE BARRIER TYPE I	LUMP SUM	LUMP	SUM	_____	_____
0650	526.301 TEMPORARY CONCRETE BARRIER TYPE I RET BY DEPT IN PLACE	LUMP SUM	LUMP	SUM	_____	_____
0660	526.331 PERMANENT CONCRETE BARRIER TYPE III B MODIFIED	LUMP SUM	LUMP	SUM	_____	_____
0670	526.502 PRECAST CONCRETE MEDIAN BARRIER	LUMP SUM	LUMP	SUM	_____	_____

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SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0700	527.34 WORK ZONE CRASH CUSHIONS	5.000 UN				
0710	534.7601 PRECAST APPROACH SLAB	LUMP SUM				
0720	534.7611 PRECAST SLEEPER SLAB	LUMP SUM				
0730	602.302 LIGHT WEIGHT FOAM CONCRETE FILL	LUMP SUM				
0740	602.303 LIGHT WEIGHT FOAM CONCRETE DIST SLAB	LUMP SUM				
0750	603.151 12 INCH CORRUGATED METAL PIPE	8.000 LF				
0760	603.155 12 INCH REINFORCED CONCRETE PIPE CLASS III	72.000 LF				
0770	603.159 12 INCH CULVERT PIPE OPTION III	270.000 LF				
0780	603.169 15 INCH CULVERT PIPE OPTION III	69.000 LF				
0790	603.175 18 INCH REINFORCED CONCRETE PIPE CLASS III	48.000 LF				
0800	603.179 18 INCH CULVERT PIPE OPTION III	230.000 LF				
0810	603.195 24 INCH REINFORCED CONCRETE PIPE CLASS III	44.000 LF				

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Proposal ID: 021745.00

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SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0820	603.199 24 INCH CULVERT PIPE OPTION III	10.000 LF				
0830	603.209 30 INCH CULVERT PIPE OPTION III	180.000 LF				
0840	604.071 CATCH BASIN TYPE A1-P	18.000 EA				
0850	604.072 CATCH BASIN TYPE A1-C	2.000 EA				
0860	604.076 60 INCH CATCH BASIN TYPE A1-C	4.000 EA				
0870	604.0761 60" CATCH BASIN TYPE A1-P	3.000 EA				
0880	604.0771 72" CATCH BASIN TYPE A1-P	2.000 EA				
0890	604.091 CATCH BASIN TYPE B1-P	7.000 EA				
0900	604.15 MANHOLE	2.000 EA				
0910	604.16 ALTERING CATCH BASIN TO MANHOLES	1.000 EA				
0920	604.164 REBUILDING CATCH BASIN	1.000 EA				
0930	604.18 ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	23.000 EA				

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
0940	604.221 18 INCH STORM WATER CHECK VALVE	2.000 EA	_____	 _____	_____	 _____
0950	604.223 30 INCH STORM WATER CHECK VALVE	1.000 EA	_____	 _____	_____	 _____
0960	604.2402 BEHIND CURB CATCH BASIN	5.000 EA	_____	 _____	_____	 _____
0970	604.2403 SPECIAL BASIN	2.000 EA	_____	 _____	_____	 _____
0980	604.244 CATCH BASIN TYPE F4	2.000 EA	_____	 _____	_____	 _____
0990	604.2491 CATCH BASIN TYPE F-7	1.000 EA	_____	 _____	_____	 _____
1000	605.09 6 INCH UNDERDRAIN TYPE B	1,750.000 LF	_____	 _____	_____	 _____
1010	605.11 12 INCH UNDERDRAIN TYPE C	790.000 LF	_____	 _____	_____	 _____
1020	605.12 15 INCH UNDERDRAIN TYPE C	45.000 LF	_____	 _____	_____	 _____
1030	605.13 18 INCH UNDERDRAIN TYPE C	120.000 LF	_____	 _____	_____	 _____
1040	605.15 24 INCH UNDERDRAIN TYPE C	350.000 LF	_____	 _____	_____	 _____
1050	605.17 30 INCH UNDERDRAIN TYPE C	130.000 LF	_____	 _____	_____	 _____

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1060	606.1301 31" W-BM GR, MID-WAY SPLICE-SGL FACED	1,400.000 LF				
1070	606.1307 BRIDGE TRANSITION (ASYMMETRICAL) - TYPE 1A	4.000 EA				
1080	606.1309 31" W-BM GR, MID-WAY SPL 8' STL POST 8" OFFS BLK SGL FACE	180.000 LF				
1090	606.2593 ANCHORAGE ASSEMBLY, MIDWAY SPLICE	1.000 EA				
1100	606.353 REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	1.000 EA				
1110	606.356 UNDERDRAIN DELINEATOR POST	6.000 EA				
1120	607.173 CHAIN LINK FENCE - 6 FOOT PVC COATED	480.000 LF				
1130	607.35 BRACING ASSEMBLY CHAIN LINK FENCE PVC COATED	10.000 EA				
1140	608.08 REINFORCED CONCRETE SIDEWALK	140.000 SY				
1150	608.26 CURB RAMP DETECTABLE WARNING FIELD	230.000 SF				
1160	609.11 VERTICAL CURB TYPE 1	2,600.000 LF				

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

Alt Set ID:

Alt Mbr ID:

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1170	609.12 VERTICAL CURB TYPE 1 - CIRCULAR	220.000 LF				
1180	609.23 TERMINAL CURB TYPE 1	73.000 EA				
1190	609.31 CURB TYPE 3	600.000 LF				
1200	609.38 RESET CURB TYPE 1	550.000 LF				
1210	610.08 PLAIN RIPRAP	34.000 CY				
1220	610.18 STONE DITCH PROTECTION	35.000 CY				
1230	613.319 EROSION CONTROL BLANKET	6,350.000 SY				
1240	615.07 LOAM	1,170.000 CY				
1250	615.086 LOAM/COMPOST MIX	200.000 CY				
1260	615.27 UNDERDRAIN SOIL FILTER	LUMP SUM				
1270	618.13 SEEDING METHOD NUMBER 1	25.000 UN				
1280	618.14 SEEDING METHOD NUMBER 2	123.000 UN				
1290	618.143 SPECIAL SEED MIX: WETLAND SEED MIX MOIST	8.000 UN				

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Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1300	618.143 SPECIAL SEED MIX: WILDFLOWER POLINATORS	10.000 UN				
1310	619.12 MULCH	155.000 UN				
1320	619.13 BARK MULCH	25.000 CY				
1330	619.14 EROSION CONTROL MIX	50.000 CY				
1340	620.58 EROSION CONTROL GEOTEXTILE	170.000 SY				
1350	620.6012 HDPE GEOMEMBRANE	4,300.000 SY				
1360	620.66 DRAINAGE GEOCOMPOSITE	810.000 SY				
1370	621.019 EVERGREEN TREES (2 FOOT - 3 FOOT) GROUP A	36.000 EA				
1380	621.02 EVERGREEN TREES (2 FOOT - 3 FOOT) GROUP B	12.000 EA				
1390	621.025 EVERGREEN TREES (3 FOOT - 4 FOOT) GROUP A	6.000 EA				
1400	621.026 EVERGREEN TREES (3 FOOT - 4 FOOT) GROUP B	12.000 EA				
1410	621.027 EVERGREEN TREES (3 FOOT - 4 FOOT) GROUP C	12.000 EA				

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

Alt Set ID:

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1420	621.032 EVERGREEN TREES (4 FOOT - 5 FOOT) GROUP B	12.000 EA	_____	 _____	_____	 _____
1430	621.033 EVERGREEN TREES (4 FOOT - 5 FOOT) GROUP C	12.000 EA	_____	 _____	_____	 _____
1440	621.038 EVERGREEN TREES (5 FOOT - 6 FOOT) GROUP B	40.000 EA	_____	 _____	_____	 _____
1450	621.039 EVERGREEN TREES (5 FOOT - 6 FOOT) GROUP C	20.000 EA	_____	 _____	_____	 _____
1460	621.044 EVERGREEN TREES (6 FOOT - 8 FOOT) GROUP B	18.000 EA	_____	 _____	_____	 _____
1470	621.110 SMALL DECIDUOUS TREES (3 FOOT - 4 FOOT) GROUP A	35.000 EA	_____	 _____	_____	 _____
1480	621.111 SMALL DECIDUOUS TREE (3 FOOT - 4 FOOT) GROUP B	36.000 EA	_____	 _____	_____	 _____
1490	621.112 SMALL DECIDUOUS TREE (4 FOOT - 5 FOOT) GROUP A	40.000 EA	_____	 _____	_____	 _____
1500	621.1121 MEDIUM DECIDUOUS TREE (4 FOOT - 5 FOOT) GROUP B	36.000 EA	_____	 _____	_____	 _____
1510	621.12 SMALL DECIDUOUS TREES (5 FOOT - 6 FOOT) GROUP A	24.000 EA	_____	 _____	_____	 _____

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

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Project Items

Alt Set ID:

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1520	621.121 SMALL DECIDUOUS TREES (5 FOOT - 6 FOOT) GROUP B	12.000 EA	_____	 _____	_____	 _____
1530	621.178 MEDIUM DECIDUOUS TREES (6 FOOT - 8 FOOT) GROUP A	12.000 EA	_____	 _____	_____	 _____
1540	621.179 MEDIUM DECIDUOUS TREES (6 FOOT - 8 FOOT) GROUP B	24.000 EA	_____	 _____	_____	 _____
1550	621.18 MEDIUM DECIDUOUS TREES (6 FOOT - 8 FOOT) GROUP C	7.000 EA	_____	 _____	_____	 _____
1560	621.186 MEDIUM DECIDUOUS TREES (8 FOOT - 10 FOOT) GROUP C	24.000 EA	_____	 _____	_____	 _____
1570	621.195 MEDIUM DECIDUOUS TREE (1.75 INCH - 2 INCH CALIPER) GROUP A	3.000 EA	_____	 _____	_____	 _____
1580	621.197 MEDIUM DECIDUOUS TREE (1.75 INCH - 2 INCH CALIPER) GROUP C	10.000 EA	_____	 _____	_____	 _____
1590	621.389 EVERGREENS (15 INCH - 18 INCH) GROUP A	36.000 EA	_____	 _____	_____	 _____
1600	621.424 EVERGREEN SHRUBS 4 FOOT - 5 FOOT GROUP B	8.000 EA	_____	 _____	_____	 _____
1610	621.450 EVERGREEN SHRUBS 5 FOOT - 6 FOOT GROUP A	50.000 EA	_____	 _____	_____	 _____

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SECTION: 1

Project Items

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1620	621.451 EVERGREEN SHRUBS 5 FOOT - 6 FOOT GROUP B	36.000 EA	_____	 _____	_____	 _____
1630	621.5351 DECIDUOUS SHRUBS (15 INCH - 18 INCH) GROUP A	24.000 EA	_____	 _____	_____	 _____
1640	621.54 DECIDUOUS SHRUBS (18 INCH - 24 INCH) GROUP A	54.000 EA	_____	 _____	_____	 _____
1650	621.546 DECIDUOUS SHRUBS (2 FOOT - 3 FOOT) GROUP A	24.000 EA	_____	 _____	_____	 _____
1660	621.554 DECIDUOUS SHRUBS (3 FOOT - 4 FOOT) GROUP C	12.000 EA	_____	 _____	_____	 _____
1670	621.558 DECIDUOUS SHRUBS (4 FOOT - 5 FOOT) GROUP A	50.000 EA	_____	 _____	_____	 _____
1680	621.80 ESTABLISHMENT PERIOD	LUMP SUM	LUMP SUM		_____	 _____
1690	625.01 WATER LINE SYSTEM	LUMP SUM	LUMP SUM		_____	 _____
1700	626.11 PRECAST CONCRETE JUNCTION BOX	30.000 EA	_____	 _____	_____	 _____
1710	626.21 METALLIC CONDUIT	80.000 LF	_____	 _____	_____	 _____
1720	626.22 NON-METALLIC CONDUIT	2,900.000 LF	_____	 _____	_____	 _____

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Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1730	626.251 NON-METALLIC UNDER PAVEMENT CONDUIT (SCHEDULE 80 OR GREATER RATING)	150.000 LF	_____	_____	_____	_____
1740	626.35 CONTROLLER CABINET FOUNDATION	1.000 EA	_____	_____	_____	_____
1750	626.36 REMOVE OR MODIFY CONCRETE FOUNDATION	2.000 EA	_____	_____	_____	_____
1760	626.411 18 INCH DIAMETER FOUNDATION	48.000 LF	_____	_____	_____	_____
1770	626.43 30 INCH DIAMETER FOUNDATION	96.000 LF	_____	_____	_____	_____
1780	626.46 48 INCH DIAMETER FOUNDATION	16.000 LF	_____	_____	_____	_____
1790	627.733 4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	9,500.000 LF	_____	_____	_____	_____
1810	627.75 WHITE OR YELLOW PAVEMENT & CURB MARKING	2,350.000 SF	_____	_____	_____	_____
1820	627.77 REMOVING PAVEMENT MARKINGS	1,400.000 SF	_____	_____	_____	_____
1830	627.78 TEMPORARY 4 INCH PAINTED PAVEMENT MARKING LINE, WHITE OR YELLOW	8,400.000 LF	_____	_____	_____	_____
1840	629.05 HAND LABOR, STRAIGHT TIME	230.000 HR	_____	_____	_____	_____

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Proposal ID: 021745.00

Project(s): 021745.00, 023545.00, 023615.03

SECTION: 1

Project Items

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1850	631.10 AIR COMPRESSOR (INCLUDING OPERATOR)	80.000 HR	_____	 _____	_____	 _____
1860	631.11 AIR TOOL (INCLUDING OPERATOR)	80.000 HR	_____	 _____	_____	 _____
1870	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	220.000 HR	_____	 _____	_____	 _____
1880	631.14 GRADER (INCLUDING OPERATOR)	60.000 HR	_____	 _____	_____	 _____
1890	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	220.000 HR	_____	 _____	_____	 _____
1900	631.22 FRONT END LOADER (INCLUDING OPERATOR)	70.000 HR	_____	 _____	_____	 _____
1910	631.32 CULVERT CLEANER (INCLUDING OPERATOR)	30.000 HR	_____	 _____	_____	 _____
1920	634.160 HIGHWAY LIGHTING	LUMP SUM	LUMP SUM		_____	 _____
1930	634.2042 LED LUMINARIES	10.000 EA	_____	 _____	_____	 _____
1940	634.210 CONVENTIONAL LIGHT STANDARD	8.000 EA	_____	 _____	_____	 _____
1950	639.18 FIELD OFFICE TYPE A	1.000 EA	_____	 _____	_____	 _____
1960	643.62 RECTANGULAR RAPID FLASHING BEACON	4.000 EA	_____	 _____	_____	 _____

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Proposal ID: 021745.00

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SECTION: 1

Project Items

Alt Set ID:

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
1970	643.71 TRAFFIC SIGNAL MODIFICATION	LUMP SUM	LUMP	SUM	_____	_____
1980	643.72 TEMPORARY TRAFFIC SIGNAL	LUMP SUM	LUMP	SUM	_____	_____
1990	643.77 RADAR OPERATED SPEED SIGN	1.000 EA	_____	_____	_____	_____
2000	643.80 TRAFFIC SIGNALS AT VERANDA ST / WORDSWORTH/ON RAMP/OFF RAMP	LUMP SUM	LUMP	SUM	_____	_____
2010	643.83 VIDEO DETECTION SYSTEM	LUMP SUM	LUMP	SUM	_____	_____
2020	643.90 INTERCONNECT WIRE BETWEEN	LUMP SUM	LUMP	SUM	_____	_____
2030	643.91 MAST ARM POLE 45 FT	1.000 EA	_____	_____	_____	_____
2040	643.92 PEDESTAL POLE	8.000 EA	_____	_____	_____	_____
2050	643.93 STRAIN POLE	1.000 EA	_____	_____	_____	_____
2060	643.94 DUAL PURPOSE POLE	1.000 EA	_____	_____	_____	_____
2070	645.103 DEMOUNT GUIDE SIGN	28.000 EA	_____	_____	_____	_____
2080	645.106 DEMOUNT REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	79.000 EA	_____	_____	_____	_____

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Project Items

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
2090	645.108 DEMOUNT POLE	44.000 EA				
2100	645.113 REINSTALL GUIDE SIGN	26.000 EA				
2110	645.116 REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	31.000 EA				
2120	645.118 REINSTALL POLE	17.000 EA				
2130	645.292 REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS TYPE II	120.000 SF				
2140	652.30 FLASHING ARROW BOARD	5.000 EA				
2150	652.312 TYPE III BARRICADE	30.000 EA				
2160	652.313 TEMPORARY PEDESTRIAN BARRICADE, ADA COMPLIANT	350.000 LF				
2170	652.33 DRUM	411.000 EA				
2180	652.34 CONE	130.000 EA				
2190	652.35 CONSTRUCTION SIGNS	2,650.000 SF				
2200	652.361 MAINTENANCE OF TRAFFIC CONTROL DEVICES	LUMP SUM				

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Proposal ID: 021745.00

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Project Items

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
2230	652.38 FLAGGER	8,700.000 HR				
2240	652.381 TRAFFIC OFFICER	555.000 HR				
2250	652.41 PORTABLE CHANGEABLE MESSAGE SIGN	13.000 EA				
2270	653.22 2 INCH POLYSTYRENE PLASTIC INSULATION	27.000 SY				
2280	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP SUM		LUMP SUM		
2290	659.10 MOBILIZATION	LUMP SUM		LUMP SUM		
2300	660.21 ON-THE-JOB TRAINING (BID)	1,000.000 HR				
2310	803.01 TEST PITS	12.000 EA				
2320	822.3225 6 INCH CLASS 52 DUCTILE IRON PIPE PUSH ON JOINT	50.000 LF				
2330	822.3405 8 INCH CLASS 52 DUCTILE IRON PIPE PUSH ON JOINT	230.000 LF				
2340	822.3605 12" CLASS 52 DUCTILE IRON PIPE PUSH ON JOINT	1,675.000 LF				
2350	823.31 12 INCH GATE VALVE	4.000 EA				

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Proposal ID: 021745.00

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Project Items

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Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
2360	823.3101 12" CUT-IN MJ GATE VALVE	1.000 EA				
2370	823.325 8 INCH GATE VALVE	7.000 EA				
2380	823.3250 8" CUT-IN MJ VALVE	1.000 EA				
2390	823.3254 8" INSERTION VALVE	1.000 EA				
2400	823.3310 6" CUT-IN MJ VALVE	2.000 EA				
2410	823.341 AIR RELEASE VALVE 1 INCH	4.000 EA				
2420	824.30 FIRE HYDRANT	3.000 EA				
2430	824.31 REMOVE FIRE HYDRANT	2.000 EA				
2440	825.335 1" COPPER SERVICE - SHORTSIDE	2.000 EA				
2450	825.4341 1" COPPER SERVICE - LONGSIDE	9.000 EA				
2460	825.55 2 " WATER SERVICE - RECONNECT	1.000 EA				
2470	910.301 SPECIAL WORK CONC DUCT BANK	LUMP SUM				
2480	508.13 SHEET WATERPROOFING MEMBRANE	LUMP SUM				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
2490	518.51 REPAIR OF UPWARD FACING SURFACES - BELOW REINFORCING STEEL < 8 IN.	20.000 SF				
2500	518.52 REPAIR OF UPWARD FACING SURFACES >= 8 IN.	1.000 CY				
2510	518.70 REPAIR OF OVERHEAD SURFACES < 8 IN.	125.000 SF				
2520	518.71 REPAIR OF OVERHEAD SURFACES >= 8 IN.	3.000 CY				
2530	520.243 BRIDGE JOINT MODIFICATION TYPE 3 WASHINGTON	2.000 EA				
2540	520.245 BRIDGE JOINT MODIFICATION TYPE 5 CNRR	4.000 EA				
2550	523.312 CLEAN AND SEAL BEARING	40.000 EA				
2560	524.50 TEMPORARY ROADWAY MAT CNRR	1.000 EA				
2570	524.50 TEMPORARY ROADWAY MAT WASHINGTON	1.000 EA				
2580	526.503 PRECAST CONCRETE PIER PROTECTION BARRIER SYSTEM	LUMP SUM				
2590	527.33 TRUCK MOUNTED ATTENUATOR	2.000 EA				

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Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
2600	627.744 6" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	3,100.000 LF	_____	_____	_____	_____
2610	652.361 MAINTENANCE OF TRAFFIC CONTROL DEVICES CNRR	LUMP SUM	LUMP SUM	_____	_____	_____
2620	652.361 MAINTENANCE OF TRAFFIC CONTROL DEVICES WASHINGTON	LUMP SUM	LUMP SUM	_____	_____	_____
2630	652.46 SEQUENTIAL FLASHING WARNING LIGHTS	10.000 EA	_____	_____	_____	_____
Section: 1			Total:	_____	_____	_____
			Total Bid:	_____	_____	_____

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street, Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and

_____ a corporation or other legal entity organized under the laws of the State of _____, with its principal place of business located at _____

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, WIN **021745.00, 023545.00, 023615.03**, for the **Veranda Street Bridge Replacement, CNRR Bridge Rehabilitation, and Interstate 295 Southbound over Washington Avenue Bridge Rehabilitation** in the city of **Portland**, County of **Cumberland**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **November 18, 2022**. Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the *State of Maine Department of Transportation Standard Specifications, March 2020 Edition* and related Special Provisions.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is _____

\$_____ Performance Bond and Payment Bond each being 100% of the amount of this Contract.

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, *Standard Specifications, March 2020 Edition, Standard Details March 2020 Edition* as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in the Federal Contract Provisions Supplement, and the Contract are still complete and accurate as of the date of this Agreement.
2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.
3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, *Standard Specifications March 2020 Edition*, *Standard Details March 2020 Edition* as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of: **WIN 021745.00, 023545.00, and 023615.03 Bridge projects plus other incidental work**, State of Maine, on which bids will be received until the time specified in the “Notice to Contractors” do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached “Schedule of Items.”

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached “Schedule of Items” in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached “Schedule of Items,” which may be ordered by the Resident, and to accept as full compensation the amount determined upon a “Force Account” basis as provided in the *Standard Specifications, March 2020 Edition*, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier’s check, certificate of deposit or U. S. Postal Money Order in the amount given in the “Notice to Contractors”, payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work as stated in Section 107.2 of the *Standard Specifications March 2020 Edition* and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor’s Disadvantaged Business Enterprise Utilization Plan with their bid.

Fifth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Sixth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

Date

(Signature of Legally Authorized Representative
of the Contractor)

Witness

(Name and Title Printed)

G. Award.

Your offer is hereby accepted.
documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: Bruce A. Van Note, Commissioner

Witness

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street, Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and

_____ a corporation or other legal entity organized under the laws of the State of _____, with its principal place of business located at _____

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, WIN **021745.00, 023545.00, 023615.03**, for the **Veranda Street Bridge Replacement, CNRR Bridge Rehabilitation, and Interstate 295 Southbound over Washington Avenue Bridge Rehabilitation** in the city of **Portland**, County of **Cumberland**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **November 18, 2022**. Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the *State of Maine Department of Transportation Standard Specifications, March 2020 Edition* and related Special Provisions.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is _____

\$_____ Performance Bond and Payment Bond each being 100% of the amount of this Contract.

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, *Standard Specifications, March 2020 Edition, Standard Details March 2020 Edition* as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in the Federal Contract Provisions Supplement, and the Contract are still complete and accurate as of the date of this Agreement.
2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.
3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, *Standard Specifications March 2020 Edition*, *Standard Details March 2020 Edition* as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of: **WIN 021745.00, 023545.00, and 023615.03 Bridge projects plus other incidental work**, State of Maine, on which bids will be received until the time specified in the “Notice to Contractors” do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached “Schedule of Items.”

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached “Schedule of Items” in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached “Schedule of Items,” which may be ordered by the Resident, and to accept as full compensation the amount determined upon a “Force Account” basis as provided in the *Standard Specifications, March 2020 Edition*, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier’s check, certificate of deposit or U. S. Postal Money Order in the amount given in the “Notice to Contractors”, payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work as stated in Section 107.2 of the *Standard Specifications March 2020 Edition* and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor’s Disadvantaged Business Enterprise Utilization Plan with their bid.

Fifth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Sixth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

CONTRACTOR

Date

(Signature of Legally Authorized Representative
of the Contractor)

Witness

(Name and Title Printed)

G. Award.

Your offer is hereby accepted.
documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: Bruce A. Van Note, Commissioner

Witness

CONTRACT AGREEMENT, OFFER & AWARD

AGREEMENT made on the date last signed below, by and between the State of Maine, acting through and by its Department of Transportation (Department), an agency of state government with its principal administrative offices located at Child Street Augusta, Maine, with a mailing address at 16 State House Station, Augusta, Maine 04333-0016, and

(Name of the firm bidding the job)

a corporation or other legal entity organized under the laws of the State of Maine, with its principal place of business located at **(address of the firm bidding the job)**

The Department and the Contractor, in consideration of the mutual promises set forth in this Agreement (the "Contract"), hereby agree as follows:

A. The Work.

The Contractor agrees to complete all Work as specified or indicated in the Contract including Extra Work in conformity with the Contract, PIN No.01 **12345.00**, for the **Hot Mix Asphalt Overlay** in the town/city of **South Nowhere**, County of **Washington**, Maine. The Work includes construction, maintenance during construction, warranty as provided in the Contract, and other incidental work.

The Contractor shall be responsible for furnishing all supervision, labor, equipment, tools supplies, permanent materials and temporary materials required to perform the Work including construction quality control including inspection, testing and documentation, all required documentation at the conclusion of the project, warranting its work and performing all other work indicated in the Contract.

The Department shall have the right to alter the nature and extent of the Work as provided in the Contract; payment to be made as provided in the same.

B. Time.

The Contractor agrees to complete all Work, except warranty work, on or before **November 15, 2006**. Further, the Department may deduct from moneys otherwise due the Contractor, not as a penalty, but as Liquidated Damages in accordance with Sections 107.7 and 107.8 of the *State of Maine Department of Transportation Standard Specifications, March 2020 Edition* and related Special Provisions.

C. Price.

The quantities given in the Schedule of Items of the Bid Package will be used as the basis for determining the original Contract amount and for determining the amounts of the required Performance Surety Bond and Payment Surety Bond, and that the amount of this offer is (Place bid here in alphabetical form such as One Hundred and Two dollars and 10 cents)
\$ (repeat bid here in numerical terms, such as \$102.10) Performance Bond and Payment Bond each being 100% of the amount of this Contract.

D. Contract.

This Contract, which may be amended, modified, or supplemented in writing only, consists of the Contract documents as defined in the Plans, *Standard Specifications, March 2020 Edition, Standard Details March 2020 Edition*, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds. It is agreed and understood that this Contract will be governed by the documents listed above.

E. Certifications.

By signing below, the Contractor hereby certifies that to the best of the Contractor's knowledge and belief:

1. All of the statements, representations, covenants, and/or certifications required or set forth in the Bid and the Bid Documents, including those in Appendix A to Division 100 of the *Standard Specifications March 2020 Edition* (Federal Contract Provisions Supplement), and the Contract are still complete and accurate as of the date of this Agreement.
2. The Contractor knows of no legal, contractual, or financial impediment to entering into this Contract.
3. The person signing below is legally authorized by the Contractor to sign this Contract on behalf of the Contractor and to legally bind the Contractor to the terms of the Contract.

F. Offer.

The undersigned, having carefully examined the site of work, the Plans, *Standard Specifications, March 2020 Edition, Standard Details March 2020 Edition*, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

PIN 012345.00 South Nowhere, Hot Mix Asphalt Overlay,

State of Maine, on which bids will be received until the time specified in the "Notice to Contractors" do(es) hereby bid and offer to enter into this contract to supply all the materials, tools, equipment and labor to construct the whole of the Work in strict accordance with the terms and conditions of this Contract at the unit prices in the attached "Schedule of Items."

The Offeror agrees to perform the work required at the price specified above and in accordance with the bids provided in the attached "Schedule of Items" in strict accordance with the terms of this solicitation, and to provide the appropriate insurance and bonds if this offer is accepted by the Government in writing.

As Offeror also agrees:

First: To do any extra work, not covered by the attached "Schedule of Items," which may be ordered by the Resident, and to accept as full compensation the amount determined upon a "Force Account" basis as provided in the *Standard Specifications, March 2020 Edition*, and as addressed in the contract documents.

Second: That the bid bond at 5% of the bid amount or the official bank check, cashier's check, certificate of deposit or U. S. Postal Money Order in the amount given in the "Notice to Contractors", payable to the Treasurer of the State of Maine and accompanying this bid, shall be forfeited, as liquidated damages, if in case this bid is accepted, and the undersigned shall fail to abide by the terms and conditions of the offer and fail to furnish satisfactory insurance and Contract bonds under the conditions stipulated in the Specifications within 15 days of notice of intent to award the contract.

Third: To begin the Work as stated in Section 107.2 of the *Standard Specifications March 2020 Edition* and complete the Work within the time limits given in the Special Provisions of this Contract.

Fourth: The Contractor will be bound to the Disadvantaged Business Enterprise (DBE) Requirements contained in the attached Notice (Additional Instructions to Bidders) and submit a completed Contractor's Disadvantaged Business Enterprise Utilization Plan with their bid.

Fifth: That this offer shall remain open for 30 calendar days after the date of opening of bids.

Sixth: The Bidder hereby certifies, to the best of its knowledge and belief that: the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with its bid, and its subsequent contract with the Department.

IN WITNESS WHEREOF, the Contractor, for itself, its successors and assigns, hereby execute two duplicate originals of this Agreement and thereby binds itself to all covenants, terms, and obligations contained in the Contract Documents.

Date

(Witness Sign Here)
Witness

CONTRACTOR

(Sign Here)
(Signature of Legally Authorized Representative
of the Contractor)

(Print Name Here)
(Name and Title Printed)

G. Award.

Your offer is hereby accepted.
documents referenced herein.

This award consummates the Contract, and the

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: Bruce A. Van Note, Commissioner

(Witness)

BOND # _____

CONTRACT PERFORMANCE BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That _____
_____ **in the State of** _____, as principal,
and.....
a corporation duly organized under the laws of the State of and having a
usual place of business
as Surety, are held and firmly bound unto the Treasurer of the State of Maine in the sum
of _____ **and 00/100 Dollars (\$** _____ **)**,
to be paid said Treasurer of the State of Maine or his successors in office, for which
payment well and truly to be made, Principal and Surety bind themselves, their heirs,
executors and administrators, successors and assigns, jointly and severally by these
presents.

The condition of this obligation is such that if the Principal designated as Contractor in
the Contract to construct Project Number _____ in the Municipality of
_____ promptly and faithfully performs the Contract, then this
obligation shall be null and void; otherwise it shall remain in full force and effect.

The Surety hereby waives notice of any alteration or extension of time made by the State
of Maine.

Signed and sealed this day of, 20.... .

WITNESSES:

Signature.....
Print Name Legibly

Signature
Print Name Legibly

SURETY ADDRESS:

.....
.....
.....

TELEPHONE.....

SIGNATURES:

CONTRACTOR:

.....
Print Name Legibly

SURETY:

.....
Print Name Legibly

NAME OF LOCAL AGENCY:

ADDRESS
.....
.....

BOND # _____

CONTRACT PAYMENT BOND
(Surety Company Form)

KNOW ALL MEN BY THESE PRESENTS: That _____
_____ **in the State of** _____, as principal,
and.....
a corporation duly organized under the laws of the State of and having a
usual place of business in
as Surety, are held and firmly bound unto the Treasurer of the State of Maine for the use
and benefit of claimants as herein below defined, in the sum of
_____ **and 00/100 Dollars (\$** _____ **)**
for the payment whereof Principal and Surety bind themselves, their heirs, executors and
administrators, successors and assigns, jointly and severally by these presents.

The condition of this obligation is such that if the Principal designated as Contractor in
the Contract to construct Project Number _____ in the Municipality of
_____ promptly satisfies all claims and demands incurred for all
labor and material, used or required by him in connection with the work contemplated by
said Contract, and fully reimburses the obligee for all outlay and expense which the
obligee may incur in making good any default of said Principal, then this obligation shall
be null and void; otherwise it shall remain in full force and effect.

A claimant is defined as one having a direct contract with the Principal or with a
Subcontractor of the Principal for labor, material or both, used or reasonably required for
use in the performance of the contract.

Signed and sealed this day of, 20

WITNESS:

SIGNATURES:

CONTRACTOR:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY:

Signature.....

.....

Print Name Legibly

Print Name Legibly

SURETY ADDRESS:

NAME OF LOCAL AGENCY:

.....

ADDRESS

.....

.....

TELEPHONE

.....

BRIDGE NO. 0816, 5616, 5933



The Maine Department of Transportation provides this publication for information only. Reliance upon this information is at user risk. It is subject to revision and may be incomplete depending upon changing conditions. The Department assumes no liability if injuries or damages result from this information. This map is not intended to support emergency dispatch.

0.1
Miles
1 inch = 0.13 miles

Date: 3/2/2020
Time: 7:52:38 AM
53

"General Decision Number: ME20200046 01/03/2020

Superseded General Decision Number: ME20190046

State: Maine

Construction Type: Highway

County: Cumberland County in Maine.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.80 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2020. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional

information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/03/2020

SUME2014-041 06/23/2017

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 18.95	3.23
CEMENT MASON/CONCRETE FINISHER...	\$ 19.27	1.13
ELECTRICIAN.....	\$ 26.40	6.66
HIGHWAY/PARKING LOT STRIPING:		
Laborer.....	\$ 15.53	2.04
INSTALLER - GUARDRAIL.....	\$ 19.98	2.55
IRONWORKER, REINFORCING.....	\$ 21.85	0.00
IRONWORKER, STRUCTURAL.....	\$ 22.33	4.50
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 17.44	2.07
LABORER: Common or General.....	\$ 15.29	2.08
LABORER: Epoxy Injector		

(Concrete).....	\$ 13.43	1.15
LABORER: Wheelman.....	\$ 20.34	3.43
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 21.07	4.39
OPERATOR: Bobcat/Skid		
Steer/Skid Loader.....	\$ 21.97	1.74
OPERATOR: Broom/Sweeper.....	\$ 19.02	0.00
OPERATOR: Bulldozer.....	\$ 21.71	5.67
OPERATOR: Grader/Blade.....	\$ 27.40	8.13
OPERATOR: Loader.....	\$ 19.95	2.86
OPERATOR: Mechanic.....	\$ 24.69	8.18
OPERATOR: Milling Machine.....	\$ 28.51	5.44
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 19.98	4.95
OPERATOR: Roller (Earth).....	\$ 18.57	2.50
OPERATOR: Roller Asphalt.....	\$ 19.30	4.09
TRAFFIC CONTROL: Flagger.....	\$ 9.00	0.00
TRAFFIC CONTROL:		
Laborer-Cones/ Barricades/Barrels -		
Setter/Mover/Sweeper.....	\$ 17.02	5.37

TRUCK DRIVER: Dump Truck.....\$ 16.71 2.80

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification

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

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

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

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and

non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

be:

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

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

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

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

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

=====

END OF GENERAL DECISION

"

State of Maine
Department of Labor
Bureau of Labor Standards
Augusta, Maine 04333-0045
Telephone (207) 623-7906

Wage Determination - In accordance with 26 MRS §1301 et. seq., this is a determination by the Bureau of Labor Standards, of the fair minimum wage rate to be paid to laborers and workers employed on the below titled project.

**2020 Fair Minimum Wage Rates
Heavy & Bridge Cumberland County**

<u>Occupation Title</u>	<u>Minimum Wage</u>	<u>Minimum Benefit</u>	<u>Total</u>	<u>Occupation Title</u>	<u>Minimum Wage</u>	<u>Minimum Benefit</u>	<u>Total</u>
Asphalt Raker	\$16.00	\$0.00	\$16.00	Laborers (Helpers & Tenders)	\$20.00	\$3.54	\$23.54
Backhoe Loader Operator	\$26.75	\$8.78	\$35.53	Laborer - Skilled	\$21.01	\$4.14	\$25.15
Boom Truck (Truck Crane) Operator	\$27.81	\$6.75	\$34.56	Line Erector Power/Cable Splicer	\$24.55	\$4.81	\$29.36
Bricklayer	\$24.50	\$4.47	\$28.97	Loader Operator - Front-End	\$23.25	\$4.98	\$28.23
Bulldozer Operator	\$22.00	\$4.70	\$26.70	Mechanic- Maintenance	\$21.75	\$3.41	\$25.16
Carpenter	\$24.25	\$5.53	\$29.78	Mechanic- Refrigeration	\$27.00	\$4.21	\$31.21
Carpenter - Rough	\$22.12	\$3.98	\$26.10	Millwright	\$27.80	\$7.00	\$34.80
Cement Mason/Finisher	\$18.00	\$0.72	\$18.72	Painter	\$19.00	\$2.74	\$21.74
Communication Equip Installer	\$24.00	\$3.19	\$27.19	Pipe/Steam/Sprinkler Fitter	\$27.43	\$5.79	\$33.22
Comm Trans Microwave & Cell	\$21.43	\$2.96	\$24.39	Pipelayer	\$31.25	\$7.96	\$39.21
Crane Operator =>15 Tons)	\$30.00	\$8.05	\$38.05	Plumber (Licensed)	\$26.00	\$4.50	\$30.50
Diver	\$24.00	\$3.12	\$27.12	Plumber Helper/Trainee	\$19.00	\$2.98	\$21.98
Earth Auger Operator	\$26.65	\$6.12	\$32.77	Propane/Natural Gas Serv/Install	\$32.00	\$9.23	\$41.23
Electrician - Licensed	\$30.13	\$10.27	\$40.40	Rigger	\$23.00	\$7.10	\$30.10
Electrician Helper/Cable Puller	\$18.00	\$3.74	\$21.74	Roller Operator - Earth	\$16.43	\$2.69	\$19.12
Excavator Operator	\$27.00	\$4.29	\$31.29	Roller Operator - Pavement	\$20.25	\$3.56	\$23.81
Fence Setter	\$18.00	\$1.30	\$19.30	Screed/Wheelman	\$18.50	\$2.45	\$20.95
Flagger	\$13.00	\$0.00	\$13.00	Sheet Metal Worker	\$26.56	\$6.03	\$32.59
Grader/Scraper Operator	\$22.00	\$2.16	\$24.16	Truck Driver - Light	\$16.00	\$0.44	\$16.44
Industrial Truck (Forklift) Operator	\$29.07	\$6.63	\$35.70	Truck Driver - Medium	\$19.00	\$1.97	\$20.97
Ironworker - Ornamental	\$22.30	\$22.37	\$44.67	Truck Driver - Heavy	\$21.50	\$2.28	\$23.78
Ironworker - Reinforcing	\$29.23	\$6.82	\$36.05	Truck Driver - Tractor Trailer	\$27.70	\$7.03	\$34.73
Ironworker - Structural	\$21.75	\$4.55	\$26.30				

The Laborer classifications include a wide range of work duties. Therefore, if any specific occupation to be employed on this project is not listed in this determination, call the Bureau of Labor Standards at the above number for further clarification.

Welders are classified in the trade to which the welding is incidental.

Apprentices – The minimum wage rate for registered apprentices are those set forth in the standards and policies of the Maine State Apprenticeship and Training Council for approved apprenticeship programs.

Title 26 §1310 requires that a clearly legible statement of all fair minimum wage and benefits rates to be paid the several classes of laborers, workers and mechanics employed on the construction on the public work must be kept posted in a prominent and easily accessible place at the site by each contractor and subcontractor subject to sections 1304 to 1313.

Appeal – Any person affected by the determination of these rates may appeal to the Commissioner of Labor by filing a written notice with the Commissioner stating the specific grounds of the objection within ten (10) days from the filing of these rates.

A true copy

Attest: 
Scott R. Cotnoir
Wage & Hour Director
Bureau of Labor Standards

Expiration Date: 12-31-2020

Portland
I295 Over Veranda St, WIN 021745.00
CNRR Crossing, WIN 023545.00
I295 Over Washington Ave, WIN 023615.03
October 5, 2020

MaineDOT DBE Project Attainment Target (PAT)
for this Project is .019 %

The MaineDOT seeks to meet the specified annual Disadvantaged Business Enterprise (DBE) usage goal set out by 49 CFR 26.45 through the efforts of contractors seeking to employ qualified DBE subcontractors. We seek to meet this goal by race neutral means and do not, at this time, use contract specific requirements for each project. We do however, understand the capacity of Maine's DBE community and the unique characteristics a project may have that would differ from the broad annual goal.

Taking this into consideration, the MaineDOT will review each project and develop an anticipated attainment or Project Attainment Target (PAT) based on several factors that are project specific. Those factors include:

- ☐ Scope of Work
- ☐ DBE availability according to Specification Item
- ☐ Geographic location
- ☐ DBE capacity

This PAT is developed to assist contractors to better understand the DBE participation that the MaineDOT can reasonably expect for a specific project. The PAT is NOT a mandate but an assessment of the DBE opportunities that this project could meet or exceed. MaineDOT anticipates that each contractor will make the best effort to reach or exceed the PAT for this project.

PORTLAND
295 VERANDA BRIDGE AND VERANDA STREET
BRIDGE AND HIGHWAY IMPROVEMENTS
WIN 21745.00

CONTRACTOR GENERAL NOTE

A Maine Department of Environmental Protection (MDEP) data base review suggested some potential petroleum contamination issues at the project. However, the scope of work for this project suggests petroleum or hazardous waste should not be encountered. However, in light of the urban nature of the area and reported spills, the contractor shall employ appropriate health and safety measures to protect its workers against hazards associated with working near petroleum-impacted soils. Furthermore, the Contractor shall remain alert for any evidence of contamination. If the Contractor encounters evidence of soil or groundwater contamination, the Contractor shall secure the excavation, stop work in the contaminated area, and immediately notify the Resident. The Resident shall contact the Senior Geologist in Maine Department of Transportation's (MaineDOT's) Environmental Office at 207-624-3100 and the MDEP at 800-482-0777. Work may only continue with authorization from the Resident.

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Route: **I-295**
WIN: **23545.00**
Date: **2/19/20**

APPENDIX E

PROTECTION OF RAILROAD TRAFFIC AND STRUCTURES SPECIAL PROVISIONS

1. GENERAL REQUIREMENTS

Part of the work required by the Contract will be performed within a railroad right of way and/or adjacent to the tracks, telephone, telegraph, signal and electric supply lines of a railroad or railroads. The Contractor agrees to perform all such work in compliance with all of the terms of this Special Provision and all safety rules, regulations, or standards applicable to the Railroad. The Contractor shall be fully responsible for all damages arising from his failure to comply with the requirements of this Special Provision. The Contractor shall be deemed to have included all costs in the unit prices of the Schedule of Prices and the Proposal.

2. AMOUNT OF RAILROAD WORK

The estimated amount of work to be done within (2 feet) of the track of State of Maine Railway is 5% of the contract.

3. NUMBER OF TRAINS AND TRAIN SPEED

The Contractor is notified that a maximum speed of (N/A mph) will be considered as prevailing for the operation of trains of the Railroad at this project and that the approximate number of trains per day at this project is 0.

4. PRIORITY OF RAILROAD OPERATIONS

The train movements of the Railroad, and its lessees, and licensees shall have absolute priority over the performance of the Construction Project within the railroad right of way. The Contractor hereby agrees that the hours and times of work within the Railroad right of way must be coordinated through the Railroad and that such hours and times are subject to change without prior notice to the Contractor, unless other prior arrangements have been made through the Railroad.

5. AUTHORITY OF RAILROAD TO STOP WORK

If the Contractor fails to comply with the safety terms of this Special Provision, or if the Chief Engineer of the Railroad determines that the Contractor is using unsafe practices that threaten the safety of rail traffic, rail workers, or the general public, the Railroad shall have the right to immediately order the Contractor to cease work and vacate the

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Railroad's property. The Railroad agrees to confirm any cessation of work in writing by delivering to the Department's Construction Manager a completed Stop Work Order form attached as Exhibit A within 24 hours of giving any such order.

6. ENTRY UPON RAILROAD PROPERTY

The Railroad hereby agrees to permit the Contractor, together with their subcontractors, suppliers, consultants and engineers (the "Contractor"), to enter upon the Railroad property for the purpose of performing the Construction Project, PROVIDED THAT the Contractor complies with all of the terms of this Special Provision and all safety requirements and directions of the Chief Engineer of the Railroad, or his authorized representative (the "Railroad's Chief Engineer").

7. NOTICE REQUIRED BEFORE ENTRY

The Contractor shall give written notice to the Railroad's Chief Engineer at least 3 calendar day(s) in advance of the time it proposes to do work within the limits of the Railroad right-of-way or perform operations that may create a Hazard as specified by this Special Provision. The Contractor shall give such notice regardless of whether the work may also be within the limits of a public highway.

8. HAZARDS

The Contractor shall assess to its own satisfaction hazards which may be caused by its operations. At a minimum, the Contractor agrees that the following shall constitute Hazards.

An operating track shall be considered fouled and subject to hazard when any object is brought nearer than (4 feet) to the gauge line of the near rail of the track.

A signal line or communication line shall be considered fouled and subject to hazard when any object is brought nearer than (4 feet) to any wire or cable.

An electric supply line shall be considered fouled and subject to hazard when any object is brought nearer than (4 feet) to any wire of the line.

Cranes, trucks, power shovels or any other equipment shall be considered as fouling and subjecting to hazard a track, signal line, communication or electric supply line when working in such position that failure of equipment, with or without load, could foul the track, signal line, communication or electric supply line.

Railroad operation will be considered subject to hazard when explosives are used in the vicinity of railroad premises, or during the driving or pulling of sheeting for any footing adjacent to a track, or when erecting structural steel adjacent to a track, or when

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performing work under, across or adjacent to a track, or when operations involve swinging booms or chutes that could in any way come nearer than (4 feet) to the gauge line of the near rail of the track, or when erection or removal of staging, false work or forms fouls a track or wire line.

None of the operations specified as a Hazard above shall be carried on during the approach or passing of a train or without permission from the Railroad's Chief Engineer and the presence of a railroad inspector/flagman, unless other prior arrangements have been made through the Railroad.

9. MINIMUM CLEARANCES

During the construction of staging, false work or forms, the Contractor shall at all times maintain a minimum vertical clearance of (10 feet) above the top of high rail and a minimum side clearance of (4 feet) from the gauge line of the near rail where track is tangent. Additional side clearance must be maintained where track is on a curve.

10. WORK PLAN SUBMITTAL AND APPROVAL

The Contractor shall submit in writing to the Railroad's Chief Engineer or duly authorized representative, and the Department's Railroad Property Manager or his appointed representative, at least 14 calendar day(s) in advance of the start of the project, an outline of his plan for work within the Railroad right of way including contemplated method(s) of construction. This plan must meet with the approval of the Railroad's Chief Engineer and the Department's Railroad Property Manager in every respect. If the Contractor contemplates the use of "on the track equipment", it should so state and obtain from the Railroad the conditions pertaining to such operations. All Railroad costs included in this operation will be borne by the Contractor. In a like manner, any of the Contractor's equipment or material on cars for this project shall be handled in conformance with existing traffic rules with all costs borne by the Contractor.

Prior to submitting their Proposal, the Contractor shall have ascertained from the Railroad and from the Department's Railroad Property Manager or his appointed representative, all information relating to its requirements and regulations and all costs in connection with compliance thereto.

11. EXCAVATIONS

Before excavation for footings adjacent to tracks and/or within the Railroad's right-of-way may commence, whether or not also within the limits of a public highway, plans and calculations for such excavations, prepared by a Professional Engineer authorized to practice in Maine, shall be submitted to the Railroad's Chief Engineer for review and approval. Unless other prior arrangements have been made, the Railroad's Chief Engineer shall have 2 week(s) to perform such review and approval and issue a written

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permission to proceed with the excavation. No excavation shall proceed without such permission.

At a minimum, excavations must utilize proper bracing, shoring, sheeting or other support as determined by the Railroad's Chief Engineer, to support the tracks with railroad traffic. Open excavation shall be suitably planked over when construction operations are not in progress. No excavation work shall be performed by the Contractor within the limits of the Railroad right of way, whether or not also within the limits of a public highway, until the Contractor has ascertained from the Chief Engineer of the Railroad the location of any wires, conduits, pipes, cables or other railroad facilities below the surface of the ground. Damage to any such facilities caused by the failure of the Contractor to ascertain the location of such facilities or by failure to use due care to avoid injury to such facilities shall be at the expense of the Contractor.

12. EQUIPMENT

Equipment of the Contractor shall be in such condition so as to prevent failure that would cause delay in the operation of trains or damage to railroad facilities. Equipment shall not be placed or put in operation adjacent to a track without first obtaining permission of the Railroad. The Railroad agrees that such permission shall not be unreasonably withheld.

13. RAILROAD SERVICES - GENERALLY

When work is to be performed within the Railroad's right-of-way, the Railroad shall provide the services, equipment and materials provided in this Special Provision including, but not limited to, engineering, flagging, inspection, signal protection and/or relocation, and restoration or replacement of the Railroad's track structure or ballast. Further, if the Railroad's Chief Engineer determines that the Contractor's operations do not comply with all of the safety requirements of this Special Provision and all safety requirements and directions of said Chief Engineer, the Railroad will employ the necessary qualified employees to protect its trains and other facilities. The Contractor shall pay to the Railroad the cost for performing all Railroad Services unless said costs are to be paid by the Department as specified in this Special Provision.

14. INSPECTION / FLAGGING

No flagging/inspectors required for the project. If needed someone from RR Maintenance can stop the project.

(a) Responsibility for Cost. The Department will bear the cost of flagging or inspection (including travel time) or any combination thereof up to 0 man days of said flagging or inspection. If, in the opinion of the Railroad's Chief Engineer, further services of a flagger or inspector will be required due to the operations of the Contractor,

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the services will be furnished and the cost thereof (salary, expenses, insurance, taxes and vacation allowance, etc.) shall be paid to the Railroad by the Department, and will be recovered by the Department from the Contractor.

(b) Terms. The minimum hours per day for the Railroad employees engaged in inspection flagging services shall be eight (8) hours. Time at rates for straight time, overtime or for deadheading starts in accordance with established practices in effect in the territory in which the project is located. Information as to these practices should be obtained from the Railroad's Chief Engineer.

The Contractor shall notify the Railroad's Chief Engineer and the Chief Engineer of the Department in writing 3 calendar day(s) before beginning, resuming or suspending work within (4 feet) of the track, so that an inspector may be provided or removed in accordance with the requirements of this Special Provision. An inspector may be removed upon 0 calendar day(s) notice. Failure to give notice of intent to suspend work shall be cause of charge to the Contractor the cost of inspection during the period when work is suspended.

(c) Estimated Cost. The following is an estimate of the cost per day of inspection/flagging necessary for this project. The rates shown include all overhead charges, travel time, deadheading and personal expenses.

Date of estimate 0

Estimated daily rate for four (4) consecutive hours Monday-Friday (straight time): \$0

Estimated daily rate for four (4) consecutive hours Saturday, Sunday, Holiday (overtime): \$0

Estimated rate for hours worked in excess of eight (8) hours in any one day: \$0/hour

Rates charged will be those in effect at the time of the performing the inspection/flagging which may be different than the rates used at the date of the Estimate. The Railroad agrees to notify the Department if rates used to calculate the above estimates change before the date of bids are received for this Contract.

(d) Definitions.

Man day (M.D.) - eight (8) consecutive hours or any portion thereof.

Overtime - Each additional hour or fraction thereof consecutive to and beyond the standard man day will count as 3/16 of a man day.

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Standard Man day - Eight (8) consecutive hour, Monday - Friday between the hours of 6 a.m. to 6 p.m. unless otherwise noted and agreed to by all parties.

Travel Time - Time required by flagger and/or inspector to commute between his or her point of headquarters to the project site. This time shall not be charged in determining available man days.

15. OTHER CONTRACTOR RESPONSIBILITIES

The restoring and resurfacing of tracks, if disturbed due to Contractor's operations, shall be at the expense of the Contractor.

Any other changes made or services furnished by the Railroad as a result of the Contractor will be at the Contractor's expense.

16. EXTRA-CONTRACT SERVICES

Temporary and permanent changes of tracks and telephone, signal and electric supply lines made necessary by or to clear the permanent work of the Contractor as shown on the construction plans and included in the Railroad force account as collectable from the State will be made or caused to be made by the Railroad without expense to the Contractor.

17. INDEMNIFICATION

Where work is being performed over, under, across or adjacent to Railroad premises, the Contractor shall defend, indemnify and save harmless the Railroad and the Maine Department of Transportation from and against any and all loss, cost, damage, claims, suits, demands, or liability for damages for personal injury including death and for damage to property, which may arise from or out of the operations conducted under his contract, occurring by reason of any act or omission of the Contractor, his agents, servants or employees, or by reason of any act or omission of any subcontractor, his agents, servants or employees.

18. INSURANCE

In addition to any other forms of insurance or bonds required under the terms of the Contract, the Contractor will be required to procure and maintain, at its sole cost and expense, the following insurance coverages naming the Railroad as an insured.

(a) Railroad Protective Liability Insurance with limits not less than \$1,000,000.00 per single occurrence and \$2,000,000.00 per aggregate total occurrences.

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- (b) Comprehensive General Liability Insurance protecting against liability from bodily injury or property damage arising out of the Construction Project with limits of not less than \$1,000,000.00 per single occurrence and \$2,000,000.00 per aggregate total occurrences.
- (c) Workers Compensation and Occupational Disease Insurance, as required by law.
- (d) Automobile Liability Insurance covering all motor vehicles used about or in connection with the Construction Project.

If any part of the work is sublet, these insurance coverages shall be provided by or on behalf of the subcontractors to cover their operations

Each policy shall carry an endorsement covering the "save harmless" clause in favor of the Railroad and the Maine Department of Transportation, as set forth in the paragraph, "Responsibility for Damage Claims".

If blasting is to be done in the vicinity of the Railroad, the insurance policies shall include such coverage.

The policies shall be in force before any work is done on the project and shall remain in effect until all work required to be performed under the terms of the contract is satisfactorily completed as evidenced by the formal acceptance by the State and the Railroad.

Before any work is done on the project, the Department of Transportation and the Railroad's Chief Engineer shall be furnished certificates of each policy. Further, the original policy of the Comprehensive General Liability Insurance and the Railroad Protective Liability Insurance shall be furnished to the Railroad's Chief Engineer and a duplicate shall be furnished to the Department of Transportation.

The policy or policies of the Railroad's protective public liability and property damage liability shall be written by a Company authorized to do business in the State of Maine, and shall be signed by the President and Secretary of the Insurance Company and shall be countersigned by an authorized representative of the Company.

19. ROADWAY WORKER SAFETY REGULATION

Notice to all Contractors/Subcontractors and individuals must be aware of the Federal Roadway Worker Safety Regulation, CFR 49, Part 214(c). They may be required to comply with this regulation. Any requirements for them to comply will be discussed at the pre-construction utility meeting.

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EXHIBIT A

ORIGINAL TO CONTRACTOR

MDOT/RAILROAD STOP WORK ORDER

Section A - Contractor	Town
	DOT Railroad Project #
Railroad Name	Location
	Notice #
DESCRIPTION OF SAFETY HAZARD/REASON FOR ORDER	
Standard Violated	RAC (Risk Assessment Code)
	N/R
Railroad Official (Flagger/Inspector) Name	Date
Signature	
SECTION B - ACTION TAKEN:	

cc: MDOT - R.E. or Inspector
MDOT - Utility Section
MDOT - Construction Division
Railroad - Chief Engineer

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1. **Risk Assessment.** Each identified/validated hazard shall be assigned a Risk Assessment Code (RAC) by the Safety Office. The RAC represents the degree of risk associated with the deficiency and combines the elements of hazard severity and mishap probability. The RAC is derived as follows:

a. **Hazard Severity.** The hazard severity is an assessment of the worst potential consequence: Defined by degree of injury, occupational illness, or property damage, which is likely to occur as a result of a deficiency. Hazard severity categories shall be assigned by roman numeral according to the following criteria.

(1) **Category I - Catastrophic:** The hazard may cause death or loss of a facility.

(2) **Category II - Critical:** May cause severe injury, severe occupational illness, or major property damage.

(3) **Category III - Marginal:** May cause minor injury, minor occupational illness, or minor property damage.

(4) **Category IV - Negligible:** Probably would not affect personnel safety or health, but is nevertheless in violation of a NAVOSH standard.

b. **Mishap Probability.** The mishap probability is the probability that a hazard will result in a mishap, based on an assessment of such factors as location, exposure in terms of cycles or hours of operation, and affected population. Mishap probability shall be assigned an Arabic letter according to the following criteria:

(1) Sub-category A - Likely to occur immediately or within a short period of time.

(2) Sub-category B - Probably will occur in time.

(3) Sub-category C - May occur in time.

(4) Sub-category D - Unlikely to occur.

c. **Risk Assessment Code.** The RAC is an expression of risk which combines the elements of hazard severity and mishap probability. Using the matrix shown below, the RAC is expressed as a single Arabic number that can be used to help determine hazard abatement priorities.

	Mishap Probability					RAC
		A	B	C	D	
Hazard Severity	I	1	1	2	3	1 - Critical
	II	1	2	3	4	2 - Serious
	III	2	3	4	5	3 - Moderate
	IV	3	4	5	5	4 - Minor
						5 - Negligible

SPECIAL PROVISIONS
SECTION 104
Utilities

UTILITY COORDINATION

The Contractor has primary responsibility for coordinating their work with utilities after contract award. The Contractor shall communicate directly with the utilities regarding any utility work necessary to maintain the Contractor's schedule and prevent project construction delays. The Contractor shall notify the Resident of any issues.

THE CONTRACTOR SHALL PLAN AND CONDUCT WORK ACCORDINGLY.

MEETING

A Preconstruction Utility Conference, as defined in Subsection 104.4.6 of the Standard Specifications **IS REQUIRED.**

GENERAL INFORMATION

These Special Provisions outline the arrangements that have been made by the Department for utility and/or railroad work to be undertaken in conjunction with this project. The following list identifies all known utilities or railroads having facilities presently located within the limits of this project or intending to install facilities during project construction.

Utilities have been notified and will be furnished a project specification.

Overview:

Utility/Railroad	Aerial	Underground
Central Maine Power	X	
Consolidated Communications	X	X
Spectrum Cable	X	
First Light Fiber	X	
Portland Water District		X
Unitil		X
City of Portland		X

Utility Contact Information		
Utility/Railroad	Contact Person	Contact Phone
Central Maine Power	Jason Ward	629-1432 Office 242-5398 Cell
Consolidated Communications	Marty Pease	535-4208
Spectrum Cable	Mark Pelletier	253-2324 Office 939-2630 Cell
First Light Fiber	Mike Ellingwood	333-3471
Portland Water District	Joe Parent	232-3851
Unitil	Philip Johnson	541-2579

Utility Contact Information – (continued)		
City of Portland - Transportation	Jeremiah Bartlett	874-8891
City of Portland - Wastewater/Stormwater - Operations	John Emerson	874-8468
City of Portland - Wastewater/Stormwater - Engineering	Brad Roland	874-8840

Temporary utility adjustments **ARE** anticipated. If any unexpected utility relocations become necessary, they shall be scheduled in accordance with Section 104 of the Standard Specifications and shall be performed by the appropriate utility company in conjunction with the work by the Contractor. Should the Contractor choose to have any poles temporarily relocated, all work shall be done at the Contractor's request and expense, with no additional cost or schedule impacts to the Department.

Unless otherwise specified, any underground utility facilities shown on the project plans represent approximate locations gathered from available information. The Department cannot certify the level of accuracy of this data. Underground facilities indicated on the topographic sheets (plan views) have been collected from historical records and/or on-site designations provided by the respective utility companies. Underground facilities indicated on the cross-sections have been carried over from the plan view data and may also include further approximations of the elevations (depths) based upon straight-line interpolation from the nearest manholes, gate valves, or test pits.

All adjustments are to be made by the respective utility/railroad unless otherwise specified herein.

Fire hydrants shall not be disturbed until all necessary work has been accomplished to provide proper fire protection.

All clearing and tree removal in areas where utilities are involved must be completed before the utilities are able to relocate their facilities.

It is the responsibility of the Contractor with the Utility Pole owner, to layout all of the proposed pole locations in the field prior to the start of utility relocations. Should any adjustments be needed, the Utility will document adjustments and inform the Department prior to utility relocations.

The Contractor shall provide the utilities access to the new pole locations. Construction of any spot cuts or fills in excess of 2 feet must be completed prior to utility relocations. The Contractor shall prepare a plan for how access and the spot cuts and fills will be accomplished and what the schedule will be for performing the work. This plan will be discussed at the pre-construction utility meeting.

***** Specific information regarding the line voltage can be requested from Central Maine Power*****

Utility working days are Monday through Friday. Times are estimated on the basis of a single crew for each utility. Any times and dates mentioned are **estimates only** and are dependent upon favorable weather, working conditions, and freedom from emergencies. The Contractor shall have no claim against the Department if they are exceeded.

The Contractor shall plan and schedule his work in such a manner that the utilities that are located on this project will not be harmed, damaged or impacted in any way. The Contractor and Utility will coordinate and communicate their work plans in an effort not to interfere with each other's progress or the completion of the project. The Contractor must give the utilities at least 2 weeks prior notification on when the utilities may start their work. If this communication breaks down, then the Contractor shall notify the Utility Coordinator.

BUY AMERICA

Utility construction work performed as part this federal-aid project is subject to the requirements of Buy America in accordance with Federal Regulation 23 CFR 635.410 Section 1518. Specific requirements are presented in MaineDOT Standard Specification Section 100, Appendix A, Section 3.A., Buy America.

AERIAL

Summary:

Utility	Pole Set	New Wires/ Cables	Trans. Wires/ Cables	Remove Poles	Estimated Working Days
Central Maine Power	X	X	X	X	14
Consolidated Communications		X	X		20
Spectrum Cable		X	X		5
First Light Fiber		X	X		5
Total:					44

Utility Specific Issues:

Central Maine Power (CMP)

Central Maine Power has ten poles to set as per the pole list included in this specification and has cables to run/transfer to the new pole locations. The poles adjacent to the duct bank and utility splice boxes shall be set prior to bridge construction activities including installation of temporary works adjacent to Veranda Street.

The Contractor shall notify CMP once all poles are staked, pole access is provided and the clearing and spot cuts/fills are completed. **CMP will require 2 weeks to schedule their work after notice is received.** Once work is scheduled CMP estimates **14 working days to complete their work.** CMP will remove the old poles once all transfers are complete.

Spectrum Cable (Spectrum)

Spectrum Cable has cables to run/transfer to the new pole locations. After CMP has completed their work, Spectrum shall begin their work. **Spectrum will require 2 weeks to schedule their work after notice is received.** Once work is scheduled Consolidated estimates **5 working days to complete their work.**

First Light Fiber

First Light Fiber has cables to run/transfer to the new pole locations. After Spectrum has completed their work, First Light shall begin their work. First Light **will require 2 weeks to schedule their work after notice is received.** Once work is scheduled First Light estimates **5 working days to complete their work.**

Consolidated Communications (Consolidated)

Consolidated has cables to run/transfer/splice to the new pole locations. After First Light has completed their work, Consolidated shall begin their work. **Consolidated will require 2 weeks to schedule their work after notice is received.** Once work is scheduled Consolidated estimates **20 working days to complete their work.**

Pole List:

Existing Pole #	Existing Station	Left/Right		Existing Offset	Proposed Station	Left/Right		Proposed Offset	Comments
		LT	RT			LT	RT		
22	101+62	X		21'					Remain
					102+29		X	39'	Temporary for construction camera
23	103+07	X		21'	103+08	X		25'	Replace Pole
24	103+99	X		28'					Remove Pole
	104+03	X		38'					Remove Stub Pole
25	105+12	X		29'					Remove Pole
26	106+05	X		30'	105+98	X		36'	Replace – Signal Service Pole
					106+87		X	73'	Temporary for construction camera
27	107+25	X		33'	107+25	X		33'	Replace Pole
28	108+71	X		38'					Remain
29	110+13	X		40'	110+13	X		26'	Replace Pole
30	111+11	X		42'	111+11	X		27'	Replace Pole
31	112+38	X		44'	112+37	X		26'	Replace Pole
	113+45		X	34'					Remain - Electric with Meter
33.1 / 32	113+50		X	34'					Remain
32 / 32	113+55	X		42'					Remain
33	113+98		X	25'	113+54		X	28'	Replace Pole
34.1 / 32	114+64	X		37'					Remain
34	115+27		X	24'	115+27		X	29'	Replace Pole
34.1	116+24		X	35'					Remain
35	116+66	X		28'					Remain

UNDERGROUND

Summary:

Utility	Summary of Work	Estimated Working Days
Portland Water District	Replace, relocate and adjust water facilities Adjust sewer facilities	- -
Unitil	Adjust to avoid drainage as needed	-
City of Portland	Adjust sewer facilities	-
Central Maine Power	Install duct bank and utility splice box Pull utility through new duct bank	- 7
Consolidated Communications	Install duct bank Pull utility through new duct bank	- 10
Spectrum Cable	Install duct bank Pull utility through new duct bank Connect service at new pole Sta. 115+27	- 1 1
First Light Fiber	Install duct bank Pull utility through new duct bank	- 1
Total:		20

Utility Specific Issues:

Portland Water District

Portland Water District has a water main within the limits of the project. The Water District intends to replace, relocate and adjust sections of their water facilities. The Water District has entered into an Agreement with the Maine Department of Transportation to include the water work in the Department's contract. The Contractor shall perform the water work as part of the contract and shall include the water work in the schedule for construction. The work shall be completed in accordance with the plans and special provisions for the water work included in the contract documents and shall be completed in a manner that the system remains fully functional at all times unless otherwise approved by the Water District. Provisions for temporary water exist in the contract.

The portion of the duct bank and utility splice boxes shall be set prior to bridge construction activities including installation of temporary works adjacent to Veranda Street.

Portland Water District has sewer mains within the limits of the project and sections of the sewer facilities are intended to be adjusted. The Water District has entered into an Agreement with the Maine Department of Transportation to include the water work in the Department's contract. The Contractor shall perform the sewer work as part of the contract and shall include the sewer work in the schedule for construction. The work shall be completed in accordance with the plans and special provisions for the sewer work included in the contract documents and shall be completed in a manner that the system remains fully functional at all times unless otherwise approved by the Water District.

The Water District requires **2 weeks notification** prior to water or sewer work taking place to schedule their on-site representative for inspection purposes. If a suspension of water or sewer work occurs, Portland Water District requires **2 weeks notification** prior to water or sewer work starting back up to schedule inspection.

Unitil

Unitil has a six-inch 56 psi utility within the project limits which will not be relocated. In areas of potential conflict with the proposed drainage between Sta. 112+00 and 112+75, the Contractor shall work with Unitil and dig test pits to determine the extent of the conflict. Unitil has flexibility in their utility that may allow it to be shifted to avoid the drainage conflict. Unitil requires **2 two weeks** notification prior to digging test pits.

Care shall be taken while trying to expose the gas main and/or service while in the frost

Contractor is required to submit an Equipment Crossing form to Unitil if heavy equipment will be crossing the gas main. The form is included in this specification.

City of Portland

City of Portland has sewer mains within the limits of the project and sections of the sewer facilities are intended to be adjusted. The City has entered into an Agreement with the Maine Department of Transportation to include the sewer work in the Department's contract. The Contractor shall perform the sewer work as part of the contract and shall include the sewer work in the schedule for construction. The work shall be completed in accordance with the plans and special provisions for the sewer work included in the contract documents and shall be completed in a manner that the system remains fully functional at all times unless otherwise approved by the City. The City requires **2 two weeks notification** prior to work taking place to schedule their on-site representative for inspection purposes. If a suspension of sewer work occurs the City requires **2 weeks notification** prior to sewer work starting back up to schedule inspection.

Central Maine Power (CMP)

CMP's plan is to have the Contractor install a 10 way schedule 40 PVC concrete encased duct bank system from a proposed pole at Sta. 103+08, 25' LT and a contractor installed utility splice box at Sta. 103+16, 25' LT to a proposed pole at Sta. 107+25, 33' LT and a contractor installed utility splice box at Sta. 107+14, 36' LT. Please see Special Provision Section 910 – Special Work (Utility Conduit – Concrete Duct Bank) for complete details regarding this work. **CMP estimates 7 working days** to run their conductors and tie into their existing facilities at the proposed utility poles and splice boxes.

Spectrum Cable

Spectrum's plan is to install their utility in the Contractor installed concrete duct bank after CMP install's their utility. **Spectrum estimates 1 working day** to place new cable and splice in the new duct and transfer to the new poles installed by CMP.

First Light Fiber

First Light's plan is to install their utility in the Contractor installed concrete duct bank after Spectrum install's their utility. **First Light estimates 1 working day** to place new fiber in the new duct and transfer to the new poles installed by CMP.

Consolidated Communications (Consolidated)

Consolidated's plan is to install their utility in the Contractor installed concrete duct bank after First Light install's their utility. **Consolidated estimates 10 working days** to place new cable and splice in the new duct and transfer to the new poles installed by CMP.

Consolidated has an existing 18" x 18" concrete encased duct bank that will not be relocated. In areas of potential conflict with the proposed drainage between Sta. 107+75 and 109+00, the Contractor shall work with Consolidated and dig test pits to determine the extent of the conflict. **Consolidated requires 2 two weeks notification** prior to digging test pits.

MAINTAINING UTILITY LOCATION MARKINGS

The Contractor will be responsible for maintaining the buried utility location markings following the initial locating by the appropriate utility or their designated representative.

UTILITY SIGNING

Any utility working within the construction limits of this project shall ensure that the traveling public is adequately protected at all times. All work areas shall be signed, lighted, and traffic flaggers employed as determined by field conditions. All traffic controls shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, as issued by the Federal Highway Administration.

DIG SAFE

The Contractor shall be responsible for determining the presence of underground utility facilities prior to commencing any excavation work and shall notify utilities of proposed excavation in accordance with M.R.S.A. Title 23 3360-A, Maine "Dig Safe" System. The Contractor is also reminded that all utilities on the project may not be members of Dig Safe.

SAFE PRACTICES AROUND UTILITY FACILITIES

The Contractor shall be responsible for complying with M.R.S.A. Title 35-A, Chapter 7-A Sections 751-761 Overhead High-Voltage Line Safety Act. Prior to commencing any work that may come within ten (10) feet of any aerial electrical lines the Contractor shall notify the aerial utilities as per section 757 of the above act.



Equipment Crossing Right of Way Data Sheet

Operator / Contractor: Complete this section **Date:** _____

Contact.	Phone:		
Company:	Location of Work (include vicinity map):		
Address:			
City, State, Zip:	Temporary Impact ☐	Permanent Impact ☐	Logging ☐

Equipment Information		Equipment #1	Equipment #2	Equipment #3	Equipment #4
Type or Model of Equipment					
Total Weight – Fully Loaded					
Track	Width of Track Shoe				
	Length of Track on Ground				
Tired	Number of Wheels				
	Number of axles				
Pavement Type / Thickness					
Soil Type	Clay	☐	☐	☐	☐
	Wet Clay	☐	☐	☐	☐
	Sand & Gravel	☐	☐	☐	☐
	Wet Top Soil	☐	☐	☐	☐

Equipment Information provided by: _____ (signature)

Company completes this section

Company:		
Field Office:	County:	
Contact:	Township:	
Phone:	Asset Group:	State:

Pipeline Name / Number					
Pipeline MAOP / MOP					
Inventory Map #					
Inventory Station #					
Pipe Size					
Grade / Wall Thickness					
Coating Type / Class Location					
Coupled, Welded, or Threaded					
Original Pipe	Open Cut	☐	☐	☐	☐
	Open Cut Rock	☐	☐	☐	☐
	Bored	☐	☐	☐	☐
Pipe Depth					



Equipment Crossing Right of Way Data Sheet

Evaluation Results %SMYS				

Crossing Plan Evaluated by: _____ Date: _____



Equipment Crossing Right of Way Data Sheet

Prior to crossing any GSGT facility, each contractor is required to complete the top portion of the attached form.

Make certain all information is complete and accurate.

Return the completed form to the individual that provided it.

That Company representative will complete the bottom portion of the form and submit it to Engineering Services for review and evaluation (please do not fax).

If properly completed and legible, an evaluation will be performed on each piece of equipment. If not properly completed, the form will be returned to the contractor.

Within 10 working days, the contractor will receive written correspondence from Engineering Services clearly explaining what steps, if any, must be taken to safely cross the Company facilities.

SPECIAL PROVISIONS
SECTION 104
Utilities

UTILITY COORDINATION

The contractor has primary responsibility for coordinating their work with utilities after contract award. The contractor shall communicate directly with the utilities regarding any utility work necessary to maintain the contractor's schedule and prevent project construction delays. The contractor shall notify the resident of any issues. The Contractor shall plan and conduct his work accordingly.

MEETING

A Preconstruction Utility Conference, as defined in Subsection 104.4.6 of the Standard Specifications **is** required.

GENERAL INFORMATION

These Special Provisions outline the arrangements that have been made by the Department for utility and/or railroad work to be undertaken in conjunction with this project. The following list identifies all known utilities or railroads having facilities presently located within the limits of this project or intending to install facilities during project construction.

Utilities have been notified and will be furnished a project specification.

Overview:

Utility/Railroad	Aboveground	Underground
Maine Railroad	X	
Unitil Gas		X
MaineDOT		X

Town: **Portland**
Road Name: **Interstate 295**
Project: **WIN 23545.00**
WIN 23615.03
Date: **Feb 19, 2020**

Utility working days are Monday through Friday. Times are estimated on the basis of a single crew for each utility. Any times and dates mentioned are **estimates only** and are dependent upon favorable weather, working conditions, and freedom from emergencies. The Contractor shall have no claim against the Department if they are exceeded.

If the **Contractor** feels temporary relocation is necessary they must notify the **Department** of their concerns prior to bid.

In all cases, the utilities shall be notified, by the Contractor, well in advance (two weeks) before work in any area is to commence.

The Contractor shall plan and schedule his work in such a manner that the utilities that are located on this project will not be harmed, damaged or impacted in any way. The Contractor and Utility will coordinate and communicate their work plans in an effort not to interfere with each other's progress or the completion of the project. The Contractor must give the utilities at least 2 weeks prior notification on when the utilities may start their work. If this communication breaks down then the Contractor shall notify the Utility Coordinator.

AERIAL

No Aerial distribution cables are over this bridge and no adjustments are anticipated as part of this project. All above ground utility locations (hydrants, poles, guys, etc.) will be reviewed for compliance with the Department's Above Ground Pole Policy following the completion of the job. The bidding contractors are encouraged to visit the site, prior to bid, and review these locations.

Clearing and tree removal, if part of this contract in areas where utilities are involved, will be completed by the Contractor. Any tree removal or tree trimming must be done by a licensed arborist. The arborist is responsible for overseeing the work and must abide by all applicable OSHA standards including but not limited to those involving working within 10-20 feet of electrical hazards.

Depending on the method of slope access the Contractor may be working next to, or under the existing wires. These lines must stay energized, so the contractor is encouraged to visit the site, prior to bid, to determine how to construct safely. Temporary utility adjustments are not anticipated. If temporary relocation becomes necessary, the contractor shall notify the affected

utilities. Any cost for temporary relocations shall be the responsibility of the Contractor. The Contractor shall not have any claims against the department if the existing lines become a construction issue. Sufficient time will need to be allowed prior to the construction for all required temporary relocation.

The Contractor shall not excavate around any pole, guy anchor or street light to a depth that compromises the stability of the pole.

SUBSURFACE

Maine DOT may have underground conduits running in the shoulder and bridge curb of the existing approaches for site lighting. If after the Digsafe process these lines conflict with proposed work, the Contractor shall immediately contact the Resident for guidance on how to proceed.

Until Gas Company has a gas main that runs in the railroad corridor, parallel with the tracks underground. This main should have no impact to the scope of the project. There are no underground utilities near or under the bridge that will be removed. No utility involvement is anticipated. If the scope of the project changes and underground utilities are discovered within that change in scope through the dig-safe process the contractor must notify the Resident immediately for guidance.

UTILITY SIGNING

The Contractor shall make sure any utility working within the construction limits of this project, shall ensure that the traveling public is adequately protected at all times. All work areas shall be signed, lighted, and traffic flaggers employed as determined by field conditions. All traffic controls shall be in accordance with the latest edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, as issued by the Federal Highway Administration.

RAILROAD

MaineDOT Railroad owns the rail line that runs under the bridge. This rail is currently **inactive** and does not need railroad flagging protection. If for some reason the rail line needs to be temporarily active, the Department will provide the flagging protection at no cost to the Contractor. This contract contains a PRTS Railroad document that the Contractor needs to review. It dictates distances the contractor's equipment's needs to be from the rail, so not to damage the crossing, as well as insurance requirements that the contractor needs to submit to the DOT Railroad Department. The contact for the DOT Railroad is Greg Gay at 207-592-1766.

Town: **Portland**
Road Name: **Interstate 295**
Project: **WIN 23545.00**
WIN 23615.03
Date: **Feb 19, 2020**

SAFE PRACTICES AROUND UTILITY FACILITIES

The Contractor shall be responsible for complying with M.R.S.A. Title 35-A, Chapter 7-A Sections 751 -761 Overhead High-Voltage Line Safety Act. Prior to commencing any work that may come within ten (10) feet of any aerial electrical line; the Contractor shall notify the aerial utilities as per section 757 of the above act.

DIG SAFE

The Contractor shall be responsible for determining the presence of underground utility facilities prior to commencing any excavation work and shall notify utilities of proposed excavation in accordance with M.R.S.A. Title 23 §3360-A, Maine “Dig Safe” System. The contractor is also reminded that all utilities on the project may not be members of Dig Safe.

MAINTAINING UTILITY LOCATION MARKINGS

The Contractor will be responsible for maintaining the buried utility location markings following the initial locating by the appropriate utility or their designated representative.

The following utilities are known to be located on this project:

<u>Utility Companies</u>	<u>Utility Contact</u>	<u>Phone</u>
MaineDOT	Ron Cote	(207) 446-2305
Maine Railroad	Greg Gay	(207) 592-1766
Unitil Gas	Kelly Brown	(207)210-3310

SPECIAL PROVISION
SECTION 104
(WAGE RATES)

When two or more wage rate schedules appear in the bid Book, the highest rate shall prevail for each classification.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Buy America Certification)

105.11 Federal Requirements Add the following as the third and subsequent paragraphs:

“Prior to payment by the Department, the Contractor shall provide a certification from the producer of steel or iron, or any product containing steel or iron as a component, stating that all steel or iron furnished or incorporated into the furnished product was manufactured in the United States in accordance with the requirements of the Buy America provisions of 23 CFR 635.410, as amended. Such certification shall also include (1) a statement that the iron or steel product or component was produced entirely within the United States, or (2) a statement that the iron or steel product or component was produced within the United States except for minimal quantities of foreign steel and iron valued at \$ (actual value).

All manufacturing processes must take place domestically. Manufacturing begins with the initial melting and mixing, and continues through the coating stage. Any process which modifies the chemical content, the physical size and shape, or the final finish is considered a manufacturing process. These processes include rolling, extruding, machining, bending, grinding, drilling, and coating. “Coating” includes epoxy coating, galvanizing, painting, or any other coating that protects or enhances the value of the material.

A Buy America Certification is required from each manufacturer, fabricator, supplier, subcontractor, etc. that meets the “manufacturing” definition above.

Buy America does not apply to raw materials (iron ore and alloys), scrap, pig iron, or processed, pelletized, and reduced iron ore.”

Town: Portland
WIN #: 21745.00
Date: 03/16/20

SPECIAL PROVISION
SECTION 105
General Scope of Work
(Environmental Requirements)

In-Water work consists of any activity conducted below the normal high water mark of a river, stream, brook, lake, pond or “Coastal Wetland” areas that are subject to tidal action during the highest tide level for the year which an activity is proposed as identified in the tide tables published by the National Ocean Service. <http://www.oceanservice.noaa.gov/> For the full definition of “Coastal Wetlands”, please refer to 38 MRSA 480-B(2)

- I. In-Water work applies to Casco Bay and associated coastal wetlands at the proposed stormwater outfall replacement location.
- II. All intertidal construction below Highest Annual Tide Elevation 6.5 (NAVD88) shall be performed in the dry to minimize potential impacts to fisheries and essential fish habitat. Work will be completed within 1-2 low tidal stages to minimize and/or avoid sedimentation to adjacent coastal environments.
- III. Special Conditions:
 1. Special Conditions of Army Corps of Engineers (ACOE) Category II permit apply (see permit and conditions in contract documents).
 2. Special Conditions of Informal Endangered Species Act (Section 7) FHWA Programmatic Consultation and Essential Fish Habitat Consultation with National Marine Fisheries Service (summarized in this Special Provision 105 and ACOE permit).
 3. Silt or turbidity curtains (or similar controls) will be erected upslope/outside the salt marsh edge to define the work limit. Turbidity controls shall be maintained to prevent sedimentation or turbidity from impacting adjacent coastal environment. Turbidity controls for the northern pipe shall be placed immediately outside/upslope of the salt marsh near the proposed riprap pad to prevent fill/impacts to salt marsh. Turbidity control measures must be properly secured and monitored to ensure aquatic species are not entangled or trapped in the project area.
 4. Perimeter controls must be installed before work starts. Disturbance of natural resources beyond the construction limits shown on the plans is prohibited.
 5. All construction activities shall be conducted in accordance with the MaineDOT-approved Soil Erosion and Water Pollution Control Plan (SEWPCP). Instream turbidity will be visually monitored, and all erosion controls will be inspected daily to ensure that the measures taken are adequate. If inspection shows that the erosion controls are ineffective, immediate action will be taken to repair, replace, or reinforce controls as necessary.
 6. The exposed portion of the existing northern outfall pipe will be removed. End of pipe shall be removed without using heavy machinery to access the area to avoid temporary impacts at this location.
 7. All areas of temporary fill must be within the specified limits on the plans and shall be restored to their original contour and character upon completion of the work.
 8. As a component of the SEWPCP required for each project, the Contractor shall develop and implement a Spill Prevention Control and Countermeasure Plan (SPCCP) designed to avoid any stream impacts from hazardous chemicals, such as diesel fuel, oil, lubricants, and other hazardous materials. All refueling or equipment maintenance shall take place away from the stream and in a careful manner that prohibits chemical or other hazardous materials from entering the stream. These measures include the following:

Town: Portland
WIN #: 21745.00
Date: 03/16/20

- a. All vehicle and equipment refueling activities shall occur more than 100 feet from any water course.
- b. All vehicles carrying fuel shall have specific equipment and materials needed to contain or clean up any incidental spills at the Project site. Equipment and materials would include spill kits appropriately sized for specific quantities of fuel, shovels, absorbent pads, straw bales, containment structures and liners, and/or booms.
- c. During use, all pumps and generators shall have appropriate spill containment structures and/or absorbent pads in place.
- d. All equipment used for in-stream work shall be cleaned of external oil, grease, dirt, and mud.
- e. Any leaks or accumulations of these materials would be corrected before entering areas that drain directly to streams or wetlands.

VI. Approvals:

1. Temporary Soil Erosion and Water Pollution Control Plan
2. Permitted Coastal Wetland Impacts (square feet), see ACOE permit for locations:
Permanent (ERS): 398
Temporary (ERS): 800
Permanent (EEM): 125 (hydraulic scour)

VII. All activities are prohibited (including placement and removal of cofferdams unless otherwise permitted by Regulatory Agencies) below the normal high water mark if outside the prescribed in-water work window, except for the following:

1. Work within a cofferdam constructed per MaineDOT's Standard Specifications and in adherence with the contractors approved "Soil Erosion and Water Pollution Control Plan".

NOTE: Regulatory Review and Approval is required to modify the existing In-Water work window. Requests for work window extensions must be submitted to the MaineDOT Environmental Office. Approval of requests for work window extensions is not guaranteed and may result in delays in construction schedule that are the sole responsibility of the contractor.

SPECIAL PROVISION 105
CONSTRUCTION AREA

A Construction Area located in the **City of Portland** has been established by the Maine Department of Transportation (MDOT) in accordance with provisions of 29-A § 2382 Maine Revised Statutes Annotated (MRSA).

- (a) The sections of highway under construction in the city of Portland, Cumberland County on Interstate 295 over Veranda Street/ US Route 1. Interstate 295 Northbound Veranda Street off ramp. Interstate 295 Southbound Veranda Street on ramp. Veranda Street/ US Route 1. Wordsworth Street. Oregon Street. Olympia Street. Interstate 295/ US Route 1 over CNRR Railroad and southbound over Washington Avenue/ Route 26.
- (b) (Interstate 295) over Veranda Street/ US Route 1 station 35+00.00 to station 43+00.00 of the construction plus approaches.
- (c) (Interstate 295 Northbound Veranda Street/ US Route 1 off ramp) station 303+50.00 to station 308+44.82 of the construction plus approaches.
- (d) (Interstate 295 Southbound on ramp) station 200+05.00 to station 202+50.28 of the construction plus approaches.
- (e) (Veranda Street/ US Route 1) station 100+50.00 to station 118+12.00 of the construction plus approaches.
- (f) (Wordsworth Street) station 1+18.70 to station 1+75.00 of the construction plus approaches.
- (g) (Oregon Street) station 5+18.00 to station 5+50.00 of the construction plus approaches.
- (h) (Olympia Street) station 3+18.04 to station 3+50.00 of the construction plus approaches.

Per 29-A § 2382 (7) MRSA, the MDOT may “*issue permits for stated periods of time for loads and equipment employed on public way construction projects, United States Government projects or construction of private ways, when within construction areas established by the Department of Transportation. The permit:*

A. Must be procured from the municipal officers for a construction area within that municipality;

B. May require the contractor to be responsible for damage to ways used in the construction areas and may provide for:

(1) Withholding by the agency contracting the work of final payment under contract; or

(2) The furnishing of a bond by the contractor to guarantee suitable repair or payment of damages.

The suitability of repairs or the amount of damage is to be determined by the Department of Transportation on state-maintained ways and bridges, otherwise by the municipal officers;

C. May be granted by the Department of Transportation or by the state engineer in charge of the construction contract; and

D. For construction areas, carries no fee and does not come within the scope of this section.”

The Municipal Officers for the **City of Portland** agreed that an Overlimit Permit will be issued to the Contractor for the purpose of using loads and equipment on municipal ways in excess of the limits as specified in 29-A MRSA, on the municipal ways as described in the “Construction Area”.

As noted above, a bond may be required by the municipality, the exact amount of said bond to be determined prior to use of any municipal way. The MDOT will assist in determining the bond amount if requested by the municipality.

The maximum speed limits for trucks on any town way will be 25 mph (40 km per hour) unless a higher legal limit is specifically agreed upon in writing by the Municipal Officers concerned.

Portland
WIN 021745.00, WIN 023545.00, WIN 023615.03
Interstate 295 over Veranda Street, CNRR & Washington Ave.
September 24, 2020

SPECIAL PROVISION
SECTION 107
TIME
(Contract Time)

The specified Contract completion date is November 18, 2022.

SPECIAL PROVISION
SECTION 107
GENERAL SCOPE OF WORK
(Work Times)
(Supplemental Liquidated Damages)

The following requirements apply to the work at the Canadian National Railroad and Washington Avenue Bridges:

The Contractor may complete the work at the Canadian National Railroad (CNRR) and Washington Avenue Bridges during the I-295 over Veranda Street Interstate Closure period. If this work is completed during the Interstate Closure period, the work at CNRR and Washington Avenue shall be subject to the requirements of the Section 107 Special Provisions for I-295 over Veranda Street, WIN 21745.00, pertaining to Work Times, Supplemental Liquidated Damages and On-Time Completion Bonus with respect to all traffic restrictions on I-295, including the Interstate Closure, lane closures and restrictions and shoulder closures. Consequently, the work at CNRR and Washington Avenue Bridges will fall under the work for I-295 over Veranda Street with respect to these provisions and could affect the Contractor's ability to receive the on-time completion bonus for Reopening to All Lanes of Traffic and any assessment of Supplemental Liquidated Damages outlined in the 107 Special Provisions for WIN 21745.00.

The Contractor may complete the work at the CNRR and Washington Avenue Bridges separately from the Interstate Closure for the I-295 over Veranda Street Bridge. The following provisions shall apply:

1. Allowable closure periods for each construction zone are determined seasonally: Spring is defined as March through May; Summer is defined as June through August; and Fall is defined as September through October.

No work on the interstate shall be permitted during the following holiday periods:

- Memorial Day Weekend: 6:00 a.m. May 22, 2020 to 9:00 p.m. May 25, 2020 and 6:00 a.m. May 28, 2021 to 9:00 p.m. May 31, 2021;
- July 4th Weekend: 6:00 a.m. July 3, 2020 to 9:00 p.m. July 6, 2020 and 6:00 a.m. July 2, 2021 to 9:00 p.m. July 5, 2021; and
- Labor Day Weekend: 6:00 a.m. September 4, 2020 to 9:00 p.m. September 7, 2020 and 6:00 a.m. September 3, 2021 to 9:00 p.m. September 6, 2021.

2. Work at the three structures is combined into two work zones as follows:

Work Zone 1

- I-295 SB Bridge over Washington Avenue (Bridge No. 0816)
- I-295 SB Bridge over Canadian National Railroad (Bridge No. 5616)

Work Zone 2

- I-295 NB over Canadian National Railroad (Bridge No. 5616)

3. The Contractor shall provide weekly updates to the Resident Engineer regarding anticipated roadway and lane closures so the Department and City of Portland can update the public on construction activities. Payment shall be incidental to the Contract. The Contractor shall notify the resident at least 10 days in advance of planned ramp, lane, or mainline closures. The Contractor shall also setup portable changeable message sign(s) at least 7 days in advance of the planned ramp or mainline closures notifying motorists of the planned work.

4. Allowed Lane and Roadway Closure Times:

- a. Work Zone 1: I-295 SB Bridge over Washington Avenue (Bridge No. 0816) and I-295 SB over Canadian National Railroad (Bridge No. 5616):

For both construction phases the work may be completed using nightly lane closures. The Exit 9 Veranda Street Southbound On Ramp shall be closed to traffic when the I-295 SB travel lane is closed.

At the Contractor's option, the I-295 SB over Washington Avenue Bridge may be closed to traffic.

Vehicles shall be detoured as shown on the plans during all bridge and ramp closures.

For all construction phases, nighttime lane closures are permitted as follows:

I-295 SB Bridges over Washington Ave/CNRR Single Lane Closure Times			
Day	Season	Start (PM)	End (AM)
Weekday (Mon- Thurs)	Spring	8:30	5:30
	Summer	9:30	5:30
	Fall	8:30	5:30
Sunday	Spring	10:30	7:30
	Summer	10:30	8:30
	Fall	10:30	7:30

- b. Work Zone 2: I-295 NB Bridge over CNRR (Bridge No. 5616):

For both construction phases the work may be completed using nightly lane closures for CNRR Bridge.

The Exit 8 Baxter Boulevard Northbound On Ramp shall be closed to traffic and the Exit 9 Veranda Street Northbound Off Ramp shall be reduced to one lane of traffic when the I-295 NB travel lane is closed. Vehicles shall be detoured as shown on the plans during ramp closures.

For all construction phases, nighttime lane closures are permitted as follows:

I-295 NB Bridges over CNRR Single Lane Closure Times			
Day	Season	Start (PM)	End (AM)
Weekday (Mon- Thurs)	Spring	8:30	5:30
	Summer	9:30	5:30
	Fall	8:30	5:30
Sunday	Spring	10:30	7:30
	Summer	10:30	8:30
	Fall	10:30	7:30

5. For the ramp and mainline closures, a closure notification plan meeting the requirements of Section 104.4.10 must be included in the Traffic Control plan. The Contractor shall coordinate planned roadway closures with other projects potentially impacting traffic on I-295.
6. A construction work zone speed of 40 mph shall be used.
7. The Contractor may utilize multiple bridge repair crews as long as applicable sections of Special Provision 652 are met, provided the Resident is given 72 hours notice.
8. Any proposed changes to, or combination of, the work zones presented on the plans shall be submitted to the Resident for approval prior to the start of work.
9. Deliveries to work zones scheduled between the hours of 6:00 am and 7:00 pm will be permitted only when, in the opinion of the Resident, such deliveries do not create unacceptable delay or safety hazards to the traveling public.
10. Supplemental Liquidated Damages

Supplemental liquidated damages will be assessed for each remaining closed lane, and for each remaining closed ramp, at each location after the specified lane opening time as described below:

- First 15-minute increment, or any portion thereof..... \$500.00
- Second 15-minute increment, or any portion thereof..... \$750.00
- Third 15-minute increment, or any portion thereof..... \$1,000.00
- Fourth 15-minute increment, or any portion thereof.....\$1,250.00
- Each additional 15-minute increment, or any portion thereof..... \$1,500.00

These charges will be cumulative in nature as described. However, the escalation shall reset at the conclusion of each lane closure. For example, if a single lane closure was removed 45 minutes late on the first work night, and then 10 minutes late on a

second work night, or on a second unrelated lane closure, the supplemental liquidated damages incurred on the second night would be \$500.

107.3.2 Night Work Add the following to this section:

Night work is not restricted during the designated WIN 21745.00 I-295 over Veranda Street Interstate Closure Period. Night work occurring outside of the designated WIN 21745.00 I-295 over Veranda Street Interstate Closure Period will only be permitted Sunday through Thursday; the Contractor shall not undertake Night Work on Saturday nights, or during the Holiday periods defined in above.

SPECIAL PROVISION
SECTION 107
TIME
(On-Time Completion Bonus)

The following provisions apply to this contract:

DEFINITIONS

1. "Interstate Closure" is defined as the full closure of I-295, both northbound and southbound, during the single allowed Interstate closure period described in Special Provision 107, Time, Work Times, Supplemental Liquidated Damages, under 107.3.1, General.
2. "Reopened to All Lanes of Traffic" is defined as reopening I-295 to two 12 foot lanes of traffic with 3 foot shoulders, both northbound and southbound, at the completion of the Interstate Closure described herein, as well as the removal or covering of all associated temporary detour signage, the removal of all detour messages from PCMS boards, and restoring all roadways restricted as part of the Interstate Closure to their pre-closure configuration.

In addition, the bridge will be considered Reopened to All Lanes of Traffic when the following items are complete, in place, inspected and accepted: the replacement bridge superstructure located in its final position, structural connections between the upper and lower portions of the abutments with all required bolts installed and torqued to project specifications, all bridge waterproofing membrane, base pavement, permanent bridge barrier, and permanent transition barriers. The bridge approaches will be considered Reopened to All Lanes of Traffic when the following items are complete, in place, inspected and accepted: all base pavement, temporary pavement ramps, temporary or permanent median barrier, line striping, and either permanent guardrail or temporary barrier on I-295.

TIME

1. After I-295 is Reopened to All Lanes of Traffic the Contractor is allowed to utilize lane closures in accordance with Special Provision 107, Time, Work Times, Supplemental Liquidated Damages, to finish final paving, guardrail, permanent median barrier, and other incidentals related to the project.
2. The Contractor shall plan and complete the Work in such a manner that the Interstate Closure is in conformance with the times specified in Special Provision 107, after which the interstate shall be Reopened to All Lanes of Traffic.

ON TIME COMPLETION BONUS

The Contractor will be paid an on-time completion bonus if I-295 is Reopened to All Lanes of Traffic on or before the Monday immediately following the start of the Interstate Closure, as described below:

- On or before Monday at 7:00 a.m.....\$600,000
- On or before Monday at 8:00 a.m.....\$450,000
- On or before Monday at 9:00 a.m.....\$300,000
- On or before Monday at 10:00 a.m.....\$150,000
- On or before Monday at 11:00 a.m.....\$50,000

The above values are not additive.

SPECIAL PROVISION
SECTION 107
TIME
(Work Times)
(Supplemental Liquidated Damages)

The following requirements apply to all work in this Contract:

107.3.1 General Add the following to this section:

The installation of shim pavement and the final lift of pavement on the I-295 mainline and bridge shall occur at least five months after the installation of base pavement.

The Contractor shall be permitted limited single lane and full closures of I-295 (Interstate Closure), the I-295 ramps at Veranda Street, and Veranda Street to perform specific work activities that cannot be completed adjacent to, or over, live traffic. A minimum of four lanes on I-295 (two in the northbound direction and two in the southbound direction), one lane on the I-295 southbound on ramp, one or two lanes on the I-295 northbound off ramp depending on location, and two lanes on Veranda Street (one in each direction) shall remain open at all times, except as specified herein.

Roadways shall be cleaned of all demolition debris and construction materials prior to reopening the roadway, and following approval by the Resident.

The Contractor shall provide weekly written updates to the Resident Engineer regarding anticipated roadway and lane closures so the Department, City of Portland, Town of Falmouth and Maine Turnpike Authority can update the public on construction activities. Payment shall be incidental to the Contract.

The definitions for “Interstate Closure” and “Reopened to All Lanes of Traffic”, as defined in Special Provision 107, Time, On-Time Completion Bonus, shall apply to the provisions herein.

Allowed Lane and Roadway Closure Times:

1. *Interstate Closure:*

The Contractor is permitted to close I-295 northbound and southbound, hereafter referred to as the Interstate Closure, once for the purpose of rapidly demolishing the existing bridge superstructure, moving the replacement superstructure into place, and for completing approach work and incidentals necessary to reopen the roadway to traffic.

The Interstate Closure shall occur during one of the following two periods at the discretion of the Contractor:

- Option 1: Friday, October 22, 2021 at 7:00 PM to Monday, October 25, 2021 at 7:00 AM
- Option 2: Friday, April 15, 2022 at 7:00 PM to Monday, April 18, 2022 at 7:00 AM

The Contractor shall notify the Department of the selected Interstate Closure Date on or before 5:00 p.m. on February 26, 2021. No changes will be permitted after this date.

During the Interstate Closure, I-295 will be closed to public travel southbound beginning immediately south of Exit 10 (Bucknam Road) and ending at Exit 8 (Washington Avenue), and northbound beginning immediately north of Exit 9 (Veranda Street) and ending south of Exit 10 (Bucknam Road). If extreme weather is anticipated during the previously defined Interstate Closure, the Interstate Closure may be postponed as follows:

- For Option 1: October 22, 2021 to October 25, 2021
 - o Friday October 29, 2021 at 7:00 PM to Monday November 1, 2021 at 7:00 AM. The Contractor may request an extreme weather postponement on or before 12:00 PM on Monday October 18, 2021.
- For Option 2: April 15, 2022 to April 18, 2022
 - o Friday April 22, 2022 at 7:00 PM to Monday April 25, 2022 at 7:00 AM. The Contractor may request an extreme weather postponement on or before 12:00 PM on Monday April 11, 2022.

The final determination on whether to postpone the Interstate Closure shall be at the sole discretion of the Department. If the Interstate Closure is postponed all dates in this special provision shall be adjusted accordingly.

The following additional closures, lane restrictions and improvements shall be in place during the interstate closure period:

- a. The following non-interstate roadway traffic control shall be in place a maximum of two hours before the start of the Interstate Closure:
 - i. Westbound Depot Street closure from Route 88 to Route 1
 - ii. Falmouth Road Closure (between Lunt Road and Route 9)
- b. The following interstate roadway traffic control shall be in place a maximum of one hour before the start of the Interstate Closure, except as noted:
 - i. I-95 southbound travel lane closure at the Exit 52 on ramp from the Falmouth Spur (Note: The I-95 southbound roadway shall be reopened to two lanes of traffic by no later than 7:00 on the Monday immediately

- following the beginning of the Interstate Closure Period regardless of whether the Interstate Closure remains in place at that time)
- ii. I-295 southbound passing lane closure in advance of Exit 11, Falmouth Spur
 - iii. I-295 southbound traffic shift directing all motorists to exit I-295 at Exit 10, Bucknam Road (in place a maximum of 15 minutes before the Interstate Closure)
 - iv. I-295 northbound passing lane closure in advance of Exit 8, Washington Avenue
 - v. I-295 northbound traffic shift directing all motorists to exit I-295 at Exit 9, Veranda Street (in place a maximum of 15 minutes before the Interstate Closure)
 - vi. At the Contractor's option, the I-295 northbound off ramp to Veranda Street may be restricted to a single lane of traffic.
 - vii. At the Contractor's option, single lane closures on I-295 northbound and/or southbound are permitted for the purposes of staging equipment and/or materials in advance of the Interstate Closure.

Following implementation of the detours, and closure of the interstate, the Resident, or their designee, shall drive the closed portion of the interstate and verify no vehicles remain on the closed portion of the roadway. The Contractor will be released to work within the closed roadway upon confirmation from the Resident that the roadway is closed and acceptably cleared of vehicles.

2. *Veranda Street and I-295 SB On-Ramp Closure (hereafter referred to as the "Veranda Street Closure"):*

The Contractor is permitted to close Veranda Street, and the I-295 southbound on-ramp from Veranda Street, to motorists, pedestrians and bicyclists, hereafter referred to as the Veranda Street Closure Period, for 7 continuous Calendar Days for the purpose of mobilizing\demobilizing equipment, stockpiling and removing materials, demolishing the existing superstructure, completing the bridge move, and for general preparations and cleanup related to the Interstate Closure. The Veranda Street Closure is scheduled to begin at 2:00 PM on the Wednesday preceding the Interstate Closure and ending at 2:00 PM on the Wednesday immediately following the Interstate Closure. The Contractor may adjust the start time and end time of the Veranda Street Closure by up to 48 hours to suit the Contractor's planned work activities. The start time and end time shall be adjusted by the same amount to maintain a maximum 7-day closure. The Contractor shall notify the Department of the proposed Veranda Street Closure Period on or before 5:00 p.m. on February 26, 2021. No changes will be permitted after this

date.

The limits of the Veranda Street Closure shall encompass the area beginning at the easterly limit of Wordsworth Street and extending west to the westerly edge of Oregon Street. During the Veranda Street Closure Period access to side streets, residences and businesses shall be maintained, except as noted on the plans.

The following non-interstate off-site lane restrictions and improvements shall be in place prior to implementing the Veranda Street Closure Period:

- a. Route 1 north detour signs in place and uncovered (≤ 2 hours before closure)
- b. Route 1 south detour signs in place and uncovered (≤ 2 hours before closure)

The following traffic control installations are not related to the Interstate Closure or Veranda Street Closure but are allowed as part of this Contract:

3. *I-295 Single Lane Closures:*

The use of single lane closures will be allowed for the completion of work that cannot, in the opinion of the Resident, be reasonably or safely completed without a lane closure in place; single lane closures will not be permitted for the convenience of the Contractor.

Single lane closures on I-295 northbound and/or southbound near Veranda Street are permitted Sunday through Thursday, beginning at 9:00 PM and ending at 5:30 AM the following morning. The Contractor shall maintain a minimum travelway width, inclusive of lane and shoulder widths, of 15 feet in each direction.

4. *I-295 Shoulder Closures:*

The Contractor is permitted to install temporary concrete barrier to close the outside shoulders on I-295 to facilitate shoulder widening, preparations for the interstate closure, and for the installation of approach guardrail.

I-295 Shoulder Closures will be permitted at any time during the Contract. During shoulder closure periods the Contractor shall maintain a minimum of two 3-foot shoulders and two 12-foot travel lanes.

5. *I-295 southbound on-ramp Lane Shifts:*

Single lane closures on the I-295 southbound on ramp from Veranda Street are not permitted. However, traffic is permitted to be shifted into the shoulders to provide a work zone for reconstruction.

I-295 southbound on-ramp lane shifts will be permitted at any time during the Contract.

The Contractor shall maintain a minimum travelway width, inclusive of ramp lane and shoulder widths, of 15 feet. Ramp traffic may be shifted only when work is occurring on site.

6. *I-295 northbound off-ramp Lane Closures:*

Within the single lane portion of the off-ramp the Contractor is permitted to shift traffic into the ramp shoulders to provide additional work space.

I-295 *northbound off-ramp* lane shifts will be permitted at any time during the Contract. The Contractor shall maintain a minimum travelway width, inclusive of ramp lane and shoulder widths, of 15 feet. Ramp traffic may be shifted only when work is occurring on site.

Complete closures of the I-295 northbound off-ramp is not allowed at any time.

7. *Veranda Street, Olympia Street, Oregon Street and Wordsworth Street Lane Closures:*

The use of lane closures on Veranda Street, Olympia Street, Oregon Street and Wordsworth Street will be allowed for the completion of work that cannot, be reasonably, expeditiously or safely completed without a lane closure in place, as approved by the Resident.

Single lane closures with alternating traffic controlled by flaggers are allowed Monday through Saturday, between 9:00 AM and 4:00 PM, and between 8:00 PM and 6:00 AM.

8. *Short Term Traffic Stoppages:*

Short term traffic stoppages on I-295 and Veranda Street, lasting up to five minutes, are permitted for the mobilization of equipment, or for the delivery of materials that cannot be reasonably completed without a stoppage. All such traffic stoppages shall occur between 10:00 PM and 5:00 AM and will require proper advanced notification, signage and a State Trooper Detail.

Short Term traffic stoppages on Veranda Street, lasting up to 20 minutes, are permitted for the sole purpose of erecting structural steel. All such traffic stoppages shall occur between 10:00 PM and 5:00 AM and will require proper advanced notification, signage and a State Trooper Detail.

Pedestrian and bicycle traffic do not need to be maintained during periods of traffic stoppages on Veranda Street.

For the Interstate Closure and the Veranda Street Closure a closure notification plan meeting the requirements of Standard Specification 104.4.10 must be included in the Traffic Control Plan.

The Contractor shall coordinate planned roadway closures with other projects potentially impacting traffic on I-295.

Supplemental Liquidated Damages:

The following supplemental liquidated damages shall apply to traffic control installations related to the Interstate Closure and/or Veranda Street Closure.

1. Interstate Closure:

The Contractor shall plan and conduct the work such that I-295 is Reopened to All Lanes of Traffic at the end of the Interstate Closure period as defined in Special Provision 107, Time - On Time Completion Bonus.

Supplemental liquidated damages will be assessed if I-295 is not Reopened to All Lanes of Traffic in accordance with the times and values outlined in Table 1. The supplemental liquidated damages noted for each day shall be cumulative.

Table 1: Supplemental Liquidated Damages for Interstate Closure

	Time of Roadway Reopening	Incremental Supplemental Liquidated Damage	Cumulative Supplemental Liquidated Damage
Monday immediately following start of Interstate Closure	12:00 AM - 11:00 AM	\$ -	\$ -
	11:01 AM - 12:00 PM	\$ 50,000.00	\$ 50,000.00
	12:01 PM - 1:00 PM	\$ 50,000.00	\$ 100,000.00
	1:01 PM - 2:00 PM	\$ 50,000.00	\$ 150,000.00
	2:01 PM - 3:00 PM	\$ 100,000.00	\$ 250,000.00
	3:01 PM - 4:00 PM	\$ 100,000.00	\$ 350,000.00
	4:01 PM - 5:00 PM	\$ 100,000.00	\$ 450,000.00
	5:01 PM - 6:00 PM	\$ 100,000.00	\$ 550,000.00
	6:01 PM - 11:59 PM	\$ -	\$ 550,000.00
Tuesday immediately following start of Interstate Closure and EACH DAY thereafter	12:00 AM - 2:00 AM	\$ -	Previous SLDs +
	2:01 AM - 3:00 AM	\$ 50,000.00	\$ 50,000.00
	3:01 AM - 4:00 AM	\$ 50,000.00	\$ 100,000.00
	4:01 AM - 5:00 AM	\$ 50,000.00	\$ 150,000.00
	5:01 AM - 6:00 AM	\$ 100,000.00	\$ 250,000.00
	3:01 AM - 4:00 AM	\$ 100,000.00	\$ 350,000.00
	4:01 AM - 5:00 AM	\$ 100,000.00	\$ 450,000.00
	5:01 AM - 6:00 AM	\$ 100,000.00	\$ 550,000.00
	6:01 AM - 11:59 PM	\$ -	\$ 550,000.00

2. *I-95 southbound travel lane closure at Exit 52*

Supplemental liquidated damages will be assessed at the rate of \$12,500 per 15-minute increment, or any portion thereof, for a total of \$50,000 per hour, that the I-95 southbound roadway at Exit 52 is not reopened to two lanes of traffic on or before 7:00 AM on the Monday immediately following the beginning of the Interstate Closure. (Note: The I-95 southbound roadway shall be reopened to two lanes of traffic by no later than 7:00 on the Monday immediately following the beginning of the Interstate Closure Period regardless of whether the Interstate Closure remains in place at that time)

3. *Veranda Street Closure:*

Supplemental liquidated damages will be assessed if Veranda Street and the I-295 southbound on-ramp are not reopened to one lane of traffic in each direction by the specified time. Supplemental liquidated damages will be assessed at the rate of \$50,000 per Calendar Day, or any portion thereof.

The following supplemental liquidated damages shall apply to traffic control installations not directly related to the Interstate Closure and/or Veranda Street Closure and will not be applied in combination with the supplemental liquidated damages noted above.

4. *Single Lane Closures on I-295 near Veranda Street.*

Supplemental liquidated damages will be assessed if any lanes remain closed after the specified lane opening time at the rate of \$12,500 per 15-minute increment, or any portion thereof.

5. *Single Lane Closures Veranda Street, Olympia Street, Oregon Street and Wordsworth Street:*

Supplemental liquidated damages will be assessed if any lanes remain closed after the specified lane opening time at the rate of \$500.00 per 30-minutes increment, or any portion thereof.

6. *Short Term Traffic Stoppages:*

Supplemental liquidated damages will be assessed if traffic stoppages remain in place after the specified lane opening time at the rate of \$500.00 per 15-minute increment, or any portion thereof.

Assessment of supplemental liquidated damages will be in addition to liquidated damages specified in Section 107 of the Standard Specifications.

107.3.2 Night Work Add the following to this section:

Night work will be permitted at all times during construction, unless otherwise specified herein. Night work, except during the designated Interstate Closure Period, will only be permitted Sunday through Thursday on I-295. The Contractor shall not undertake Night Work on Friday and Saturday nights, or during the Holiday periods defined in Special Provision 107, Contract Time, unless otherwise allowed by this specification for I-295.

Night work will be allowed for the full duration of the Interstate Closure Period.

Special Provision
Section 107
Time

(Supplemental Liquidated Damages for Fabrication Time)

107.8.1 Fabrication Time The Department has budgeted for the following amounts of continuous full time fabrication/shop QA inspection for the following Work components:

<u>Element</u>	<u>Time</u>	<u>Supplemental LD</u>
Structural Plate Girders	90 Calendar Days	\$1,000 per Calendar Day
Thermal Spray Coating	40 Calendar Days	\$1,000 per Calendar Day
Precast Median Barrier	60 Calendar Days	\$1,000 per Calendar Day
Precast Approach Slab	36 Calendar Days	\$1,000 per Calendar Day
Precast Sleeper Slab	24 Calendar Days	\$1,000 per Calendar Day
Precast Foundations	14 Calendar Days	\$1,000 per Calendar Day

The Contractor is responsible for requiring their fabricators and suppliers to produce these products for the Work continuously until finished, including any needed actions to correct unacceptable workmanship or materials. If the Department determines that QA inspection beyond these times is required, then the corresponding Supplemental Liquidated Damages will be deducted as they occur from the amounts otherwise due to the Contractor. These allowed Fabrication Time begins on the first day of fabrication and runs consecutively until expiration.

If a fabricator or supplier works more than one shift per day and the Department determines that inspection is required for each shift, each shift will count as a calendar day and the LD rate will be the noted amount per shift per Calendar Day in lieu of per Calendar Day.

QA inspector presence is required but not limited to the following activities:

For metal fabrication work: welding, including tack welding, heat correcting, non-destructive examination, assembly verification, and hold points in the approved Thermal Spray Coating procedure and any other times as required in the Standard Specifications or Special Provisions.

For concrete work: batching and casting of concrete, breaking of test cylinders, , repairs, finishing fascia surfaces and any other times as required in the Standard Specifications or Special Provisions.

SPECIAL PROVISION
SECTION 107
TIME
(Sunday Work)

Subsection 107.3.3 of the Standard Specifications is amended as follows:

The Contractor shall be allowed to work on Sunday during the closure period during which the I-295 northbound and southbound roadways, Veranda Street, and the I-295 southbound on ramp are closed to traffic.

No other Sunday work will be permitted unless otherwise allowed in other Special Provisions in this contract.

SPECIAL PROVISIONS
SECTION 202
REMOVING STRUCTURES AND OBSTRUCTIONS
(Removing Pavement Surface)

The November 2014 Revision of the Standard Specifications, Section 202-Removing Structures and Obstructions, subsection 202.061-Removing Pavement Surface, has been removed and replaced in its entirety by the following:

202.061 Removing Pavement Surface The equipment for removing the bituminous surface shall be a power operated milling machine or grinder capable of removing bituminous concrete pavement to the required depth, transverse cross slope, and profile grade using an automated grade and slope control system. The controls shall automatically increase or decrease the pavement removal depth as required, and readily maintain desired cross slope, to compensate for surface irregularities in the existing pavement course. The equipment shall be capable of accurately establishing profile grades by referencing from a fixed reference such as a 30 foot minimum contact ski (floating beam), 24 foot non-contact ski (floating beam) with 3 or more sensors; or 3 non-contact sensors directly affixed at the fore, mid, and aft points of the milling machine. Systems designed to incorporate a contact sensor located at the mid-point of the milling machine in lieu of the non-contact sensor will be permitted. Grade control sensors shall all be located on the same side. A single sensor, contact or otherwise, shall not be permitted unless otherwise approved by the Department.

The rotary drum shall be a minimum of 7 feet in width and utilize carbide tip tools at a minimum triple wrap configuration. The difference in height from the top of any ridge to the bottom of the groove adjacent to that ridge shall not exceed $\frac{1}{4}$ inch. The forward speed of the milling machine shall be adjusted to produce a milled surface meeting the groove spacing, groove depth, and surface tolerance requirements of this specification. The tools on the revolving cutting drum must be continually maintained and shall be replaced as warranted to provide a uniform pavement texture. The Department may evaluate the texture of the milled surface for information purposes by performing the Sand Patch test according to ASTM E 965.

The Contractor shall locate and remove all objects in the pavement through the work area that would be detrimental to the milling or grinding machine. Any structures or obstructions left within the travel lane or shoulders shall have tapers installed according to Standard Detail 202(01). The finished milled surface will be inspected before being accepted, and any deviations in the profile exceeding $\frac{1}{2}$ inch under a 16 foot string line or straightedge placed parallel to the centerline will be corrected. Any deviations in the cross-slope that exceed $\frac{3}{8}$ inch under a 10 foot string line or straightedge placed transversely to centerline will be corrected. All corrections will be made with approved methods and materials. Any areas that require corrective measures will be subject to the same acceptance tolerances. Excess material that becomes bonded to the milled surface will be removed to the Resident's satisfaction before the area is accepted.

On roadways with adjoining lanes carrying traffic, the Contractor shall remove the pavement surface in each lane per the conditions in Table 1, unless otherwise noted by the Department in Special Provision, Section 105 – Limitations of Operations.

TABLE 1: MILLING CONDITIONS FOR ADJOINING LANES

Depth (At Centerline)	Milling Conditions
Vertical Longitudinal Joint	
2" and less	The Contractor may remove the pavement on a single travel lane width for each production day and will be required to mill the adjacent section of travel lane before the end of the following calendar day.
Greater than 2"	The Contractor shall remove the pavement over the full width of the traveled way section being paved that day.
12:1 Tapered Centerline Joint	
1 ½" to 2"	The Contractor may remove the pavement on a single travel lane width for each production day and will be required to mill the adjacent section of travel lane before weekend or holiday suspension. A maximum unmatched centerline joint length of 0.5 miles will be permitted over the weekend.
Greater than 2"	The Contractor shall remove the pavement on a single travel lane width for each production day and will be required to mill the adjacent section of travel lane before the end of the following calendar day.

The Contractor will be required to remove the pavement over the full width of the mainline traveled way, regardless of highway type, cut depth, or longitudinal joint type prior to Memorial Day, July 4th, Labor Day, suspensions exceeding three days, or other dates as specified by Special Provision, Section 105 – Limitations of Operations.

The Contractor will also be responsible for installing additional warning signage that clearly defines the centerline elevation differential hazard. Unless otherwise addressed in the contract, the Contractor shall install additional centerline delineation such as a double RPM application, or temporary painted line. The Traffic Control Plan shall be amended to include this option and the additional requirements. All signs and traffic control devices will conform to Section 719.01, and Section 652, and will be installed prior to the work, at a maximum spacing of 0.50 mile for the entire length of effected roadway section. If this option is utilized, all additional signing, labor, traffic control devices, or incidentals will not be paid for directly, will be considered incidental to the appropriate 652 items.

On roadways with immediately adjacent shoulders, the Contractor shall remove the pavement surface in each lane per the conditions in Table 2, unless otherwise noted by the Department in Special Provision, Section 105 – Limitations of Operations.

TABLE 2: MILLING CONDITIONS FOR THE EDGE OF TRAVELED WAY

Depth (At Edge of Traveled Way)	Conditions
2" and less	The Contractor may leave a vertical edge joint exposed for up to 21 days after milling is performed. The Contractor shall treat vertical edge joints exposed beyond 21 days per the criteria below.
Greater than 2"	The Contractor shall treat vertical edge joints exposed per the criteria below.

When required by Table 2, the Contractor shall treat vertical edge joints through one of the options below:

1. The vertical edge shall be tapered to a zero edge by means of milling a 12:1 transition from the edge of traveled way onto the shoulder before opening the lane to traffic. Tapers shall be removed to form a vertical edge prior to the placement of the new pavement course. No additional payment will be made for tapers, or taper removal.
2. An additional 2 feet of pavement shall be removed from the shoulder to eliminate the vertical edge at the edge of travelway before opening the lane to traffic. Unless otherwise authorized by the Department, no additional payment will be made for the additional milling.
3. A pavement layer shall be placed to reduce the vertical edge to 1 inch or less before opening the lane to traffic.

As a minimum, the use of temporary painted line, or RPMs placed along the edge of traveled way at 200 foot intervals is required for all elevation differentials. When pavement milling is extended into the shoulder (including milled tapers), appropriate channelization devices shall be placed 2 feet outside the edge of the vertical face at intervals not exceeding 600 feet, and RPMs shall be placed on the remaining pavement surface along the vertical edge at 200 foot intervals. Uneven pavement signs shall be placed at a maximum spacing of ½ mile when any pavement milling operations leaves an exposed uneven pavement surface.

Weepers shall be ground across the full width sections adjacent shoulders or remaining pavement surface matching the milled travel way or shoulder milled depth to minimize water ponding in any lanes carrying traffic. Weepers shall typically be 18 - 24" inches in width, installed along each lane, at a frequency of approximately one per half mile at locations as directed by the Resident or in areas that will provide drainage for the milled areas. Installation of weepers will not be paid for directly but will be considered incidental to the contracts pavement removal item. The replacement of mix in the weeper locations shall be performed concurrently within the pavement placement operation closure using the appropriate HMA item produced for the Contract or a MaineDOT approved 9.5mm HMA. There will be no separate payment for repaving the weeper locations as they are considered incidental to the square yard price of the contracts pavement removal item.

Any areas of concern, such as de-lamination or pot-holing shall be identified on a continuous basis as milling progresses. Proper corrective action will be determined by the Resident and paid for under the appropriate contract items, and if required, completed prior to opening lane to traffic. Any issues that arise up to 7 calendar days after being milled will be the responsibility of the MaineDOT unless otherwise noted in Special Provision Section 105 – Limitations Of Operations.

Basis of Payment

The square yard or hourly rental contract price will be full compensation for mobilizing to the site, de-mobilizing from the site, labor, supervision, cleaning of the milled surface, and all other incidentals required to complete the work. Hauling and stockpiling of the material will not be paid for directly, but will be considered incidental to the milling items.

Square Yard: Payment will be made at the contract unit price for the number of square yards removed.

Hourly: Payment will be made at the contract unit price for the number of hours of operation removing pavement surface as directed by the Resident. The equipment used for pavement removal shall be operated at the minimum speed of 50 fpm, unless the Resident directs otherwise for milled surface quality reasons, or traffic control limitations impact pavement removal operations, or site conditions make operations at the prescribed rate unreasonable. Trimming to create a vertical face along curb line, guardrail, or around structures will be considered incidental to the 202.202 items. Additional trimming beyond the incidental work described will be paid under the appropriate rental items as listed in the Contract.

Pay Item

Pay Unit

202.202 Removing Pavement Surface

S.Y.

202.20201 Removing Pavement Surface (Hourly)

Hour

SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(EPS Geofoam Lightweight Fill)

203.01 Description

The following sentence is added:

This work shall consist of furnishing all qualifications, shop drawings, material and equipment, disposal of material, providing approved field quality control personnel to oversee and certify installation, and placing expanded polystyrene (EPS) Geofoam Lightweight Fill, referred to in this Specification as Geofoam, complete, as specified herein, and shown on the reviewed shop drawings, or as directed by the Resident. Provide all labor, materials and equipment necessary to complete the work of this Section.

The following Subsection is added:

203.011 Reference Publications

Some or all of the publications referred to hereinafter form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only. The latest edition of the reference publication shall govern:

ASTM Designation	Standard Test Method for
C203	Breaking Load and Flexural Properties of Block-Type Thermal Insulation
C578	Rigid, Cellular Polystyrene Thermal Insulation
D732	Shear Strength of Plastics by Punch Tool
C272	Water Absorption of Core Materials for Structural Sandwich Constructions
D1621	Compressive Properties of Rigid Cellular Plastics
D1622	Apparent Density of Rigid Cellular Plastics
D1623	Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics
D6817	Standard Specification for Rigid Cellular Polystyrene Geofoam

MATERIALS

203.02 Materials

The Contractor shall provide Geofoam, mechanical fasteners, shop drawings for installation and fulltime on-site supervision of Geofoam installation. The Contractor shall

provide the Geofoam Supplier with a copy of this Specification. All Geofoam materials delivered to the site shall be in accordance with the requirements of this Section.

Geofoam product marking shall meet the minimum requirements of ASTM D6817.

The following Subsections are added:

203.021 Contractor and/or Geofoam Supplier Qualifications Submittal

At least thirty working days prior to first delivery of EPS to the site, the Contractor and/or Geofoam Supplier shall submit the following:

- List of at least three successful, similar projects using Geofoam in a load bearing or embankment application.
- Contact reference for each project with telephone number and addresses.
- Resume(s) of construction quality control personnel listing specific EPS experience in load bearing and/or embankment applications. The field quality control personnel shall have a minimum of two (2) years' experience in this work and shall have worked on at least one of the three successful EPS projects listed. Personnel to be assigned to the project must be identified by the Geofoam Supplier and approved by the Department. Alternate personnel may be used only after their qualifications are reviewed and approved by the Department
- Written documentation verifying that the Geofoam Supplier has a third-party certification program in force. If multiple Geofoam Suppliers are used, each Supplier shall have a program in force. If multiple Geofoam Suppliers are used, third-party certification must be acceptable for each and every Supplier; otherwise, it will be denied for each and every molder. The documentation shall identify the business entity providing the third-party certification and shall describe in detail the steps to be taken by the agency to verify the Geofoam Supplier(s) compliance with the specific requirements described herein.
- Detailed description of the manufacturing and construction quality control services to be provided for this project (See Table I at the end of this Special Provision).

A review of the Contractor's and Geofoam Supplier's qualifications will be completed by the Department within ten working days of receipt.

At least ten working days prior to the first delivery of Geofoam to the site, the Contractor shall provide certification, in the form of a letter prepared by the Geofoam Supplier, that the Geofoam will be, or has been, manufactured in accordance with these Specifications and that the specified minimum physical property requirements will be, or have been, met.

No Geofoam shall be shipped to the site until such time as all qualification related submittals have been reviewed and approved by the Department.

Upon completion of the installation, the Contractor shall provide a letter certifying that the Geofoam was manufactured and installed in accordance with the Specifications and approved shop drawings. The letter shall include copies of all QA certification testing completed for the project.

203.022 Contractor Shop Drawing and Geofoam Sample Submittal

At least twenty working days prior to first delivery of material to the site, the Contractor shall submit the following:

- Complete, accurate, full-size shop drawings to scale for both EPS fill structures (North and South Approach Embankments) in this Contract. In general, the submitted drawings shall include plans, elevations and cross-sections as needed to clearly show the configuration and limits of the Geofoam structures. Specifically, the drawings shall indicate (1) the proposed Geofoam, type, sizes, laying pattern as well as the orientation of blocks with each course and layout of all Geofoam inter-block connections, (2) the proposed layout and limits of Geofoam based on the plan, section and profile limits and the Geofoam details shown in the Contract Drawings and (3) layout drawings that include station/offset information as needed to determine plan limits of each layer of Geofoam in the field.
- A step by step procedure for and description of the anticipated installation and construction sequence of the Geofoam structures (North and South Approach Embankments) in this Contract. The procedure and description shall include the use of temporary shoring and temporary ballasting/stabilizing required to prevent movement during construction prior to placement of the roadway subbase and pavement.
- A minimum of three full-size Geofoam blocks for each geofoam type to be used on the project shall be shipped/delivered to a location specified by the Department. If multiple Geofoam Suppliers are used, there shall be three blocks from each Supplier. The blocks shall in all respects be the same as blocks to be used on the project, including required seasoning. The Department will weigh, measure, sample, and test a random number of blocks to evaluate the ability of the Geofoam Supplier(s) to produce Geofoam of quality as specified herein.

A review of the shop drawings or revised shop drawings will be completed by the Department within ten working days of receipt. If revisions are required, the Contractor and/or Geofoam Supplier shall submit the revised shop drawings for review. Geofoam shall not be shipped to the site prior to notification from the Department that the shop drawings have been reviewed and all outstanding submittal comments have been addressed.

203.023 Geofoam Lightweight Fill

Geofoam shall be material designation EPS22 and EPS39 per ASTM D6817, as indicated on the Contract Drawings, and conforming to this Specification, as supplied by:

Branch River Plastics, Inc.
15 Thurber Boulevard
Smithfield, Rhode Island 02917

Tel: 1-401-232-0270
Fax: 1-401-231-3434

Insulation Technology, Inc.
35 First Street,
P.O. Box 578
Bridgewater, Massachusetts 02324
Tel: 1-508-697-6926
Fax: 1-508-697-6934

Thermal Forms, Inc.
6173 South Bay Rd.,
P.O. Box 1981
Cicero, New York 13039
Tel: 1-315-699-8734
Fax: 1-315-699-4969

Poly Molding Corp.
96 4th Avenue
Haskell, NJ 07420
Tel.: 1-800-229-7161
Fax: 1-973-835-2438

or approved equal.

Geofoam shall be fabricated using virgin feedstock manufactured into blocks having no more than five percent regrind content. If regrind is to be used, its use shall be clearly stated by the Geofoam Supplier. The source of the regrind (block-molded versus shape-molded, in-plant versus post-consumer) shall also be stated clearly.

All Geofoam shall be adequately seasoned prior to shipment to the project site. Seasoning is defined as storage in an area suitable for the intended purpose as subsequently defined herein for a minimum of 72 hours at normal ambient room temperature after the Geofoam is released from the mold. Seasoning shall be done within a building or other structure that protects the Geofoam from moisture as well as ultraviolet (UV) radiation. The area in which Geofoam is stored for seasoning shall also be such that adequate space is allowed between blocks and such that positive air circulation and venting of the structure are provided so as to foster the outgassing of blowing agent and trapped condensate from within the blocks. The Department shall be allowed to inspect the manufacturing facility including the structure(s) to be used for seasoning upon request, during normal business days and hours, including prior to the start of the project. The Geofoam Supplier may request a shortened seasoning period if the Geofoam is seasoned within an appropriate heated storage space and the Geofoam Supplier demonstrates to the satisfaction of the Department that the alternative seasoning treatment produces Geofoam that equal or exceed the quality of Geofoam subjected to the normal 72-hour seasoning period.

Geofoam shall conform to EPS22 and EPS39 as specified by ASTM D 6817 and the Contract Drawings. Only these material designations shall be used in any correspondence or

other communication related to this project. Geofoam specified herein shall have the following minimum allowable physical properties:

Physical Property	ASTM Test Procedure	Accepted Value EPS 22	Accepted Value EPS 39
Density	D1622	1.35 pcf, minimum	2.40 pcf, minimum
Compressive Strength	D1621	7.3 psi, minimum, at 1% strain	15 psi, minimum, at 1% strain
Flexural Strength	C203	35 psi, minimum	60 psi, minimum
Water Absorption	C272	Less than 3 percent by volume	Less than 2 percent by volume

The Geofoam material properties are to be obtained by testing specimens prepared from samples taken from actual Geofoam blocks produced for the project, after the period of seasoning, as defined herein.

Geofoam blocks shall have a height of at least 2 ft, a width of at least 4 ft, and a length of at least 8 ft. Other Geofoam block sizes could be used as approved by the Department. All blocks shall be shop-trimmed as necessary so that all surfaces are smooth and flat. The dimensions of each block shall not deviate from the theoretical dimensions by more than 0.5 percent. The corner or edge formed by any two faces of a block shall be perpendicular, i.e., forms an angle of 90 degrees. The deviation of any face of the block from a theoretical perpendicular plane shall not exceed 0.12 in. over a distance of 20 in. Any one face of a block shall not deviate from planarity by more than 0.2 in. when measured using a straightedge with a length of 9.8 ft. Additional field and/or shop-trimming and cutting may be required as necessitated by the geometry of the Geofoam fill being constructed.

The Geofoam shall contain a flame-retardant additive and shall have UL Certification of Classification as to External Fire Exposure and Surface Burning Characteristics so as to comply with Oxygen Index requirements of ASTM C578. Geofoam should be considered combustible and shall not be exposed to open flame or any source of ignition. Geofoam shall be treated to prevent insect attack for below grade applications in accordance with the ICC ES EG239 – Evaluation Guidance for Termite-Resistant Foam Plastics and shall be protected from burrowing animals. The treatment shall be EPA registered agent for use with plastic foam. The Geofoam Supplier shall present proposed treatment methods to the Resident for review and approval prior to the first shipment of Geofoam to the site.

Connectors shall be galvanized 20 gage, minimum, steel multi-barbed connectors. Each connector shall be capable of penetrating the Geofoam up to 3/4 inch, minimum, and have a lateral holding strength of at least 60 lbs. when tested with ASTM D6817 (EPS), with a safety factor of two.

CONSTRUCTION REQUIREMENTS

203.04 General

The following paragraphs are added:

Prior to delivery of any Geofoam to the project site, a meeting shall be held between, at a minimum, the Department, Contractor, and Geofoam Supplier(s). The purpose of this meeting shall be to review Contractor and Geofoam Supplier(s) submittals, the results of the testing specified in Section 203.022 as well as the manufacturing and construction quality control and quality assurance requirements shown on the attached Table I, to ensure that all parties are familiar with the requirements of this specification. At the satisfactory conclusion of this meeting, the Contractor shall be allowed to begin on-site receipt, storage (if desired), and placement of Geofoam if the requirements of Section 203.02 have been satisfied.

The Contractor shall be directly responsible for all construction quality control including earthwork and all related activities other than manufacturing and shipment of the Geofoam. The Resident will be responsible for providing construction quality assurance of the Contractor's construction activities.

The following Subsections are added:

203.042 Sampling and Testing

Quality assurance testing and sampling, to monitor the conformance of the Geofoam with the Specification requirements, will be completed as directed by the Resident as the Geofoam is delivered to the project site. The Contractor shall cooperate with and assist the Resident, as necessary.

On-site visual inspection of each Geofoam block delivered to the project site shall be conducted to check for damage and to visually verify the labeled information on each block. Damage shall be assessed and corrected, if required, in accordance with Section 203.043.

The unit weight and geometry (dimensional tolerances) testing shall be conducted using full-sized blocks. At least one truckload of each type of Geofoam blocks will be checked, and additional blocks will be checked if initial measurements indicate lack of compliance. A truckload of Geofoam blocks shall be defined as either a full-length box-trailer or a flat-bed trailer of typical dimensions, i.e., approximately 40 ft or more in length, fully loaded with Geofoam blocks. The Contractor shall provide a digital scale on site with sufficient capacity and precision for weighing a full-size Geofoam block. The scale shall be recently calibrated, and certification of such calibration shall be provided to the Resident. The Contractor shall provide assistance to lift and attach blocks to the scale and reasonable means of access to the blocks for block size tolerance measurements. Blocks in conformance with contract requirement can be used to make required fills.

During construction, Geofoam blocks shall be sampled for laboratory testing. The laboratory tests shall check for compliance with the physical property requirements specified in Section 203.023. Testing shall be conducted by the Resident. A minimum of one full-size Geofoam block of each geofoam type shall be selected for sampling from the first truckload of each type of Geofoam delivered to the job site. Additional blocks shall be selected for sampling during the course of the project, at a rate of sampling not to exceed one sample for every 325 cubic yards of each type of Geofoam delivered or as accepted by the Resident. Portions of sampled blocks that are otherwise acceptable can be used as desired by the Contractor. The Resident shall make every reasonable effort to conduct the laboratory testing expeditiously. However, if unsatisfactory test results are obtained, the Contractor may be directed to remove potentially defective Geofoam blocks and replace them with blocks of acceptable quality per the direction of the Resident, at no additional cost to the Department.

The Resident has the right to random sample the manufacturing plant. If any block does not conform to the physical requirements or if it is damaged in any way, it may be rejected by the Resident.

As-built drawings as well as additional record keeping necessary to document the location of all Geofoam placed for the project shall be prepared. The Contractor shall cooperate with and assist the Resident as necessary.

203.043 Shipment, Storage, and Protection

The Contractor and Geofoam Supplier shall prevent damage to the Geofoam during all stages of manufacturing, shipment, storage, and construction. The Geofoam shall be handled in a manner so as to minimize physical damage to the blocks. No method of lifting or transporting the blocks that creates dents or holes in the block surfaces or losses of portions of the block shall be allowed. Prior to delivery of the Geofoam to the project site, the Contractor shall review and be thoroughly knowledgeable with the Geofoam Supplier's care and handling procedures and recommendations.

Each Geofoam block delivered to the site shall be labeled to indicate the name of the Geofoam Supplier, the dates the block was molded and shipped from the plant, the mass/weight of the entire block as measured after a satisfactory period of seasoning as specified herein, the dimensions of the block, and the actual dry density/unit weight. All EPS 39 Geofoam blocks shall be additionally labeled "EPS 39" on all six sides using permanent marker or paint such that these blocks are clearly identifiable by the Contractor and the Engineer from EPS 22 blocks during stockpiling, placement and inspection. Additional markings and/or symbols shall be applied as necessary by the Geofoam Supplier to indicate the location of placement of each block relative to the approved shop drawings. Ensure with EPS manufacturer that all marking paints or permanent markers used for above purposes are safe for use on EPS prior to marking any EPS

Geofoam blocks.

If the Geofoam blocks are to be stockpiled at the project site until placement, a secure storage area shall be designated for this purpose. The storage area shall be away from any heat source or construction activity that produces heat or flame. Personal tobacco smoking shall not be allowed in the storage area.

Geofoam in temporary on-site storage shall be secured with sandbags and/or other similar "soft" weights to prevent their being dislodged by wind. The Geofoam shall not be covered in any manner that might allow the buildup of heat beneath the cover. Any Geofoam fill to be exposed to sunlight for more than 30 days shall be covered with opaque material which will prevent ultraviolet light degradation.

Leveling Sand, HDPE Geomembrane and Embankment Fill over the side slopes of the Geofoam shall be placed starting at the bottom of the slope in such a manner as to prevent damage to the Geofoam. The Embankment Fill over the side slopes shall be compacted using approved manually-operated compaction equipment. Finished Geofoam on side slopes shall have a minimum of 2 feet of embankment fill cover.

Placement of the Geofoam blocks will require special procedures and careful selection of appropriate construction equipment to prevent damage to the Geofoam fill. The surfaces of the Geofoam blocks shall not be directly traversed by any vehicle or construction equipment during or after placement of the Geofoam. Geofoam must be protected from petroleum-based solvents such as gasoline and diesel fuel.

Damage to Geofoam shall be corrected as follows:

- Slight damage (less than 0.12 cubic ft) with no linear dimension greater than 1 ft may be left in place as-is.
- Moderate damage (less than 0.35 cubic feet) with no linear dimension greater than 3.3 ft shall be filled with leveling sand.
- Geofoam with excessive damage (i.e. exceeding the "moderate" category) shall be replaced with Geofoam which meet the damage criteria. Geofoam not meeting the damage criteria may be cut to eliminate the excessive damage and the remaining undamaged portion of the block may be used within the fill, provided the undamaged portion of the block meets all other requirements.

Any damage to the Geofoam resulting from the Contractor's vehicles, equipment or operations, or other Contractor activity shall be replaced by the Contractor at no additional cost.

203.044 Subgrade Preparation

Clear and grub site in accordance with Section 202, Clearing Right-of-Way, and Section 203, Excavation and Embankment. Bench into existing slopes as required to provide a level subgrade to support each layer of geofoam. Recompact subgrade to a minimum of 92 percent of maximum dry density as determined by AASHTO T180. Place, grade, and compact leveling sand as shown in the Contract Drawings and specified in Special Provision Section 203, Excavation and Embankment (Leveling Sand). Provide temporary construction dewatering during subgrade preparation, placement leveling sand, and geofoam installation and filling until adequate cover is in place to prevent flotation of geofoam blocks. Temporary construction dewatering shall be provided at no additional cost to the Authority.

203.045 Placement

Geofoam shall be placed to the lines and grades shown on the Contract Drawings, reviewed shop drawings, and as directed by the Resident. There shall be no standing water or accumulated snow or ice on the ground surface where Geofoam blocks are placed at the time of block placement. The surface of a layer of Geofoam to receive additional Geofoam shall be constructed with a variation in surface tolerance of no more than 1/2 inch in any 10-ft interval. Geofoam blocks shall not be placed above blocks in which ice has developed on the surface. All blocks shall accurately fit relative to adjacent blocks and structures. No gaps greater than 3/4 inch will be allowed on vertical joints. The finished surface of the Geofoam beneath pavement section shall be constructed to within the tolerances of 0 to -0.2 ft (below) of the indicated grade. The finished surface of the Geofoam on the side slopes that receive soil cover shall be constructed to within a tolerance of +0.3 to -0.3 ft of the indicated grade. The finished vertical surface of the Geofoam adjacent to existing structures, proposed abutments and proposed retaining walls (except for uppermost layer of Geofoam) shall be constructed to within a tolerance of 0 to +0.1 ft of the indicated surface. The finished vertical surface of the uppermost layer of Geofoam adjacent to existing structures, proposed abutments and proposed retaining walls shall be 0 ft.

Within a given layer of Geofoam, the longitudinal axes of blocks shall be parallel to each other. Blocks placed in a row in a particular layer shall be offset 2 ft relative to blocks placed in adjacent rows of the same layer as shown on the approved shop drawings. In order to avoid continuous joints, each subsequent layer of blocks shall be offset 2 ft relative to blocks placed in the previous layer. The longitudinal axes of blocks for layers above and/or below a given layer must be perpendicular to the longitudinal axes of blocks within that given layer. Geofoam blocks shall be cut using a saw or hot wire, where necessary.

Because of the low unit weight of Geofoam, the Contractor shall provide temporary ballasting and/or guying as necessary until all blocks are built into a homogeneous mass and the fill, and pavement section is in place. Improper ballasting may result in the Geofoam becoming buoyant during coastal flood events or periods of heavy rain. The Contractor shall replace Geofoam fill that becomes displaced due to buoyancy per the direction of the Resident. The Contractor shall direct surface water away from the Geofoam during Geofoam placement. With

the exception of ballasting and/or guying material, no construction material other than that shown on the contract drawings shall be placed or stockpiled on the Geofoam.

Install a minimum of three galvanized connector plates for each 4 ft by 8 ft section of Geofoam material or as shown on reviewed shop drawings or as directed by the Resident. Press firmly into the rigid foam until the connector is flush with the surface. Position the next foam block as specified and set firmly before placing subsequent blocks.

203.18 Method of measurement

The following sentence is added:

Geofoam furnished and placed in accordance with the Plans and Specifications shall be measured by the cubic yard in place and accepted.

203.19 Basis of Payment

The following paragraphs are added:

Geofoam will be paid for at the Contract unit price per cubic yard which shall be full compensation for furnishing all qualifications, on site supervision from Supplier and Contractor, field quality control, shop drawings, labor, materials, equipment and incidentals, and any required off-site disposal of Geofoam materials necessary to complete the work.

Payment will be made under:

Pay Item

Pay Unit

203.4339 Geofoam Lightweight Fill

Cubic Yard

Table I - Geofam Installation QA Plan

Item	Criteria	Method	Responsible Party
Excavate Prep and Subgrade	Level subgrade: general layer tolerance = 1/2" / 10 ft Compaction: 92% T180 (ASTM D1557)	survey testing	Contractor MaineDOT
Leveling Sand	Compaction: 92% T180 (ASTM D1557) 6 inch thickness (minimum) Level Tolerance: 1/4" / 10 ft Gradation	testing measurement survey testing	MaineDOT Contractor Contractor Contractor
Blocks	Full time supervision No equipment or vehicles permitted on blocks No petroleum based solvents or fuels allowed on blocks No smoking, heat or open flame allowed on blocks Only manually operated equipment allowed on blocks Ballast installed blocks Direct surface water away during periods of heavy rain EPS product marketing - ASTM EPS29 Blocks covered - no exposure to sunlight Blocks density: 1.8 pcf (EPS 22) and 2.4 pcf (EPS 39) <5% regrind content Block size: 8'L x 4'W x 2'H Block tolerance: 0.5% on all dimensions (8'±0.48", 4'±0.24", 2'±0.12") Block level tolerance: 0.2" / 10 ft Block squareness tolerance: 0.12" over 20"	visual visual visual visual visual visual visual visual weight paperwork measurement measurement	Contractor/MaineDOT Contractor Contractor Contractor Contractor Contractor MaineDOT Contractor MaineDOT/Contractor MaineDOT MaineDOT MaineDOT MaineDOT
Block Placement	Full time supervision Minimum of 3 connector plates/block Damage assessment Trim tolerance: 0.5% of dimension General layer tolerance: 1/2" / 10 ft Gap tolerance: 3/4" maximum Top layer tolerance: 0 to -0.2 ft of grade (road) Side slope tolerance: +0.3 to -0.3 ft of grade Vertical face tolerance at panel walls: 0 ft for uppermost layer, 0 to 0.1 ft for subsequent layers Layer offset = 2 ft Subsequent layers at 90 degree angle	visual visual visual measurement measurement measurement measurement measurement visual visual	Contractor Contractor MaineDOT Contractor/MaineDOT Contractor/MaineDOT Contractor/MaineDOT Contractor/MaineDOT Contractor/MaineDOT Contractor Contractor
Laboratory Testing	Preliminary testing prior to construction: three blocks of each Geofam type Block sampling rate during construction (min.) = 1 block / 325 cy of geofam	measurement measurement	Contractor/MaineDOT MaineDOT
Liner	40 mil thickness 1 ft minimum wrap under geofam mass Seams down slope Minimum overlap: 4 in for fusion weld, 3 in for extrusion weld	visual measurement visual measurement	Contractor Contractor Contractor Contractor
Leveling Sand	5% slope on geofam side steps (see Geofam detail sheet in CD's)	measurement	Contractor
EPS Certification	Certification Letter & Test and Inspection Reports from Fabrication Plant		EPS Supplier
Quantities	Geofam in place	measurement	Contractor/MaineDOT

SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(Leveling Sand)

203.01 Description

The following sentence is added:

This work shall include furnishing, placing, grading and compacting leveling sand beneath and above the expanded polystyrene fill (EPS) as shown on the Contract Drawings, or as directed by the Resident.

MATERIALS

203.02 Materials

The following sentence is added:

Leveling sand shall meet the requirements of Subsection 703.05, Aggregate for Sand Leveling.

CONSTRUCTION REQUIREMENTS

203.04 General

The following paragraphs are added:

A uniform layer of leveling sand shall be placed over the prepared surface and graded to a uniform slope as shown on the Contract Drawings. Compaction shall be achieved with an approved manually-operated power compactor, or as directed by the Resident. Compact Leveling Sand to a minimum of 92 percent of maximum dry density as determined by AASHTO T180, or as approved by the Resident.

203.18 Method of measurement

The following sentence is added:

Leveling Sand shall be measured by the cubic yard complete and accepted in place.

203.19 Basis of Payment

The following paragraph is added:

Leveling Sand will be paid for at the Contract unit price per cubic yard which shall be full

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compensation for all labor, materials, equipment and incidentals necessary to complete the work as described herein.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
203.4539	Leveling Sand	Cubic Yard

SPECIAL PROVISION SECTION 401
HOT MIX ASPHALT
(Special Seasonal Limitations for Bridge Paving)

The following section of Section 400 has been revised as follows:

401.06 Weather and Seasonal Limitations The following language has been added to Section 401.06:

The Contractor may place Hot Mix Asphalt Pavement that is intended to serve as a traveled way wearing course in preparation of any project suspension between the Saturday following October 15th and November 15th 2020 at 6am, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 35°F or higher, and the HMA is produced with one of the WMA technologies listed below and approved for use by the Department.

- a. The use of organic WMA additives
- b. The use of powdered or pelletized WMA additives
- c. The use of manufactured liquid chemical WMA additives

The WMA additives shall be mixed with the aggregate or asphalt in the HMA plant at a rate recommended by the manufacturer. The additives shall be introduced into the hot mix plant mixing chamber by mechanical means that can be controlled and tied directly to the hot mix asphalt plants rate of production. The WMA additives may be mixed with the asphalt at the asphalt terminal a rate recommended by the manufacturer in a manner to assure complete dispersion throughout the load. Should the WMA additives be added at the terminal, additive type, and total additive amounts shall be listed on the loading invoice.

The use of a controlled asphalt foaming system, utilizing an injection system to introduce water to the asphalt stream and “expand” the asphalt prior to mixing with the aggregate in asphalt mixture plant, will not be permitted to produce mix past the normal deadline. The WMA must be produced and placed at the normal production temperatures specified in section 401.04.

The Contractor may place Hot Mix Asphalt Pavement that is intended to serve as permanent base pavement between the Saturday following October 15th and October 31th, at 6am, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 40°F or higher, and the HMA is produced with one of the WMA technologies approved for use by the Department, and the membrane has been heated with an approved infrared heat technology and rolled to ensure sealing and bond to the concrete deck.

If the contractor elects to utilize a hot applied mastic meeting the material and installation criteria outlined in Special Provision 424 – Crack Repair with Hot pour Mastic between the Saturday following October 15th and October 31th at 6am, infrared heaters will not be required, and the contractor may pave permanent base down to 40°F if WMA additives are used.

The Contractor may place Hot Mix Asphalt Pavement that is intended to serve as permanent base pavement between the Saturday following October 31th and November 15th at 6am, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 35°F or higher, and the HMA is produced with one of the WMA technologies approved for use by the Department. The areas to be paved must be heated to a minimum of 60 degrees surface temperature by use of heated warming systems (ground heaters), or by use of an approved infrared heat technology. If a sheet membrane system is used it shall be heated with an approved infrared heat technology and rolled / installed in a manner to ensure sealing and bond to the concrete deck prior to paving. Infrared heat shall be used as needed to aid in the placement and compaction of the base pavements.

If the contractor elects to utilize a hot applied mastic meeting the material and installation criteria outlined in Special Provision 424 – Crack Repair with Hot pour Mastic, between the Saturday following October 31th and November 15th at 6am, infrared heaters will not be required but the areas to be paved must be heated to a minimum of 60 degrees surface temperature by use of heated warming systems (ground heaters). Infrared heat shall be used as needed to aid in the placement and compaction of the base pavements.

If sheet membrane systems are used, the deck and membrane must be heated to a surface temperature of 290°F, or until the membrane has softened, and warming maintained up until rolling and paving operations commence. Payment for the infrared heater use shall be by means of force account, or receipted subcontractor quote, with any applicable mark-up allowed.

The Department may authorize the Contractor in order to place base pavement in adverse conditions to be able reopen I-295 to traffic as defined in the project specifications. Any pavement placed outside of seasonal limitations (temperature and dates) and or in adverse weather conditions (rain, sleet, snow, etc.) as determined by the Department, will not be subject to permanent pavement acceptance criteria. Additional cores and samples may be taken by the Department for additional testing to determine acceptance of the material as permanent or temporary. If material is determined to be temporary, removal shall be made under the appropriate contract items.

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

Desc. Of Course	Grad Design.	Item Number	Total Thick	No. Of Layers	Comp. Notes
<u>3" – I-295 Over Veranda St. Bridge Deck</u>					
Wearing	12.5 mm	403.2081	1½"	1	2,6,7,12,28,30
Base	12.5 mm	403.2131	1½"	1	2,6,7,12,30
<u>9" – I-295 Travel Way & Shoulders</u>					
Wearing	12.5 mm	403.2081	1½"	1	6,7,12,27,28,30
Base	12.5 mm	403.2131	1½"	1	6,7,12,27,30
Base	12.5 mm	403.213	3"	1/more	6,7,27
Base	19.0 mm	403.207	3"	1	6,7,13,27
<u>3" – I-295 Guardrail Flareouts & Widening</u>					
Wearing	12.5 mm	403.2081	1½"	1	5,7,30
Base	12.5 mm	403.2131	1½"	1	5,7,30
<u>6" – I-295 Travel Way & Shoulders – Mill & Overlay</u>					
Wearing	12.5 mm	403.2081	1½"	1	6,7,12,28,30
Base	12.5 mm	403.2131	1½"	1	6,7,12,30
Base	12.5 mm	403.213	3"	1/more	6,7
<u>6" – I-295 Ramps Travel Way</u>					
Wearing	12.5 mm	403.2081	1½"	1	5,7,28,30
Base	12.5 mm	403.2131	2½"	1	5,7,30
Base	12.5 mm	403.213	2"	1	5,7
<u>4" – I-295 Ramps Shoulders</u>					
Wearing	12.5 mm	403.2081	1½"	1	5,7,30
Base	12.5 mm	403.2131	2½"	1	5,7,30
<u>6" – U.S. Route 1 (Veranda St.) Travel Way, Shoulders & Parking Areas</u>					
Wearing	12.5 mm	403.2081	1½"	1	4,7,30
Base	12.5 mm	403.2131	1½"	1	4,7,30
Base	12.5 mm	403.213	3"	1/more	4,7
<u>3" – U.S. Route 1 (Veranda St.) Travel Way & Shoulders – Mill & Overlay</u>					
Wearing	12.5 mm	403.2081	1½"	1	4,7,30
Base	12.5 mm	403.2131	1½"	1	4,7,30
<u>6" – Wordsworth, Olympia & Oregon St. Travel Way & Shoulders</u>					
Wearing	12.5 mm	403.2081	1½"	1	4,7,30
Base	12.5 mm	403.2131	1½"	1	4,7,30
Base	12.5 mm	403.213	3"	1/more	4,7
<u>3" – Wordsworth, Olympia & Oregon St. Travel Way & Shoulders Mill & Overlay</u>					
Wearing	12.5 mm	403.2081	1½"	1	4,7,30
Base	12.5 mm	403.2131	1½"	1	4,7,30

<u>6" – Curb Installation Areas</u>					
Wearing	12.5 mm	403.2081	1½"	1	4,7,30
Base	12.5 mm	403.213	4½"	2/more	2,4,16,18,21
<u>Variable – Shim – As Directed</u>					
Shim	9.5 mm	403.211	varies	1/more	2,4,10,11,14
<u>3" – Commercial Entrances</u>					
Wearing	9.5 mm	403.209	3"	2/more	2,4,10,11,14,16
<u>2" – Sidewalks, and Incidentals</u>					
Wearing	9.5 mm	403.209	2"	2/more	2,4,10,11,14

COMPLEMENTARY NOTES

2. The incentive/disincentive provisions for density shall not apply. Rollers shall meet the requirements of this special provision. The use of an oscillating steel roller shall be required to compact all mixtures pavements placed on bridge decks.
4. The design traffic level for mix placed shall be 0 to <3 million ESALS. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **65 gyrations**.
5. The aggregate qualities shall meet the design traffic level of 3 to <10 million ESALS for mix placed under this contract. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **65 gyrations**.
6. The design traffic level for mix placed shall be 10 to <30 million ESALS. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **65 gyrations**.
7. Section 106.6 Acceptance, (1) Method A.
10. Section 106.6 Acceptance, (2) Method D.
11. The combined aggregate gradation required for this item shall be classified as a 9.5mm "**fine graded**" mixture, (using the Primary Control Sieve control point) as defined in 703.09.
12. The combined aggregate gradation required for this item shall be classified as a 12.5mm "**fine graded**" mixture, (using the Primary Control Sieve control point) as defined in 703.09.
13. A mixture meeting the gradation of 12.5 mm hot mix asphalt may be used at the option of the contractor. Should this option be utilized by the Contractor, the testing method for the Hot Mix Asphalt shall be Method D.
14. The combined aggregate gradation required for this item shall be classified as a 9.5mm Thin Lift Mixture (TLM) mixture, using the Aggregate Gradation Control Points as defined in 703.09.
16. In areas inaccessible to a **10 ton** roller, compaction of the new Hot Mix Asphalt Pavement will be obtained using a minimal roller train consisting of a **3-5 ton** vibratory roller. Areas less than 2 feet wide shall be compacted with a minimum of a **150 pound** plate compactor. An approved release agent is required to ensure the mixture does not adhere to hand tools, rollers, pavers, and truck bodies. The use of petroleum based fuel oils, or asphalt stripping solvents will not be permitted.
18. The Department will accept or reject any HMA based on a visual basis, either prior to its use, during placement, or in its final disposition.
21. At the discretion of the Contractor, the use of concrete fill will be allowed in lieu of pavement. When utilized, at least 3" of HMA shall be placed on top of concrete fill for cover.
27. See Special Provision 401 - Seasonal Limitations and Adverse Paving Conditions for project

Specifics

28. The mixture shall meet the minimum requirements of Special Provision 401 – HMA Hamburg Wheel Tracker Specification.
30. The required PGAB shall be a storage-stable, homogeneous, polymer modified asphalt binder that meets **PG 64E-28** grading requirements in AASHTO M 332. All polymer modified asphalt grades utilized on the Project shall be treated with an approved liquid anti-strip. PG binders shall be treated either at the asphalt source terminal with the required dose rate on the delivery documentation, or at the hot mix asphalt plant utilizing a system integrated with the plants controls that will introduce a minimum 0.50 percent anti-strip by weight of asphalt binder used unless a rate is otherwise recommended by the anti-strip manufacturer. The PGAB and anti-strip blend shall meet the **PG 64E-28** requirements. The Contractor shall provide supporting test data showing the PGAB and anti-strip blend meet the required criteria.

Tack Coat

A tack coat of emulsified asphalt, RS-1, RS-1h, CRS-1 or CRS-1h, Item 409.15 shall be applied to any existing pavement at a rate of approximately 0.030 gal/yd², and on milled pavement approximately 0.05 gal/yd² prior to placing a new course. A fog coat of emulsified asphalt shall be applied between shim /base courses and surface course as well as to any bridge membrane prior to the placement of HMA layers at a rate not to exceed 0.030 gal/yd². Tack used will be paid for at the contract unit price for Item 409.15 Bituminous Tack Coat.

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

Desc. Of Course	Grad Design.	Item Number	Total Thick	No. Of Layers	Comp. Notes
<u>3" min. – C.N.R.R. Bridge Deck</u>					
Wearing	12.5 mm	403.2081	1½"	1	2,6,7,12,16,28,30
Base	12.5 mm	403.2131	Varies	1	2,6,10,12,16,30,33
<u>9" – I-295 Travel Way & Shoulders</u>					
Wearing	12.5 mm	403.2081	1½"	1	6,7,12,16,28,30
Base	12.5 mm	403.2131	1½"	1	6,10,12,16,30,33
Base	12.5 mm	403.213	3"	1/more	6,10,16,33
Base	19.0 mm	403.207	3"	1	6,10,16,13,33
<u>3" – I-295 Guardrail Flareouts & Widening</u>					
Wearing	12.5 mm	403.2081	1½"	1	5,7,16,30
Base	12.5 mm	403.2131	1½"	1	5,10,16,30,33
<u>6" – I-295 Travel Way & Shoulders – Mill & Overlay</u>					
Wearing	12.5 mm	403.2081	1½"	1	6,7,12,16,28,30
Base	12.5 mm	403.2131	1½"	1	6,10,12,16,30,33
Base	12.5 mm	403.213	3"	1/more	6,10,16,33
<u>Variable – Shim – As Directed</u>					
Shim	9.5 mm	403.211	varies	1/more	2,5,10,11,14

COMPLEMENTARY NOTES

2. The incentive/disincentive provisions for density shall not apply. Rollers shall meet the requirements of this special provision. The use of an oscillating steel roller shall be required to compact all mixtures pavements placed on bridge decks.
5. The aggregate qualities shall meet the design traffic level of 3 to <10 million ESALS for mix placed under this contract. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **65 gyrations**.
6. The design traffic level for mix placed shall be 10 to <30 million ESALS. The design, verification, Quality Control, and Acceptance tests for this mix will be performed at **65 gyrations**.
7. Section 106.6 Acceptance, (1) Method A.
10. Section 106.6 Acceptance, (2) Method D.
11. The combined aggregate gradation required for this item shall be classified as a 9.5mm "**fine graded**" mixture, (using the Primary Control Sieve control point) as defined in 703.09.
12. The combined aggregate gradation required for this item shall be classified as a 12.5mm "**fine graded**" mixture, (using the Primary Control Sieve control point) as defined in 703.09.
13. A mixture meeting the gradation of 12.5 mm hot mix asphalt may be used at the option of the contractor. Should this option be utilized by the Contractor, the testing method for the Hot Mix Asphalt shall be Method D.
14. The combined aggregate gradation required for this item shall be classified as a 9.5mm Thin Lift Mixture (TLM) mixture, using the Aggregate Gradation Control Points as defined in

703.09.

16. In areas inaccessible to a **10 ton** roller, compaction of the new Hot Mix Asphalt Pavement will be obtained using a minimal roller train consisting of a **3-5 ton** vibratory roller. Areas less than 2 feet wide shall be compacted with a minimum of a **150 pound** plate compactor. An approved release agent is required to ensure the mixture does not adhere to hand tools, rollers, pavers, and truck bodies. The use of petroleum based fuel oils, or asphalt stripping solvents will not be permitted.
28. The mixture shall meet the minimum requirements of Special Provision 401 – HMA Hamburg Wheel Tracker Specification.
30. The required PGAB shall be a storage-stable, homogeneous, polymer modified asphalt binder that meets **PG 64E-28** grading requirements in AASHTO M 332. All polymer modified asphalt grades utilized on the Project shall be treated with an approved liquid anti-strip. PG binders shall be treated either at the asphalt source terminal with the required dose rate on the delivery documentation, or at the hot mix asphalt plant utilizing a system integrated with the plants controls that will introduce a minimum 0.50 percent anti-strip by weight of asphalt binder used unless a rate is otherwise recommended by the anti-strip manufacturer. The PGAB and anti-strip blend shall meet the **PG 64E-28** requirements. The Contractor shall provide supporting test data showing the PGAB and anti-strip blend meet the required criteria.
33. Section 106.6 Acceptance, (2) Method D. **One sample** and **two cores** will be taken per **250 ton**, per **pay item**, per **day** and shall be tested in accordance with section 401.204 Method D.

Tack Coat

A tack coat of emulsified asphalt, RS-1, RS-1h, CRS-1 or CRS-1h, Item 409.15 shall be applied to any existing pavement at a rate of approximately 0.030 gal/yd², and on milled pavement approximately 0.05 gal/yd² prior to placing a new course. A fog coat of emulsified asphalt shall be applied between shim /base courses and surface course as well as to any bridge membrane prior to the placement of HMA layers at a rate not to exceed 0.030 gal/yd². Tack used will be paid for at the contract unit price for Item 409.15 Bituminous Tack Coat.

SPECIAL PROVISION
SECTION 403
HOT MIX ASPHALT PAVEMENT
(Profile Grade Pavement Platforms)

403.01 Description

The following paragraphs are added:

Following the completion of field survey, joint repairs, and concrete repairs (where required), the Contractor shall install a minimum 20 foot-long pavement platform centered on, and matching into, the joint modification. The pavement platform shall be constructed to the line and grade developed and approved by the Contractor as part of the field survey effort described herein. At the limit of each platform the pavement shall transition back to the existing roadway pavement as specified on the plans. The purpose of this work is to provide improved joint rideability until a future pavement preservation project is completed.

Prior to undertaking any work on any bridge joint the Contractor shall establish a bench mark on the bridge structure adjacent to joint being repaired. The benchmark shall be readily accessible and in a location that will not be damaged or otherwise disturbed as part of the work included in this contract.

The Contractor shall survey the existing joint to be modified as well as the approach and departure pavement elevations. At a minimum, the survey shall include the top of existing joint steel, top of existing header concrete at the header concrete limits, and the existing pavement and concrete wearing surface elevations at 5 foot intervals for 50 feet on both the approach and departure sides of the joint. At each location survey points shall be collected at the following locations on the roadway cross section: 6 inches off the right shoulder curb, halfway between the right shoulder curb and the solid white lane line (SWLL) (if the width exceeds 20 feet), the SWLL, at all broken white lane lines (BWLLs), at the solid yellow lane line (SYLL), and 6 inches off the left shoulder curb.

The benchmark location and elevation, top of deck elevations, and top of pavement survey elevations shall be tabulated and provided to the Resident. The Contractor shall use this information to confirm the deck profile and cross slope this information will be used to establish the proposed mastic joint elevations, the surface elevations of the profile grade pavement platforms, the lengths of the pavement transitions, and proposed milling depths.

403.03 Construction

The following paragraph is added:

Prior to installing the pavement platforms and transitions, the Contractor shall variable depth mill the area to be paved. The surface of the milled area shall be at least one inch lower than the proposed finish grade and provide a butt joint at the limits of the pavement platform transitions.

403.04 Method of Measurement

The following paragraphs are added:

The establishment of bench marks and survey work will not be measured separately but will be incidental to the related contract items.

Pavement milling completed as described above will be paid under Item 202.202 Removing Pavement Surface – Square Yard.

SPECIAL PROVISION
SECTION 461
LIGHT CAPITAL PAVEMENT
(Temporary Pavement)

Description:

This work shall consist of furnishing all labor, materials and equipment, for the manufacturing, installation and removal of all Temporary Pavement in accordance with these specifications, Special Provision 403 Hot Mix Asphalt, and the Plans. Temporary pavement shall meet all mix design requirements of a 12.5 mm surface mix for the top 1½ inches, and a 12.5 mm base mix for the remaining 1½ inches.

Method of Measurement:

This work will be measured for payment by the Ton, complete in place and accepted.

Basis of Payment:

The work shall be paid for at the contract Ton price for the manufacturing, installation and removal of all Temporary Pavement.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
461.131 Temporary Pavement	Ton

SPECIAL PROVISION
SECTION 501
FOUNDATION PILES
(Micropiles)

Specification Section 501 - Foundation Piles is amended by the addition of the following:

501.01 Description

This work shall consist of furnishing and constructing a micropile foundation as shown in the Plans and as specified herein. The Micropile Contractor is responsible for furnishing all materials, products, accessories, tools, equipment, services, transportation, labor and supervision, and manufacturing techniques required for installation of micropiles for this project as shown on the Plans, approved submittals and specified herein. Accessibility and overhead clearance varies throughout the site, and it is the responsibility of the Micropile Contractor to select equipment and construction methods accordingly.

The Micropile Contractor shall coordinate the work so the micropiles are safely constructed adjacent to existing structures. The Micropile Contractor shall perform the micropile construction and related excavation in accordance with the Plans and approved submittals.

The Micropile Contractor shall determine the micropile installation means and methods, confirm the estimated grout-to-bedrock bond value by load testing, and ensure that their operations prevent damage to adjacent structures including but not limited to the existing bridge pier foundations and battered H-piles. The minimum micropile and casing diameters are shown on the Plans. The micropile load capacities shall be verified by verification and proof load testing and must meet the load test acceptance criteria specified herein.

The Micropile Contractor shall install micropiles so that ground loss or densification and any resulting settlement or vibration does not damage existing structures or facilities to remain. The Micropile Contractor is responsible for advancing through any boulders or cobbles that may interfere with the installation of micropiles. The Micropile Contractor shall practice extreme caution in drilling adjacent to existing bridge foundation battered H-piles. If a drilling obstruction is encountered which could potentially be an existing steel H-pile, cease drilling immediately and contact the Resident. The Resident will determine if it is necessary to abandon the micropile and offset the drilling location.

The Micropile Contractor shall monitor all aspects of micropile construction and load testing. The Micropile Contractor shall perform load testing as required. The Micropile Contractor will provide access so that the Resident and/or their representative can monitor all aspects of micropile construction. The Micropile Contractor shall not install or load test micropiles unless the Department is present at the site to monitor the work.

501.011 Definitions

Definitions that apply within this Special Provision are:

Alignment Load (AL) A minimum initial load (no greater than 4 percent of the Factored Design Load) applied to micropile during testing to keep the testing equipment correctly positioned.

Bond Breaker A device, sleeve or special treatment incorporated into a length of micropile that will prevent load transfer to the soil over that length. A bond breaker also provides full lateral support of the micropile over the length of the bond breaker. Grout placed in contact with the soil using gravity pressure only will not be considered to constitute a bond breaker. A bond breaker shall be included above the top of the bond zone to isolate the soil adjacent to the sacrificial micropiles installed for verification testing (test piles).

Bond Zone The gravity grouted, pressure grouted, and/or post grouted length of a micropile that is bonded to the ground and transfers the applied loads to the surrounding bedrock.

Centralizer A device to support and position the reinforcing steel in the drill hole and/or casing so that a minimum grout cover is provided.

Coupler The means by which load capacity can be transmitted from one partial length of reinforcement to another.

Free (Unbonded or Cased) Length The designed length of the micropile that is not bonded to the surrounding ground with grout.

Factored Design Load (FDL) The maximum factored compressive or tension axial load for a micropile as indicated on the Plans.

H-Pile Obstruction Existing battered and vertical steel H-Piles are present throughout the project site and are actively supporting the existing I-295 bridge over Veranda Street throughout construction. These existing H-Piles must be protected during construction. If micropile installation is obstructed by anything which may be an existing H-Pile, drilling must be promptly stopped, and the Micropile Contractor must notify the Resident immediately. The Resident will determine whether materials encountered during micropile installation are to be classified as an H-Pile obstruction.

Micropile A small diameter, bonded, cast-in-place friction pile formed by removing material using non-vibratory and non-displacement methods to create a cased open, cylindrical hole in the ground, which is subsequently filled with grout and steel reinforcement.

Mill Secondary Mill rejected American Petroleum Institute (API) casing, a.k.a. “Mill Rejects,” “Structural Grade,” “Limited Service,” or “Minimum Test Pipe”.

Non-Production Micropile Sacrificial micropiles that are not incorporated into the substructure. For example, test micropiles which are abandoned after testing has been completed.

Overburden Material, natural or placed, that may require cased drilling methods to provide an open borehole to underlying strata.

Permanent Steel Casing A steel pipe of flush joint type installed in the upper portion of a micropile to increase the micropile's moment capacity and lateral capacity to resist horizontal loads, and to stabilize the drill hole and support adjacent soils.

Positive circulation or flush A method of progressing and cleaning out a hole for a micropile wherein drilling fluid is injected into the hole and returns upward along the outside of the drill casing.

Post-grouting The injection of additional grout into the bond zone of a micropile after the primary grout has set. Also known as regrouting or secondary grouting.

Pressure grouting A method used to develop pile capacity wherein pressure is applied continuously to the top of the fluid grout column through the drill head as the casing is removed from the bond zone.

Primary Grout Portland-cement-based grout injected into the micropile hole prior to or after the installation of the reinforcement to achieve the load transfer from the structure to be supported to the surrounding ground within the micropile bond zone.

Production micropile A micropile which will be incorporated into the structure's foundation.

Recirculation A method of handling drilling fluid where the fluid coming back out of the hole is captured in a pan and reused.

Reinforcing Steel A bar placed through the full length of the pile, in the center of the pile to provide load transfer into the bond zone.

Reverse circulation A method of cleaning the inside of the drill casing. Drilling fluid is circulated down through the drill rods and returns upwards through the inside of the drill casing to flush the drill casing clean.

Tremie grouting A method used to place grout in a drill hole. A grout tube is placed to the bottom of the drill hole. While keeping the grout tube opening submerged in the grout,

grout is pumped into the hole, causing the drilling fluid to be displaced upward.

501.012 Micropile Contractor's Experience Requirements and Submittal

Four (4) weeks prior to the start of installation of the Micropiles, the Contractor performing the work described in this Special Provision shall submit:

1. Proof of successfully constructed and load tested Micropiles using non-displacement methods at three (3) projects in the last 5 years under similar site conditions to those indicated in the Contract Documents.
2. A list identifying the on-site supervisors, drill rig operators, and load testers assigned to the project. On-site supervisors shall have supervised the successful installation of Micropiles on at least three (3) projects in the last 5 years under similar site conditions to those indicated in the Contract Documents. Drill rig operators shall have at least one (1) year experience in construction of Micropile foundations. The load test engineer responsible for design and execution of all micropile Proof and Verification load tests shall have designed and administered load tests on micropiles of similar size and capacity on a minimum of three (3) projects in the last five (5) years.

The Resident shall approve or reject the Micropile Contractor's qualifications and staff within fourteen (14) Working Days after receipt of the submission.

501.013 Submittals

The Micropile Contractor will not be allowed to begin work until all related submittal requirements are satisfied and found acceptable to the Resident. At least four (4) weeks prior to the start of installation of the micropiles, the Micropile Contractor shall prepare and submit the information outlined below. All submittals will be reviewed by the Resident in accordance with Standard Specification Section 105.7, Working Drawings.

The Micropile Contractor shall submit a Micropile Installation Plan, which shall include:

1. List and description of proposed equipment and materials to be used for micropile installation, including drilling equipment, cleaning method, centralizers, reinforcing steel, bond breakers, primary grouting, post-grouting (if needed), tensioning, load testing and load transfer. Include model, size, type, manufacturer's information, lifting capacities, and vertical and horizontal clearance compared to clearance available, for each piece of equipment.
2. Details of proposed procedures for micropile installation including, but not limited to, anticipated means/methods for: advancing and cleaning out the casing; sealing casing into rock; checking cleanliness of drill holes; installation of reinforcing; primary grouting and post-grouting. Identify the consecutive steps and the approximate time required for each step, labor and equipment usage schedule, any interference to any existing

structures, facilities, or utilities as a result of the micropile installation, and the methods to be used to control and verify micropile position and vertical or battered alignment.

3. Procedures and anticipated means/methods and equipment/tooling for advancing through boulders, cobbles, and obstructions.
4. Procedures for containment of drilling fluid and spoils, and disposal of spoils.
5. Shop drawings, including the micropile components, all structural steel, micropile top attachment and bond zone details. Provide information on the length of the permanent steel casing sections and reinforcement sections to be used, as dictated by the length of the drill mast and by the available overhead clearance, and the resulting location of joints. Shop drawings shall provide details and dimensions of all micropile components, including, but not limited to, nominal diameter, length, size and length of permanent casing, reinforcement, splicing, centering devices, post-grout tube, grouting pressure, grout compressive strength, micropile to footing connection details, and shall include a plan showing micropile designations and working and staging areas.
6. Grout mix design and documentation from an independent testing laboratory. This item shall include the proportions of the batch, the manufacturer of the components, the specific gravity, and grout compressive strength test results completed within the last year.
7. If proposed, details of post-grouting materials/mix design, equipment and procedures, including the method, sequence of operations and equipment required.
8. Layout drawings showing the proposed sequence of micropile installation and proposed micropile verification load test locations. Coordinate this sequence with the proposed phasing and scheduling.
9. Estimated sequencing and duration of the work, including mobilization, micropile installation, grouting, and demobilization.

For API steel pipe used as permanent steel casing, the Micropile Contractor shall submit a minimum of two representative coupon tests or mill certifications (if available) on each truckload delivered to the project. Certified mill test reports for the reinforcing steel shall be submitted for record purposes as the materials are delivered. The ultimate strength, yield strength, elongation, and material properties composition shall be included. Mill certificates for hex nuts and couplers shall also be submitted to the Resident.

The Micropile Contractor shall submit a Quality Control Plan (QCP) for the grout, in accordance with Standard Specification Section 502.1701, Quality Control, Method A and B, with the following exception: There are no permeability or entrained air requirements. This plan shall also include a description of the procedures and equipment for placing the grout and the method for monitoring quality control of the mix. At a minimum, quality control shall include: Use of a Baroid Mud Balance per American Petroleum Institute (API) Recommended Practice (RP) 13B-1, Standard Procedure for Testing Water Based Drilling Fluids, to check the specific gravity of the mixed grout prior to placement of the grout into each micropile; and compressive

strength testing in accordance with AASHTO T106/ASTM C109 at a frequency of no less than one set of three (3) 2-inch grout cubes each day of operation, or per every six (6) micropiles, whichever occurs more frequently.

The Micropile Contractor shall submit detailed plans for the method proposed for load testing (both verification and proof tests) the micropiles to the Resident for review and acceptance prior to beginning load tests. This shall include all necessary drawings and details to clearly describe the proposed verification load test locations, load test method and equipment, as well as calculations to ensure that the load test equipment and subgrade are adequate to accommodate the proposed test loads, and shall bear the seal of a Professional Engineer registered in the State of Maine.

The Micropile Contractor shall submit to the Resident calibration reports for each test jack, pressure gauge, master pressure gauge and load cell to be used. The calibration tests shall have been performed by an independent testing laboratory and tests shall have been performed within sixty (60) days of the date submitted. The Resident shall approve or reject the calibration data within five (5) working days after receipt of the data. Testing shall not commence until the Resident has approved the jack, pressure gauge and master pressure gauge calibrations.

Micropile installation records shall be submitted to the Resident within 24 hours after each micropile installation is completed. As a minimum the records shall include: micropile drilling duration and observations; description of soil and bedrock encountered; micropile inclination; approximate final drill hole, casing, reinforcement, and centralizer elevations; cut-off elevation; description of unusual behavior and/or conditions; deviations from planned parameters; grout volumes pumped; grout pressures; micropile materials and dimensions; micropile location; inspector name; drill method; grout method; drill rig operator.

The Micropile Contractor shall submit to the Resident within thirty (30) calendar days after completion of the micropile work a report containing:

1. As-built drawings showing the locations of the micropiles and the micropile lengths.
2. Steel manufacturer's mill test reports for the reinforcing steel, and coupon test results for permanent steel casing.
3. Detailed drilling records including depth to bedrock and bedrock quality.
4. Grouting records indicating the cement type, quantity injected and pressure.
5. Results of grout cube breaks.
6. Micropile load test results and graphs.

501.02 Materials

For all steel remaining as a permanent part of the work, including "mill secondary" casing, all Buy America provisions shall apply. Refer to Standard Specifications Subsection 105.11,

Other Federal Requirements, and Standard Specifications Appendix A to Division 100, Section 3, Other Federal Requirements.

Water Water shall meet the requirements of Subsection 701.02.

Grout Cement grout for grouting the micropiles shall be either neat cement grout, or sand-cement grout with a water-cement ratio not more than 0.45 by weight. Water content and consistency of grout may be varied only by written approval by the Resident and Geotechnical Engineer. Minimum 28-day unconfined compressive design strength of grout shall be 5,000 psi per AASHTO T106. The grout design strength shall be achieved prior to placing pile cap concrete. Materials for cement grout shall be in accordance with the approved submittal. All cement shall be Portland cement conforming to AASHTO M85, Types I, II, III or V.

The grout shall be pumpable and consist of a mixture of Portland cement, mineral filler, plasticizer, sand and water so proportioned and mixed as to provide a grout capable of maintaining the solids in suspension without appreciable water gain, yet which will laterally penetrate and fill any voids in foundation material.

Mineral filler shall be finely powdered siliceous material, which possesses the property of chemically reacting in the presence of moisture with calcium hydroxide at ordinary temperatures to form compounds possessing cementitious properties. Plasticizer shall be a compound possessing characteristics which will increase the flowability of the mixture, assist in the dispersal of cement grains, and neutralize the setting shrinkage of the cement mortar.

Admixtures shall conform to the requirements of AASHTO M 194. Expansive admixtures and those with chlorides shall not be used. Admixtures shall be compatible with the grout and mixed in accordance with the manufacturer's recommendations. Their use shall only be permitted after field tests on fluid and set grout properties. Admixtures shall be submitted for review and approval by the Resident.

Fine Aggregate If sand-cement is used, sand shall conform to AASHTO M45 (ASTM C144).

Grout Protection Provide a minimum 1-inch grout cover over bars and ½ inch grout cover over couplers.

Reinforcing Steel Reinforcement steel shall be continuously threaded bar conforming to AASHTO M31 (ASTM A615), Grade 75 or better. When a bearing plate and nut are required to be threaded onto the top end of the reinforcing bars for micropile top to footing anchorage, the threading may be continuous spiral deformed ribbing provided by the bar deformations or may be cut into the reinforcing bar. If threads are cut into a reinforcing bar, the next larger bar number designation from that shown on the Plans shall be provided at no additional cost.

Reinforcing steel shall be galvanized in accordance with AASHTO M232 (ASTM A153)

Hex Nuts and Couplers Hex Nuts and Couplers shall conform to ASTM A576, Grade 75 or better. Hardened washers shall conform to ASTM F436, Grade 75 or better. Tension couplers shall be able to develop 1.25 times the theoretical yield strength of the spliced bar. Couplers shall be sized such that they allow the passage of grout between the casing and coupler, and shall be placed no shallower than 15 feet below the cutoff elevation.

Hex nuts and couplers shall be galvanized in accordance with AASHTO M232 (ASTM A153).

Permanent Steel Casing Steel casing for micropiles shall have the minimum outside diameter and wall thickness shown on the Plans and shall meet the tensile requirements of API 5CT Grade N80 (80 ksi) or better. The casing should be able to withstand the stresses associated with advancing it into the ground, in addition to the stresses due to hydrostatic and earth pressures. Casing shall be straight-seamed. Lap welded seams are not acceptable. Casing shall be either:

1. New “mill secondary” steel casing without mill certification, provided it is free from defects (dents, cracks, tears) and has a minimum of two unique coupon tests per truckload meeting the requirements of ASTM A 370-14, or
2. "Prime" steel casing meeting the requirements of API 5 CT Grade N80 or better.

If welding of high strength steel casing is required, a welding procedure conforming to AWS D1.1 *Structural Welding Code – Steel* specifications and recommendations shall be submitted to the Resident for review and acceptance, prior to any welding operation.

Permanent Steel Casing splices shall conform to the requirements of ASTM A148/A148M, Grade 725-585 (Grade 105-85). Casing splices or threads shall develop the required nominal strength of the pile cross section and shall provide proper alignment so that no eccentricity or angle occurs between the axes of the two lengths spliced.

The Permanent Steel Casing shall be flush joint and the pipe joint shall be completely shouldered and with no stripped threads.

The manufacturer or fabricator of steel pipe piling shall furnish a certificate of compliance stating that the piling being supplied conforms to these specifications. The certificate of compliance shall include test reports for tensile and chemical tests. Samples for testing shall be taken from the base metal, steel or coil or from the manufactured or fabricated piling. The certificate of compliance shall be in English units.

Plates and Shapes Structural steel plates and shapes for micropile top attachment shall conform to AASHTO M 223 Grade 50 (ASTM A572).

Plates and Shapes shall be galvanized in accordance with Section 506, Shop Applied Protective Coating – Steel.

Centralizers and Spacers for Reinforcing Steel Centralizers and spacers shall be fabricated from schedule 40 PVC pipe or tube, steel, or material non-detrimental to the reinforcing steel. Wood shall not be used.

Centralizers and spacers shall be securely attached to the reinforcement; sized to position the reinforcement within 3/8 inch of plan location from center of micropile; sized to allow grout tremie pipe insertion to the bottom of the drill hole; and sized to allow grout to freely flow up the drill hole and permanent steel casing without misalignment of the reinforcement.

501.04 Construction Requirements

Progress all micropiles using permanent steel casing. If replacement micropiles are needed because installed micropiles are unacceptable, location of the replacement micropile(s) shall be approved by the Resident. All installation techniques shall be determined and scheduled such that there will be no interconnection (grout flow between holes) or damage to previously installed micropiles.

Tolerances Install the top of the permanent steel casing to the elevation indicated in the Plans. Install the permanent steel casing so that the center of each casing does not vary from the plan location by more than 3 inches. Micropile-hole alignment of vertical micropiles shall be within 2% of design alignment. Micropile-hole alignment of micropiles inclined up to 1:6 shall be within 4% of design alignment. Micropile-hole alignment of micropiles inclined greater than 1:6 shall be within 7% of design alignment. Top elevation of the micropile as measured at the cutoff elevation of the casing shall be within plus or minus 1 inch of the design vertical elevation. Centerline of reinforcing steel shall not be more than 3/4 inch from centerline of piling.

Drilling, Soil Removal, and Permanent Casing Installation The drilling equipment and methods shall be suitable for drilling through the conditions to be encountered, with minimal disturbance to these conditions or any overlying or adjacent structures or services. The drilling equipment shall be capable of installing micropiles to a depth and size shown on the Plans and to an additional depth of twenty (20) percent of the micropile length beyond the tip depths shown in the Plans. Drill so that the micropile is not moved out of horizontal alignment or out of specified inclination. Drill casing shall be extended to and sealed into bedrock prior to drilling the rock sockets. Open/unsupported drill holes will not be permitted. Do not drill or flush ahead of the drill casing by more than 6 inches in soil. Perform drilling and excavation in such a manner as to prevent the collapse of the hole. Use of bentonite slurry is not permitted. Use of polymer slurry to remove cuttings from the cased hole must be approved by the Resident. Install micropiles so that the permanent steel casing is in intimate contact with the surrounding soil. If a cutting shoe is used for advancing the casing, the cutting shoe diameter shall not exceed the outer diameter of the casing plus 0.25 inches. Advance the hole using duplex drilling methods and reverse

circulation within the drill casing. Positive circulation or flushing, a method of progressing and cleaning out a hole for a micropile wherein water is injected into the hole and returns upward along the outside of the drill casing, will not be allowed. The use of air to clean the casing will be allowed at the discretion of the Engineer. These methods are allowed provided the Specialty Contractor exercises caution to prevent over-excavation or heaving.

Micropile sockets or bond lengths shall be drilled to the minimum rock socket or bond length shown in the Plans. The bond length must be confirmed by approved methods to be open to the defined nominal diameter, full length, prior to placing reinforcing steel and grout.

The Micropile Contractor is responsible for removing and/or advancing through any cobbles, boulders, and all obstructions other than existing bridge foundation H-piles that may interfere with the installation of Micropiles. The Micropile Contractor shall have and maintain on site at all times the proper equipment, tools, materials, and labor necessary for the effective removal or penetration of such materials, if encountered. An impact or vibratory hammer shall not be used to advance casing; this requirement does not apply to rotary percussive techniques that use top-drive hammers or down-the-hole hammers.

Control the procedures and operations to prevent undermining, damage or settlement to adjacent structures, tunnels, utilities or adjacent ground. If any undermining, damage or settlement occurs, halt operations. Provide a written plan to the Resident and the Geotechnical Engineer for review with procedures to avoid reoccurrence. Resume work only after the Resident and Geotechnical Engineer have approved the plan in writing. Repair all damage and settlement at no additional cost to the Department. Delays resulting from the plan preparation and review process shall be the sole responsibility of the Micropile Contractor, and shall be at no additional cost to the Department.

Control the procedures and operations to prevent soil or rock material from moving into the bottom of the hole at all times during installation and cleaning out. Maintain the fluid level inside the hole above the ground water level at all times during installation and cleaning out. Monitor the rate of fluid flow used to progress the holes. Monitor any adjacent water body for siltation resulting from drilling and flushing.

Control drilling fluid and dispose of spoil in accordance with the approved procedure. Drill fluid and cuttings shall be controlled by diverters, or other methods approved by the Resident, that produce a closed system allowing all drill spoil to be placed in settling tanks for separation of fluid and solids for eventual disposal. Wastes and spoils must be disposed of in an appropriate manner. Deposition of waste and spoil on local streets and in sewers will not be permitted.

Pre-drilling more than one hole or incomplete drilling of holes shall not be permitted unless otherwise approved by the Engineer. All incomplete micropiles that are in progress shall be capped or covered during overnight or weekend breaks for safety and to prevent any objects from falling in. Do not advance a drill hole, clean a completed drill hole, pressure grout, or post-grout, within a radius of five (5) pile diameters or five (5) feet, whichever is greater, of a grouted

micropile until the grout for that micropile has set for at least 24 hours, or longer if a retarder is used. The Resident will determine the longer wait time if a retarder is used based on the of the grout testing.

All installation techniques shall be determined and scheduled such that there will be no interconnection or damage to micropiles in which grout has not achieved final set.

H-Pile Obstructions The Micropile Contractor shall notify the Resident immediately, first verbally then in writing, if the Micropile Contractor has encountered materials that they believe should be classified as an obstruction. Upon verbal notification, the Resident will determine if the encountered materials are to be classified as an obstruction.

If the Resident determines that the material is an H-pile from the existing bridge foundation, the Micropile Contractor may be directed to abandon the micropile and offset to an adjacent location, as determined by the Resident and the Geotechnical Engineer. If a micropile is to be abandoned, the Contractor shall terminate all drilling and backfill the micropile excavation with grout up to a point 2 feet below the bottom of proposed footing. Grout shall be placed from the bottom of the hole up using tremie methods. Micropile casing shall be removed during or immediately after grouting. If casing is removed during grouting, the Micropile Contractor shall maintain a minimum 5 foot grout head above the tip of casing at any given time to ensure hole stability. Upon full removal of casing, ensure that grout is topped off to 2 feet below the bottom of proposed footing. Top off the micropile excavation to bottom of footing elevation with granular borrow.

Reinforcing Steel, Centralizers, and Post Grout Tube Placement Reinforcing Steel shall be placed immediately prior to primary grouting. The Reinforcing Steel surface shall be free of all deleterious substances such as soil, mud, grease or oil that might contaminate the grout or coat the reinforcement and impair bond.

Centralizers shall be provided at 10 ft. maximum spacing on central reinforcement. The uppermost and lowermost centralizers shall be located a maximum of 5 feet from the ends of the micropile. Securely attach the centralizers to withstand installation stresses. Centralizers shall be provided of appropriate size to center the reinforcing steel in the bond zone and the permanent steel casing.

The Micropile Contractor shall check micropile top elevations and adjust all installed micropiles to the planned elevations.

After drilling, the hole shall be flushed with water and/or air or other method per approved Contractor submittal to remove drill cuttings and/or other loose debris to the satisfaction of the Geotechnical Engineer and the Resident. After the Resident confirms that the hole is clean and open to depth, and immediately prior to grouting, lower the reinforcing steel to its specified location in the hole without dropping. If a post grout tube is used, attach it to the reinforcing steel prior to lowering it. Partially inserted reinforcing steel shall not be driven or forced into the

hole. The Micropile Contractor shall remove the steel, redrill and reinsert steel when necessary to facilitate inserting at no additional cost to the Department. There shall be no interconnection or damage to micropiles in which the grout has not achieved final set.

Grout Placement The Micropile Contractor shall provide calibrated systems and equipment to measure the grout quality (including, at a minimum, compressive strength according to AASHTO T106/ASTM C109 and grout specific gravity), quantity, and pumping pressure during the grouting operations. Pressure is usually applied by attaching a pressure cap to the top of casing or drilling head and injecting additional grout in to the casing under controlled pressure. The minimum pump pressure at the top of the steel casing shall be calculated by the Micropile Contractor and provided in their submittal. The pressure gauge for grout pressure monitoring shall be capable of measuring pressure of at least 200 psi or twice the actual grout pressure to be used by Specialty Contractor, whichever is greater. Provide pressure gages capable of measuring the actual grout pressures used such that actual pressure readings are within the middle third of the gage. The grouting operations for micropiles shall begin within 4 hours after the micropile has been successfully cleaned.

The grout shall not contain lumps or any other evidence of poor or incomplete mixing. Admixtures, if used, shall be mixed in accordance with manufacturer's recommendations. The grouting equipment shall be sized to enable the grout to be pumped in one continuous operation. The grout shall be kept in constant agitation prior to pumping. Fill annular space between the Permanent Steel Casing and the Reinforcing Steel with grout meeting the requirements of the approved mix design. Grout shall be placed within one (1) hour or less after mixing or within the time recommended by the manufacturer if admixtures are used and shall be installed without significant interruption. If significant interruption occurs, the Micropile Contractor shall replace the micropile or install a new replacement micropile at a location approved by the Resident at no additional cost to the Department. Grout not placed within the allowed time will be rejected.

Provide quality control of the mix by monitoring grout quality per the QCP submitted to, and accepted by, the Department.

The grout shall be injected from the lowest point of the drill hole by means of a tremie pipe/tube until clean, pure grout flows from the top of the micropile as determined by the Resident. The grout shall be pumped through grout tubes. All grouting operations shall ensure complete continuity of the grout column. For bond lengths in soil, closely control the rate of drill casing removal such that the grout level remains at the top of the casing. Perform pressure grouting and simultaneous casing withdrawal until the required bond zone length is achieved. Maintain a positive flow of grout into the micropile after withdrawal of each length of casing. The use of compressed air to directly pressurize the fluid grout is not permissible. The entire micropile shall be grouted to the design cut-off level. Make provisions for checking the grout level in place at the end of each stage of grouting. Record the initial volume of grout required to fill the hole. Upon completion, maintain the grout level at or above the micropile cut off elevation until the grout has set. Record date and time of observed grout loss and volume of added grout.

Upon completion of grouting, the grout tube may remain in the hole, but it shall be filled with grout. If post-grouting is utilized, perform post-grouting at least 48 hours after the primary grout or after the grout for the micropile has hardened. Record the pressure at which the grout was pumped and the volume pumped through each port.

Provide means and access for grout volume measurement at the micropile installation site to the Resident and the Geotechnical Engineer.

Grout Testing Testing will be performed in accordance with the QCP submitted to, and accepted by, the Department.

Micropile Acceptance Criteria The following shall be achieved in order for the production Micropiles to be acceptable to the Department:

1. Tolerance criteria met
2. Installed in accordance with the approved Micropile Installation Plan and Grouting QCP.
3. Installed to the minimum rock socket embedment or minimum bond zone length shown in the Plans.
4. No damage sustained during construction.
5. Micropile was installed using the same methods as were used to install the accepted test piles.

Unacceptable Micropiles Unacceptable micropiles are micropiles which do not meet the Acceptance Criteria outlined above.

In the event that a Micropile is identified as unacceptable, the Micropile Contractor shall submit to the Resident a written plan of remedial action showing how to correct the problem and prevent its reoccurrence. The Micropile Contractor shall repair, augment, or replace the unacceptable micropile in accordance with the approved remedial plan at no additional cost to the Department. No repair shall be permitted until the written plan is approved by the Resident. To mitigate and/or to remedy unaccepted micropiles, the Micropile Contractor may be required to provide additional micropiles or supplement micropiles to meet specified requirements. Any associated work required due to unacceptable micropiles shall be at no additional cost. Payment will not be made for a rejected micropile until such time that the micropile is repaired or augmented to the satisfaction of the Resident.

501.041 Verification Load Testing.

Two (2) successful, pre-production verification axial load tests shall be conducted on sacrificial, plumb micropiles (test piles) installed within 50 feet of the abutment micropile locations for the proposed structure for Interstate 295 (WIN 021745.00): One (1) at each abutment (one west of the proposed north abutment, one east of the proposed south abutment).

Location of test piles shall be proposed by the Micropile Contractor and approved by the Resident. Verification load tests shall be performed in the presence of the Department and shall verify that the test pile meets the required compression or tension load capacity and the load test acceptance criteria. The test piles shall be installed and tested prior to production micropile installation. The drilling and grouting methods, casing and other reinforcement details, and depth of embedment for the successful test piles shall be identical to the subsequent production micropile installation except where approved otherwise by the Resident. A bond breaker shall be installed above the top of the rock socket in the test piles installed for verification testing to isolate the rock socket. The verification load tests will be conducted in tension. The test piles shall be loaded to 150% of the factored design compression load.

Micropile verification load testing shall be in general conformance with ASTM D-3689 (tension load test) except as modified herein. The Micropile Contractor shall provide load testing equipment with a movement-measuring device with a sensitivity of 0.001 inches of displacement. Testing equipment shall include two (2) dial gauges, dial gauge support, jack and pressure gauge, electronic load cell, wire, mirror, and scale, and reference beam. A leveling plate shall be attached to the surface of the test pile and the jack shall be set in position with the load centered on the pile. The hydraulic jack and pressure gauge shall be calibrated by an independent testing laboratory as a unit with the pressure gauge graded to allow 10 kip increments.

The Micropile Contractor shall position the jack at the beginning of the load test such that the unloading and repositioning of the jack during the load test will not be required. An Alignment Load (AL) may be applied to the micropile prior to setting the movement recording devices. The AL shall be no more than 0.04 times the Factored Design Load (FDL). Dial gauges shall be zeroed at the first setting of the AL.

The Micropile Contractor shall perform the sacrificial verification micropile load test by incrementally loading the micropile in accordance with the following schedule and recording the micropile head movement at each step:

Load Steps for Verification Load Testing

AL = Alignment Load FDL = Factored Design Load		
	LOAD	HOLD TIME
1	AL (0.04 FDL)	-
2	0.075 FDL	4 minutes
3	0.15 FDL	4 minutes
4	0.225 FDL	4 minutes
5	0.30 FDL	4 minutes
6	0.375 FDL	4 minutes
7	AL (0.04 FDL)	1 minute
8	0.15 FDL	1 minute
9	0.30 FDL	1 minute
10	0.375 FDL	1 minute
11	0.45 FDL	4 minutes
12	0.525 FDL	4 minutes
13	0.60 FDL	4 minutes
14	0.675 FDL	4 minutes
15	0.75 FDL	4 minutes
16	AL (0.04 FDL)	1 minute
17	0.30 FDL	1 minute
18	0.60 FDL	1 minute
19	0.675 FDL	1 minute
20	0.75 FDL	1 minute
21	0.825 FDL	4 minutes
22	0.90 FDL	4 minutes
23	0.975 FDL	10 or 60 minutes (Creep Test Load Hold)
24	AL (0.04 FDL)	1 minute
25	0.30 FDL	1 minute
26	0.60 FDL	1 minute
27	0.90 FDL	1 minute
28	0.975 FDL	1 minute
29	1.05 FDL	4 minutes
30	1.125 FDL	4 minutes
31	1.2 FDL	4 minutes
32	1.275 FDL	4 minutes
33	1.35 FDL	4 minutes
34	1.425 FDL	4 minutes
35	1.5 FDL	4 minutes
36	1.2 FDL	4 minutes
37	0.90 FDL	4 minutes
38	0.60 FDL	4 minutes
39	0.30 FDL	4 minutes
40	AL (0.04 FDL)	15 minutes

Micropile top movement shall be measured at each load increment. Micropile movement during the creep test shall be measured and recorded at 1, 2, 3, 4, 5, 6, 10, 20, 30, 50, and 60 minutes.

The Acceptance Criteria for micropile verification load tests shall be:

1. The micropile shall sustain the axial compression design load (0.75 FDL) in tension with no more than 0.25-inch total vertical movement at the top of micropile in addition to the theoretical elongation of the debonded bar through the micropile unbonded length, as measured relative to the top of the micropile prior to the start of load testing. If an alignment load is used, then the allowable movement will be reduced by multiplying by a factor of $[(0.75 \text{ FDL} - \text{AL})/0.75\text{FDL}]$.
2. Test micropiles shall have a creep rate at the end of the 0.975 FDL increments which is not greater than 0.04 inches/log cycle time from 1 to 10 minutes or 0.08 inches/log cycle time from 6 to 60 minutes and has a linear or decreasing creep rate throughout the creep load hold period.
3. Failure does not occur by the 1.5 FDL test load. Failure is defined as a slope of the load versus deflection curve (at end of increment) exceeding 0.025 inch/kip.

If the micropile load test fails to meet the design requirements, the cause(s) shall be established, and the micropile design and/or installation methods shall be modified. These modifications include, but are not limited to, installing replacement micropiles, modifying the installation methods, increasing the bond length, regrouting via pre-placed re-grout tubes, or changing the micropile type. Any modification which requires changes to the structure shall have prior review and acceptance of the Resident. The cause for any modifications of design or construction procedures shall be decided in order to appropriately determine any additional cost implications. Any modifications of construction procedures shall be at the Micropile Contractor's expense. Subsequent verification micropiles shall be installed at locations approved by the Resident using the approved modified construction procedures and retested, as detailed previously in this Subsection. If the verification test results meet the acceptance criteria, the Resident shall review and approve the modified design and/or installation methods proposed by the Micropile Contractor prior to beginning production micropile installation.

The Micropile Contractor shall minimize disturbance to the ground surface when placing and removing blocking.

The Micropile Contractor will provide the Resident a written report confirming micropile details and construction procedures within 7 working days after the completion of the pre-production load tests. This written confirmation will either confirm the micropile construction methods initially proposed and bond lengths as shown in the drawings for micropiles or propose modifications based upon the results of the verification load tests.

At the completion of verification load testing, test micropiles shall be removed down to the elevation specified by the Resident.

501.042 Proof Load Testing.

The Micropile Contractor shall perform proof load tests on a minimum of one (1) production micropile per each abutment. Micropile proof load tests shall be performed in the presence of the Department. The micropiles to be proof load tested will be selected by the Resident. Proof load tests shall be conducted in tension.

Axial micropile proof load tests shall be made by loading the micropiles in accordance with the following schedule and recording the micropile head movement at each step:

Load Steps for Proof Load Testing		
AL = Alignment Load FDL = Factored Design Load		
	LOAD	HOLD TIME
1	AL(0.04 FDL)	4 minute
2	0.10 FDL	4 minute
3	0.20 FDL	4 minute
4	0.30 FDL	4 minute
5	0.40 FDL	4 minute
6	0.50 FDL	4 minutes
7	0.60 FDL	4 minutes
8	0.70 FDL	4 minutes
9	0.80 FDL	4 minutes
10	0.90 FDL	4 minutes
11	1.00 FDL	10 or 60 minutes (Creep Test)
12	0.75 FDL	4 minutes
13	0.50 FDL	4 minutes
14	0.25 FDL	4 minutes
15	AL (0.04 FDL)	4 minutes

The Acceptance Criteria for micropile proof load tests shall be:

1. The micropile shall sustain the design loads (0.75 FDL) with no more than 0.25 inch of total vertical movement at the top of micropile in addition to the theoretical elongation of the bar through the unbonded length, as measured relative to the micropile prior to the start of load testing. If an AL is used, then the allowable movement will be reduced by multiplying by a factor of $[(0.75 \text{ FDL}-\text{AL})/0.75 \text{ FDL}]$.
2. Test micropiles shall have a creep rate at the end of the 1.00 FDL increment that is not greater than 0.04 inch/log cycle time from 1 to 10 minutes or 0.08 inch/log cycle time from 6 to 60 minutes and has a linear or decreasing creep rate.

3. Failure does not occur by 1.00 FDL test load. Failure is defined as a slope of the load versus deflection curve (at end of increment) exceeding 0.025 inch/kip.

If a production micropile that is proof load tested fails to meet the Acceptance Criteria, modifications shall be made to the design, the construction procedures or both. These modifications include, but are not limited to, installing replacement micropiles, incorporating micropiles of reduced load capacities, modifying the installation methods, increasing the bond length, or changing the micropile type. Any modification which requires changes to the structure shall have prior review and acceptance of the Resident. Any modifications of construction procedures shall be at the Micropile Contractor's expense. The Resident may elect to proof test an additional micropile in consideration of a failed proof test and/or the circumstances of the modification.

501.05 Method of Measurement

Drilling Equipment Mobilization All work related to mobilization and demobilization of any equipment or temporary access and/or working platforms required to satisfactorily complete all micropile installation and load testing shall be measured on a lump sum basis.

Micropiles shall be measured by linear foot of accepted production micropiles installed. The length shall be determined as the difference between the micropile cutoff elevation at top of casing and the bottom of the rock socket or bond length. Measurement shall not include any cased length below top of rock beyond the seat length indicated in the Plans unless approved by the Resident. This measurement shall not include micropiles damaged prior to completion of the work unless remedied to the satisfaction of the Resident.

Micropile Verification Load Test shall be measured per each test performed and accepted for each designated pile load capacity, including installation of accepted test pile. Load tests made at the option of the Contractor shall not be measured for payment.

Micropile Proof Load Test shall be measured per each test performed and accepted for each designated pile load capacity. Load tests made at the option of the Contractor shall not be measured for payment.

Abandoned Micropiles shall be measured by linear foot of micropile excavation drilled, grouted, and backfilled. The length shall be determined as the difference between the bottom elevation of proposed footing and the tip elevation of the micropile at the depth where conflict with existing H-pile was encountered.

501.06 Basis of Payment

Drilling Equipment Mobilization This item shall include the cost of furnishing all labor, equipment, and materials needed to complete micropile installation, including transporting,

erecting, dismantling and removing all micropile construction and load testing equipment. The lump sum price for this item will be paid once all equipment is mobilized to the Project site.

Micropiles The unit bid price shall include cost of the micropiles (installed and accepted), development and execution of an approved QCP, furnishing all labor, materials and equipment necessary to complete the work, and submit reports. All costs to repair all damage and settlement to adjacent ground and structures shall be incidental to the pay item for micropiles and at no additional cost to the Department. All costs to repair, augment and/or replace all rejected micropiles shall be incidental to the pay item for micropiles and at no additional cost to the Department. Micropiles that fail to meet the Acceptance Criteria will be rejected and no payment will be made for these micropiles.

The Micropile Contractor is responsible for estimating the grout take. There will be no extra payment for grout overruns. All costs associated with micropile installation include full compensation for any casings, augers, grouting operations, drilling equipment, or specialty tools needed to micropiles shall be incidental to the contract pay item for micropiles.

Micropile Verification Load Test shall be paid for at the contract unit price per each test, satisfactorily completed, and meeting the acceptance criteria as stated herein. Payment for verification load tests includes full compensation for providing all labor, equipment, and materials needed to perform load tests and submitting reports as specified.

Micropile Proof Load Test shall be paid for at the contract unit price per each test, satisfactorily completed, and meeting the acceptance criteria as stated herein. Payment for verification load tests includes full compensation for providing all labor, equipment, and materials needed to perform load tests and submitting reports as specified.

Abandoned Micropiles The linear foot price shall include cost of the abandoned micropile excavation, grouting, and casing removal, furnishing all labor, materials and equipment necessary to complete the work.

Payment will be made under:

<u>Pay Item:</u>		<u>Pay Unit</u>
501.222	Micropiles	Linear Foot
501.2221	Abandoned Micropiles	Linear Foot
501.2331	Micropile Verification Load Test	Each
501.2341	Micropile Proof Load Test	Each
501.804	Drilling Equipment Mobilization - Micropiles	Lump Sum

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(QC/QA Acceptance Methods)

CLASS OF CONCRETE	ITEM NUMBER	DESCRIPTION	P	METHOD
A	502.219	Structural Concrete, Abutments and Retaining Walls	400	A
A	502.26	Structural Concrete Roadway and Sidewalk Slab on Steel Bridges	400	A
LP	526.3311	Single Slope Concrete Traffic Barrier	450	A
LP	526.502	Precast Concrete Median Barrier	450	A
LP	626.31	18 inch Diameter Foundation	-	C
LP	626.332	30 Inch Diameter, Greater than 8 feet long, and all 36 Inch and 42 Inch Diameter Foundations	-	C
LP	626.333	48 Inch Diameter, 54 Inch Diameter, 60 Inch Diameter	-	C
N/A	602.302	Lightweight Foam Concrete Fill	-	C
N/A	602.303	Lightweight Foam Concrete Distribution Slab	-	C

P values listed above reflect the price per cubic yard (yd³) for all pay adjustment purposes.

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(QC/QA Acceptance Methods)

CLASS OF CONCRETE	ITEM NUMBER	DESCRIPTION	P	METHOD
A	518.51	Repair of Upward Facing Surfaces – Below Reinforcing < 8 inches	\$0	C
A	518.60	Repair of Vertical Surfaces < 8 inches	\$0	C
A	518.70	Repair of Overhead Surfaces < 8 inches	\$0	C
A	518.71	Repair of Overhead Surfaces > 8 inches	\$0	C
LP	520.245	Bridge Joint Modification Type 5	\$0	C
LP or P	526.503	Precast Concrete Transition Barrier	\$0	C

P values listed above reflect the price per cubic yard (YD³) for all pay adjustment purposes.

SPECIAL PROVISION
SECTION 518
STRUCTURAL CONCRETE REPAIR

518.10 Method of Measurement

Paragraph four is removed and replaced with the following:

Supplementary reinforcing steel will not be measured separately but shall be incidental to the relevant concrete repair item. Reinforcing steel required to supplement reinforcing steel damaged by the Contractor shall be supplied and installed at the Contractor's expense.

Basis of Payment

Paragraph four is removed and replaced with the following:

Fabrication, delivery and placing of reinforcing steel, and mechanical couplers if required, shall be incidental to the related concrete repair item.

SPECIAL PROVISION
SECTION 520
EXPANSION DEVICES
(Armorless Bridge Joint)

This section is amended by the addition of the following:

520.01 Description This work shall consist of furnishing and installing an Armorless Bridge Joint system as shown on the plans and in accordance with these specifications. The joint shall be installed the full length of the bridge median barrier between the northbound and southbound structures. At the horizontal and vertical termination points of the joint the voids shall be finished with an approved non-sag silicone-based sealant.

520.011 Submittals Prior to construction, the Contractor shall submit complete and detailed Shop Drawings of the proposed joint system for review and approval. Shop Drawings shall include information covering materials, their properties, the manufacturer's recommended installation procedures, storage and handling requirements, and Materials Safety Data Sheets.

520.02 Materials The proposed joint system shall consist of a system conforming to the details and dimensions shown on the Plans, in accordance with these Specifications or as approved by the Resident.

The following systems are acceptable for use as armorless bridge joints:

DSM System
EMSEAL
25 Bridle Lane
Westborough, MA 01581

Jeene
Watson Bowman Acme
95 Pineview Drive
Amherst, NY 14228

J-Series
D.S. Brown
300 East Cherry St.
North Baltimore, OH 45872

Evazote UV
Watson Bowman Acme
95 Pineview Drive
Amherst, NY 14228

520.06 Installations The joint system shall be installed in one continuous piece and in accordance with manufacturer's latest instructions and specifications. Field splicing of the system will not be allowed.

The proposed joint system shall be sized to allow a total joint movement of 0.5 inches. The installation shall be centered over the expansion joint gap as indicated on the Plans. In no case shall the joint be installed when the ambient or substrate temperatures is below 40°F, when rain is imminent, or in other environmental conditions disapproved by the Resident.

520.07 Method of Measurement The Armorless Bridge Joint system will be measured as one lump sum, in place, and accepted. Non-sag silicone sealant will not be measured for payment separately but shall be considered incidental to the joint pay item.

520.08 Basis of Payment Payment for the Armorless Bridge Joint shall be full compensation for all labor, materials, equipment and incidentals required for furnishing and installing the joint system as shown on the Plans, in accordance with these Specifications or as approved by the Resident.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
520.223	Armorless Bridge Joint	Lump Sum

SPECIAL PROVISION
SECTION 520
EXPANSION DEVICES
(Bridge Joint Modifications)

Description

This work shall consist of removal, adjustment, repair, modification, and replacement of bridge joints, as indicated on the plans and in accordance with Special Provisions and Standard Specifications. The joint and seals shall be the type indicated on the plans and shall meet the material, fabrication, and construction requirements of the relevant Standard Specifications and Special Provisions.

Unless otherwise defined on the plans, joint replacements shall be the full width of the bridge, including curbs and sidewalks.

Materials

All structural concrete removed shall be replaced with Class LP concrete meeting the requirements of Section 502 except in areas specified to be repaired in accordance with Standard Specification 518, Structural Concrete Repair. As an alternative to the standard Class LP concrete, the Contractor may propose the use of an accelerated Class LP concrete. Acceptable methods for rapid strength gain shall include, but are not limited to, additional cementitious content, non-chloride chemical accelerators, Type III Portland Cement, and heated mix water and aggregates. Trial batches shall be performed and submitted to the Department indicating a minimum of 4000 PSI compressive strength in 24 hours.

The use of rapid setting cement may be substituted for normal Portland Cement and must obtain a minimum of 5000 PSI compressive strength in 24 hours. Rapid set cement products proposed for use shall be on the MaineDOT Qualified Product List.

When called for in the plans or specifications, Elastomeric Concrete shall be one of the products listed on the Maine Department of Transportation's Qualified Product List for Elastomeric Concrete. The selected material shall have sufficient strength gain to open the repaired area to traffic by the time required in Special Provision 107 Work Time.

The Joint and Seals, as required, shall be the type indicated on the plans and shall meet the material, fabrication, and construction requirements of Section 520 - Expansion Devices - Non-Modular. Expansion Joints and Seals shall be selected from the appropriate MaineDOT Qualified Product List of Bridge Compression Seals and Gland Seals.

The materials furnished, and equipment and installation procedures used, shall be in strict accordance with the manufacturer's/supplier's published product data and installation guidelines.

Product data, installation guidelines, test data and reports, and material certifications shall be submitted for review and approval.

Construction Requirements

Prior to the installation of any elastomeric concrete on the project, the Contractor shall demonstrate the selected material can be placed and finished at the steepest profile grade / cross slope on the project to be undertaken without the material sloughing downslope or flowing to a level finish grade. The demonstration shall include constructing an off-site mock-up of a typical joint header replicating the Contractor's proposed forming methods. The mock-up shall be at least 1'-6" wide, 4" deep and 12' long and constructed to match the maximum profile grade and cross slope on the project.

With the Department's inspection personnel present, the selected elastomeric concrete materials shall be mixed, placed and finished per the manufacturer's recommendations using the same equipment, materials and crew size that will be used to complete the actual header concrete placement. To the extent possible, the environmental conditions during the mock-up shall match the field conditions expected during placement of the elastomeric concrete. The length of header concrete placed and cured during the mock-up placement shall replicate the maximum length of header concrete that will be placed during a single placement in the field. The Contractor will be responsible for demonstrating the selected materials, construction methods, and crew are capable of mixing, placing, finishing and holding the elastomeric concrete at the maximum project profile grade/ cross slope until the material sets sufficiently to stop moving. The surface tolerance for the finished elastomeric concrete for this project shall be $\pm 1/4"$. If the Contractor does not meet the required surface tolerances during placement of the mock-up adjustments shall be made to the proposed materials, equipment, and/or crew as required and the mock-up shall be repeated until acceptable results are achieved.

The Contractor will be required to use the same materials, equipment and crew used to construct the successful mock-up for all production placements.

Any changes to the proposed construction methods, materials, equipment or crew may, at the sole discretion of the Resident, require completion of an additional mock-up.

The removal, adjustment, modification and replacement of bridge joints shall be done in a manner that accommodates maintenance of traffic requirements and shall be coordinated with the paving specified to be completed under this project.

Several bridge decks and curbs contain PVC electrical conduit and wiring. The Contractor shall field verify the presence of electrical conduit and shall take all precautions necessary to avoid damaging any embedded conduits. Any conduit or electrical wiring damaged as a result of the Contractor's operations shall be repaired by the Contractor at no expense to the Department. Where the specified joint modifications include reconstruction of the backwall and deck on bridges that contain conduit, and existing conduit expansion couplers do not exist or are damaged during demolition, a new conduit expansion coupling approved by the Resident shall be installed to accommodate expansion and contraction of the bridge deck.

The Contractor shall field measure existing joint openings as required to determine the appropriate replacement joint seal. Gland seals shall be approved by the Resident before materials are ordered.

Shop drawings shall be submitted for approval for all replacement joints and joint systems. The Contractor shall construct the joint to the dimensions shown on the plans and as approved by the manufacturer.

The Contractor shall remove, stack, and reset all existing bridge rail and bridge rail posts that interfere with the installation of the specified joint modifications or replacements. Materials for bridge rail modifications, if required, shall conform to Section 507. The anchoring material for drilling and anchoring new anchor rods shall be selected from the MaineDOT Qualified Products List.

Where applicable, the Contractor shall cut a neat line for the substrate blackout per the dimensions indicated on the plans and standard details. The Contractor shall sand blast the substrate, blow it clean with dry oil-free compressed air, and thoroughly dry the substrate prior to placing joint material. Care shall be taken where reinforcing steel is uncovered not to damage the steel or its bond to the surrounding concrete. All existing reinforcing steel exposed by the joint and concrete removal shall be cleaned by sandblasting, or by other means approved by the Resident. Prior to casting the new concrete the Contractor shall apply a concrete bonding agent from the Department's Qualified Products List. Bonding grout meeting the requirements of Standard Specifications Subsection 518.02 may be substituted with the approval of the Resident.

All transverse reinforcing steel shall be continuous across the length of the joint. The Contractor shall provide approved reinforcing steel coupler bars at all construction joints. The Contractor shall install the joint or joint system according to the manufacturer's recommendations.

No loading shall be placed on new joint concrete until the concrete has reached the specified design strength.

New or replacement seals shall be installed full width in one piece.

The removal, adjustment, modification and replacement of bridge joints shall be done in a manner that accommodates maintenance of traffic requirements.

- Bridge Joint Modification Type 3 involves removing and replacing the existing cast-in-place or elastomeric header concrete, removing the existing gland seal, cleaning and sandblasting the joint extrusion, and installing a new gland seal. The limits of the elastomeric concrete work shall be the full deck width from curb to curb. The limits of the joint extrusion cleaning and sandblasting, and the new gland seal, shall be full deck width from curb to curb and into the curbs to the limit of the joint armor. The appropriately sized new gland seal, matching the existing joint extrusion, shall be from the Department's Qualified Products List. Steel repairs or modifications, if required, will be paid Time and Materials. The extrusions on the Type 3 joints may sit above or between the joint armor.

- Bridge Joint Modification Type 5 involves replacing the existing joint system full width, casting a slab over backwall joint and installing a mastic plug joint, including deck concrete, backwall concrete, deck and backwall curbs, and deck and backwall fascias. The limits of the joint replacement work shall be full deck width from curb to curb, the deck and backwall curbs, and the deck and backwall fascias. The mastic plug joint shall conform to Special Provision 520, Mastic Plug Joint.

Temporary Structures and Approaches

In work zones where the roadway is opened up to traffic during non-work hours the Contractor shall submit a plan how the roadway surfaces will be made acceptable for vehicular traffic if the joint is not complete the Contractor shall furnish and maintain the Temporary Roadway Plate at each bridge joint modification as shown in accordance with Special Provision 524 – Temporary Roadway Mat.

Method of Measurement

Bridge Joint Modification Types 3 and 5 will be measured by each unit, complete in place and accepted for the type(s) identified on the plans and described in this specification.

Removing, stacking, and resetting existing bridge rail or bridge rail posts that interfere with the installation of the specified joint modifications or replacements, and providing new anchor bolts or bridge rail hardware will not be measured separately, but shall be incidental to the relevant Bridge Joint Modification pay item.

The work required to satisfactorily complete the elastomeric concrete mock-ups will not be measured separately but shall be considered incidental to the related Contract Items.

Temporary Roadway Plate and approach pavement ramps will be measured separately and paid for under Temporary Roadway Mat pay item.

Basis of Payment

The accepted quantity of Bridge Joint Modification Types 3 and 5 will be paid for at the contract unit price per each. Payment will be full compensation for furnishing and installing all materials, labor, equipment, and incidentals necessary to complete the work, including removing, disposing, and installing structural concrete and steel; drilling and grouting; adjusting and cleaning existing joint materials and reinforcing steel; fabricating and installing new joint material and new seals including asphalt impregnated expansion board, backer rod and sealant; welding; phasing the joint installation; prepping and sealing raised curbs; salvaging existing electrical conduit; installing new conduit expansion couplings; removing and resetting bridge rail and bridge rail posts as required.

Traffic control devices used in conjunction with the temporary structures and approaches will be paid in accordance with the applicable Contract items.

Payment for the work required to satisfactorily complete the elastomeric concrete mock-ups will not be paid for separately but will be considered incidental to related Contract Items.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
520.243 Bridge Joint Modifications- Type 3	Each
520.245 Bridge Joint Modifications- Type 5	Each

SPECIAL PROVISION
SECTION 520
EXPANSION DEVICES
(Mastic Plug Joint)

Description

This work shall consist of preparing and infilling areas identified on modified deck and header concrete areas using hot pour mastic. The hot pour mastic shall be supplied in solid form in boxes containing pre-measured binder blended with aggregates. Products to be used will be subject to approval by the Department. Repair areas will be prepared for future asphaltic plug joints per the Plans and this Special Provision.

Preparation shall include placing and finishing the hot pour mastic plug joint.

Materials

The hot pour mastic materials are hot-applied, pourable, self-adhesive mastics blended with aggregates designed for maintenance and repair of asphalt and Portland cement concrete pavements. The hot pour mastic materials are composed of highly modified polymer asphalt binder and fine graded lightweight aggregate, or standard weight aggregates as required by the application.

The mastic materials shall be delivered in the manufacturer's original container. The material shall be pre-packaged with the manufacturers name and product name marked on each container. The materials shall conform to the following requirements:

<u>Parameter</u>	
Color	Black
Pourability @ 400F (PTM1)*	1000-1400 gm
Stability @ 158F (PTM2)	.6in. max
Flexibility @ Low Temperature (PTM3)	Pass @ -20F
Adhesion @77F (PTM4)	15psi min.
Specific Gravity (ASTM D792)	1.35max.
Skid Resistance, BPN (ASTM E303)	40 min.
Minimum Application Temperature	375°F
Maximum Application Temperature	410°F

The density of the mastic with standard weight aggregate is 116 pcf (+/- 3%) and the weight per gallon is 15.5 lbs/gal at 60°F. (ref: MasticOne or equivalent)

The backer rods shall be a cylindrical closed cell expanded polyethylene foam rods, with a diameter of 150 percent of joint opening width, capable of withstanding the temperature of the hot binder materials and meeting the manufacturer's requirements, or the following properties, whichever is more stringent:

PROPERTY	REQUIREMENT	TEST METHOD
Density, lb/ft ³	2.0 min.	ASTM D1622
Tensile Strength, psi	25.0 min	ASTM D1623
Water Absorption, % of wt.	1.0 max.	ASTM C509

Equipment

Equipment used in the performance of the work shall be subject to the Department's or authorized representative's approval and shall be maintained in a satisfactory working condition at all times.

(a) Air Compressor: Air compressors shall be portable and capable of furnishing not less than 4 yd³ of air per minute at not less than 90 psi pressure at the nozzle. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water.

(b) Sweeper: Manually operated, gas powered air-broom or self-propelled sweeper designed especially for use in cleaning pavements shall be used to remove debris, dirt, and dust from the cracks.

(c) Hot Air Lance: Should operate with propane and compressed air in combination at 2000°F - 3000°F, exit air heated at 1000 ft/s. The lance should draw propane from no smaller than a 100 lb tank using separate hoses for propane and air draw. The hoses shall be wrapped together with reflectorized wrap to keep them together and to protect workers in low light situations.

(d) Hand Tools: Shall consist of Boxed or V-shaped squeegee, brooms, shovels, metal bars with chisel shaped ends, and any other tools which may be satisfactorily used to accomplish this work.

(e) Melting Kettle: The unit used to heat the mastics shall be a double boiler unit equipped with continuous horizontal full sweep agitation and have separate thermostatic control devices that will automatically regulate hot oil and material temperature. Separate digital readouts shall display the temperatures of the hot oil and material. The kettle shall be equipped with mixing paddles, blending augers, or other satisfactory means of agitating, mixing, and blending the aggregates and mastic together. The kettle must be equipped with thermostatic control calibrated between 200°F and 550°F.

An application wand may be required for the work type, and shall apply a controlled flow of material via an insulated or heated hose. The nozzle shall distribute the material as called for in this specification. A pressure regulator shall be provided to regulate pressure at the nozzle. A bypass line into the holding tank is required for use when the nozzle is shut off.

Construction Requirements

Weather

Hot Pour Mastics shall not be applied on a wet or damp surface, or when the atmospheric temperature is below 45°F in a shaded area at the job site, or when weather conditions are otherwise unfavorable to proper mass installation of the hot pour mastic material.

Preparation

Hot pour mastic plug joint shall be filled with mastic pre-blended with standard weight aggregates.

All mastic materials shall be heated to between 380°F and 410°F and thoroughly agitated prior to application. A non-contact infrared thermometer shall be used periodically to monitor the temperature of the material as it exits the kettle. Material may not be used if it is heated beyond the safe heating temperature of 410°F, exceeds the recommended pot life, or is reheated more than one time.

The mastics may be applied to the hot pour mastic plug joint areas when the material has been heated to the lower end of the temperature range to minimize material flow and cooling time.

Mastics shall be applied to the hot pour mastic plug joint areas directly from the melting kettle chute, wand or other conveyance method filled from the kettle. If bucketed, material cooling during transfer must be minimized.

The hot pour mastic plug joint areas shall be filled flush to the pavement surface. The material shall be poured into the hot pour mastic plug joint areas and worked using boxed or v-shaped squeegees, tools, lutes or heated irons. Care should be taken not to over work the material and cause unequal dispersion of the aggregate within the hot pour mastic plug joint areas. The material may be applied in multiple lifts to accommodate material shrinkage or flow during cooling.

After the material has been applied to the hot pour mastic plug joint areas, indirect heating by torch or hot air lance can be used to heat the edges and ensure a watertight seal. Do not burn, scorch or ignite the mastic or adjoining pavement when heating.

Do not allow traffic on the hot pour mastic plug joint areas for ½ hour, or until the material has cooled enough to support traffic and tracking is minimal.

Quality of Work

Excess mastic shall be removed from the pavement by approved methods and discarded. Any work determined to be below normal acceptable standards will not be accepted, and will be corrected and/or replaced as directed by the Resident or authorized representative.

Method of Measurement

The accepted quantity of Mastic Plug Joint will not be measured for payment and will incidental to Item 520.245 Bridge Joint Modifications-Type 5.

SPECIAL PROVISION
SECTION 523
BEARINGS
(Clean and Seal Bearings)

This Specification is amended as follows:

523.01 Description This subsection is amended by the addition of the following:

The work shall also consist of cleaning existing steel bearing assemblies, masonry plates, sole plates and anchor rods to remove sand, debris, foreign materials, loosely adhered rust and protective coatings. The work shall also consist of removing all debris and other loosely adhered materials along the top of the abutments. Following the removal of these materials the Contractor shall thoroughly power rinse the bearing assemblies and abutment seats with clean water, allow the surfaces to dry completely, and apply a corrosion inhibitor to all exposed surfaces of the existing bearing assemblies in accordance with this specification.

523.095 Clean and Coat Bearing The following Subsection is added:

Each bearing shall be cleaned by removing rust, debris and other foreign materials, including loosely adhered lead paint from the exposed surfaces. The bearing surfaces shall be cleaned to an SSPC-SP2, SSPC-SP3, SSPC-SP7 or SSPC-SP-WJ4 surface finish. Jacking of the bearings or beam ends is prohibited.

Where required, removal of lead based paint shall be in accordance with Subsection 105.2, Health and Safety. The Contractor shall submit a lead based paint removal plan to the Resident for approval prior to the start of the work. Once each bearing is cleaned the Contractor shall power rinse the bearing assembly and apply two coats a corrosion preventative such as Fluid Film, manufactured by Eureka Chemical Company, or an approved equal, to all surfaces of the bearing assembly.

523.50 Method of Measurement The following sentences are added:

Clean and Seal Bearings will be measured for payment by each existing bearing assembly cleaned and sealed in accordance with the Plans and Specifications.

523.51 Basis of Payment The following paragraphs are added:

Clean and Seal Bearings will be paid for at the contract unit price each, which will be full compensation for all materials, equipment, labor and incidentals required to inspect, clean, and seal the existing bearings.

Payment will be made under:

Portland
WIN 23545.00
February 23, 2020

Pay Item

Pay Unit

523.312 Clean and Seal Bearings

Each

SPECIAL PROVISION
SECTION 524
TEMPORARY STRUCTURAL SUPPORTS
(Temporary Structural Support)

The following is added to Standard Specification Section 524:

524.01 Description

This work shall consist of designing, fabricating, erecting, maintaining, and dismantling temporary structural support wall(s) as required for the purpose of supporting partially excavated Roadway embankments or structures. Temporary Structural Supports shall include sheeting, shoring, bracing, or otherwise stabilizing any structures disturbed or partially removed as part of the Work. This work is separate from the work required to support the lateral slide operation in Special Provision 524, Temporary Structural Support, Abutments and Special Provision 524, Lateral Slide.

524.03 Design

The temporary structure and approaches shall achieve acceptable minimum factors of safety. Minimum factors of safety for slope stability are 1.3 for approach embankment slopes and 1.5 for embankment slopes that contain or support structures. The minimum factor of safety for sliding and overturning is 1.3.

The design for the Temporary Structural Support shall be submitted to the Resident at least 3 weeks prior to the start of Work.

524.05 Method of Measurement

Replace this subsection in its entirety with the following:

Temporary Structural Supports will be measured as one lump sum satisfactorily designed, installed, maintained, dismantled, and removed for the entire project. Installation and reinstallation of Temporary Structural Supports between construction phases, if required, will not be measured separately, but will be considered incidental to the Temporary Structural Support Pay Item. Any work associated with support, bracing, or otherwise stabilizing any structures disturbed or partially removed as part of the Work or with removal and reinstallation of existing highway appurtenances (e.g. guardrails, sign supports, etc.) to facilitate the erection of Temporary Structural Supports will not be measured for payment, but will be considered incidental to the Temporary Structural Support Pay Item.

524.06 Basis of Payment

Replace this subsection in its entirety with the following:

Portland
Interstate 295 over Veranda Street
WIN 021745.00
March 3, 2020

Temporary Structural Support will be paid for at the Contract lump sum price, which shall be full compensation for all materials, equipment, labor, and incidentals necessary for the design, installation, maintenance, dismantling, and removal of such supports in accordance with the Standard Specifications and as specified herein.

Payments will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
524.301 Temporary Structural Support	Lump Sum

SPECIAL PROVISION
SECTION 524
TEMPORARY STRUCTURAL SUPPORTS
(Bridge Movement System)
(Continuity Connection)

This section is deleted in its entirety and replaced with the following:

524.01 Description

This work shall consist of the designing, fabricating, erecting, maintaining, and dismantling of temporary structural support(s) as called for on the Contract Plans, all in conformity with these specifications. Temporary structural supports proposed by the Contractor to facilitate the work shall also conform to these specifications.

This work also includes providing a Bridge Movement System to move the proposed superstructure into its permanent position on the preconstructed substructures. The Contract Plans include details and requirements for completing the bridge move using a lateral slide system. Alternate Bridge Movement Systems meeting the performance criteria listed in Section 524.032, Design Criteria and Standards, may be submitted by the Contractor for approval.

The Bridge Movement System consists of designing, detailing, and furnishing all equipment (mechanical devices, jacks, tracks, lifting equipment, self-propelled modular transporters (SPMTs), and other components), calculating the forces required to move the bridge system, and overseeing and/or conducting test moves; the final bridge move; monitoring during bridge movement; and performing post-movement inspections and any necessary remedial actions. The work also includes the removal of temporary works following completion of the bridge move.

The work also includes providing structural continuity between the upper and lower portions of the abutment using a Continuity Connection. The Continuity Connection shall be as shown on the plans or shall be Contractor designed capable of satisfying the performance criteria listed in Section 524.032, Design Criteria and Standards.

The submittal of revised lateral slide details, alternate Bridge Movement Systems or alternate Continuity Connection Details shall be completed in accordance with this specification. All work required by the Contractor to develop and submit revised details or alternate concepts shall be incidental to the Bridge Movement System pay item.

524.02 Definitions

Bridge Movement System shall refer to all components (including but not exclusive of the mechanical devices, jacks, tracks, pumps, programmable logic controller (PLC) equipment, lifting

and moving equipment, and SPMTs) and processes (including but not exclusive of submittal preparation, pre-move survey, execution of the bridge move, monitoring of the bridge move, post-move inspections, and remedial actions if required) related to moving the proposed superstructure from the Temporary Falsework onto the permanent substructure units.

Temporary Falsework shall refer to Contract Pay Item “Temporary Structural Support, Abutments”. This includes all components of the structure erected adjacent to, or away from, the current bridge locations supporting all construction activities necessary to remove the existing bridge, or erect the complete superstructure, including but not exclusive of the bents, lateral bracing, foundations, work platforms, and all personnel safety systems.

Continuity Connection shall refer to the interim structural connection between the Upper Abutment and Lower Abutment. The connection shall be completed once the superstructure is moved into place, prior to allowing any vehicles or equipment on the bridge, and prior to ending the Closure Period. The Continuity Connection shall be capable of resisting dead and live loads until such time that final grouting is completed between the Upper Abutment and Lower Abutment. The Continuity Connection shall be as shown on the plans, or a contractor designed alternate approved by the Department.

Upper Abutment shall refer to the sliding portion of the abutment (top of breastwall and abutment seat) built off-alignment on the Temporary Falsework as shown on the plans. Where a lateral slide system, or other similar movement systems are used, the Upper Abutment is intended to be the sliding support for the decked steel girder superstructure of both bounds of the Interstate 295 over Veranda Street Bridge.

Lower Abutment shall refer to the fixed portion of the abutment (lower portion of breastwall, footing, and foundation elements) constructed under the existing structure in its final location.

524.03 Design Alternatives

Design submittals are not required for components of the Bridge Movement System and Continuity Connections detailed on the plans (e.g. slide shoe, slide keepers, elastomeric slide bearings and connection beams). Design submittals are required for components not detailed on the plans (e.g. jacking equipment, roller bearings, provisions for SPMTs, etc). The Contractor may submit modified and/or alternate systems for approval as follows:

524.031 Bridge Movement System

The Contract Plans provide design details and notes for moving the superstructure and Upper Abutments into place using lateral slide techniques. At the Contractor’s option, the lateral slide details may be modified, or alternate bridge movement systems may be submitted to the Department for approval. All revisions and alternate concepts shall be in accordance with Subsection 524.04, Design Criteria and Standards, and these specifications.

524.032 Continuity Connection

The Contract Plans provide design details and notes for providing the necessary Continuity Connection between the Upper and Lower Abutments. At the Contractor's option, alternate Continuity Connection designs may be submitted to the Department for approval. All revisions and alternate concepts shall be in accordance with Subsection 524.04, Design Criteria and Standards, and these specifications.

Alternate details that involve the complete elimination of the interim Continuity Connection between the upper and lower abutments, and movement of the bridge superstructure without the Upper Abutments attached, will not require an engineering design submission by the Contractor provided the following requirements are met:

1. Bridge seat elevations are lowered by no more than one foot to clear the underside of existing girders, allow for finishing of bearing pedestals, and allow for reasonable clearances and protection of concrete surfaces to remain during existing bridge demolition.
2. The vertical abutment reinforcing pattern present in the Lower Abutment directly below the seat elevation is extended vertically to within two inches of the bridge seat elevation.
3. Backwall height shall be adjusted as required based on the revised abutment seat elevations.
4. Bearing bolsters of not more than 12" in height are provided to maintain the appropriate superstructure elevation. The bearing bolsters shall be constructed of web, flange and bearing stiffener plates matching the same type, grade and finish as the bridge girders. The backwall side of the bolsters shall be vertical and flush with the girder ends, the opposing end shall be tapered at a slope of 1H:2V. Bolsters shall be bolted to the girders with a minimum of eight $\frac{3}{4}$ " high strength bolts.
5. Working and fabrication drawings are provided that document revised abutment and superstructure geometry including: seat elevations; bearing bolster dimensions and fabrication details; revised bottom of backwall elevations; all other geometric revisions necessary to support modified backwall depth.

524.04 Design Criteria and Standards

If the Contractor elects to use the Bridge Movement System and Continuity Connection as shown on the Plans the Contractor shall be responsible only for the design and detailing of the portions of the system not shown on the plans.

If the Contractor elects to modify the Bridge Movement system or Continuity Connection the Contractor shall be responsible for all aspects of engineering, design and detailing of the alternate systems, except as provided in Subsection 524.032, Continuity Connection.

All design necessary for the project shall be carried out in accordance with the following requirements, these specifications, with consideration given to the adjoining design components, all applied forces, and the Department's desire to construct a bridge capable of achieving a 100-year design life.

524.041 Bridge Movement System

Components of the proposed bridge movement system not shown on the plans, and all temporary components of alternate bridge movement systems, shall be designed in accordance with the following design specifications:

1. *MaineDOT Bridge Design Guide*, 2008 edition with all revisions thereto, and *AASHTO LRFD Bridge Design Specifications* (current edition), with MaineDOT's modified Strength I loading, for any modifications to permanent bridge components detailed on the plans necessary to accommodate the Contractors proposed Bridge Movement System.
2. *AASHTO LRFD Bridge Design Specification* (current edition) for all structural components of the Bridge Movement system. Appropriate impact factors shall be applied to account for dynamic loading, racking and jamming forces that may occur during the bridge move.
3. *AASHTO Guide Design Specifications for Bridge Temporary Works* (2008 Interim).
4. For systems and components not addressed by the above documents, the Contractor shall submit an RFI with proposed design specifications for review by the Department prior to the development of designs or submittal documents.

The proposed Bridge Movement System shall be designed and detailed to satisfy the following minimum performance criteria:

1. Allows the southbound and northbound structure to be moved together, or separately, as complete units (girders, deck, and barrier systems completed and in place).
2. Allows for the bridge to be safely and reliably moved into place within the allotted Interstate Closure Period, and in conformance with Section 107, Time and Section 652, Maintenance of Traffic.
3. Allows for successful completion of the work considering a range of environmental conditions including, but not limited to, temperature variations, precipitation and wind.
4. Allows the Contractor to control the speed and direction of the bridge move, including the ability to reverse direction, and the ability to resolve racking or jamming.

5. Provides for reasonable redundancy such that the failure of one component does not result in failure of the entire system. If this requirement cannot be met the Contractor shall provide contingency planning acceptable to the Department.
6. Minimizes racking, twisting or otherwise deforming the structure in a manner that could induce cracking, deterioration or damage during movement.
7. Provides support to all girder lines before, during and after the move.
8. Capable of achieving final in-place tolerances outlined in Subsection 524.085, Tolerances.
9. Addresses the need to provide global structural stability, whether by providing temporary fixity between the upper abutments and the superstructure during a lateral slide, or by providing a stable system relevant to a Contractor determined bridge movement method.
10. Capable of safely moving a superstructure with an approximate weight of 920 kips per superstructure (1,840 kips for northbound and southbound superstructures), and upper abutment sections with an approximate weight of 450 kips each. The as-built weight shall be established by the Contractor.
11. System can be fabricated, delivered and installed within the specified contract dates.
12. In the opinion of the Department, does not present excessive risk, or result in damage to, surrounding infrastructure and the new bridge.
13. Does not require components, anchorages, post tensioning, or other elements that project beyond the top or roadside face of the finished bridge abutment. Does not degrade the finished appearance or aesthetics of the completed structure.
14. All permanent structural steel and high strength carbon steel rods shall have a minimum clear cover of four inches. A clear cover of not less than two inches is acceptable provided the components are hot dip galvanized. All concrete reinforcing with less than four inches of clear cover shall be stainless steel.

524.042 Continuity Connection

Alternate Continuity Connections, or proposed modifications to the continuity connections shown on the plans, shall be designed in accordance with the following design specifications:

1. *MaineDOT Bridge Design Guide*, 2008 edition with all revisions thereto.
2. *AASHTO LRFD Bridge Design Specifications* (current edition), with MaineDOT's modified Strength I loading, for any modifications to permanent bridge components

detailed on the plans necessary to accommodate the Contractors proposed Bridge Movement System.

The proposed alternate Continuity Connection, or any proposed modifications to the Continuity Connection as shown on the plans, shall be designed and detailed to satisfy the following minimum performance criteria:

1. Satisfactorily accommodates the factored Strength I demands provided below at each abutment, and along the full length of each abutment (exclusive of wingwalls). These demands are based on the continuity connection located at the elevation shown on the plans and with continuity provided uniformly along the length of the abutment. Revising the elevation of the continuity connection, or providing connections at a series of discrete locations, will be subject to the Department's approval. If any such changes are proposed and accepted, revised demands will be provided by the Department for use in the Contractor's design submittal.
 - a. Horizontal shear applied parallel to the abutment centerline: 4.0 kips/ft
 - b. Horizontal shear applied transverse to the abutment centerline: 4.0 kips/ft
 - c. Moment about the weak axis of the abutment stem: 33 kip-ft/ft
 - d. Vertical reaction: 40 kips/ft
2. Allows for the continuity connection to be safely and reliably completed prior to reopening the bridge to traffic within the allotted Interstate Closure Period, and in conformance with Section 107, Time and Section 652, Maintenance of Traffic.
3. Accommodates variations in horizontal and vertical alignment resulting from fabrication, construction and bridge movement tolerances.
4. Provides support along the full length of the joint between the upper and lower abutments.
5. Provides vertical, horizontal, and rotational fixity between the upper and lower abutments.
6. Capable of accommodating the final in-place tolerances outlined in Subsection 524.085, Tolerances.
7. Can be constructed and anchored within the proposed structure without changing the overall length, width or thickness of the abutment, backwalls, wingwalls, superstructure or approach slab.
8. Provides fixity while located on temporary supports as required to maintain stability of the proposed superstructure and upper abutments during construction.
9. Can be fabricated, delivered and installed within the specified contract dates.

15. Does not require components, anchorages, post tensioning, or other elements that project beyond the top or roadside face of the finished bridge abutment. Does not degrade the finished appearance or aesthetics of the completed structure.
16. All permanent structural steel and high strength carbon steel rods shall have a minimum clear cover of four inches. A clear cover of not less than two inches is acceptable provided the components are hot dip galvanized. All concrete reinforcing with less than four inches of clear cover shall be stainless steel.

524.05 Materials and Equipment

Materials used may be steel, concrete, or a combination of both materials, at the Contractor's option, and, whether new or used, shall be sound and of adequate cross section for the intended loads. Blocking needed below the temporary supports to accommodate differences in elevation, and/or pads required to distribute loads to the soil may additionally incorporate plain and reinforced concrete or structural timber.

The Contractor shall retain qualified suppliers for all devices and equipment used to push, pull, lift or otherwise propel the Bridge Movement System. Qualified suppliers shall have a minimum of 10 years of experience in manufacturing and/or programming the materials and equipment used to complete the bridge move. The Contractor shall submit experience and qualifications for review. Proprietary systems may be used in lieu of constructing a new system specific to this project provided all components of the proprietary system have certifications and current calibrations indicating the equipment is sufficient for the needs of this project.

The Contractor shall use materials for the project that are of satisfactory quality, from sources approved by the Department, capable of sustaining the loads and stresses required. The Department reserves the right to reject any material or equipment considered unsuitable or unsatisfactory. The Contractor is required to provide satisfactory material and equipment at no additional expense to the Department.

524.06 Prequalification

The Contractor or the Specialty Subcontractor responsible for developing and operating the Bridge Movement System shall submit documentation of previous experience on moves of a similar scale. The Contractor shall also submit qualifications and prior experience in the use of the specific systems and controls proposed for use for the Department's review and approval.

Where alternate Continuity Connections are proposed that involve non-conventional materials and connections, the Contractor or the Specialty Subcontractor responsible for completing the work shall submit documentation of previous experience in performing similar work, and their use of the systems and controls proposed to complete the Continuity Connection, on similar projects for the Department's review and approval. Non-conventional materials are defined as materials

other than structural steel, reinforcing steel, high-strength steel rods, Portland cement grout, Portland cement concrete, and anchoring adhesive. Non-conventional connections are defined as connections that use components other than high-strength bolts, structural welding, and reinforcing steel.

524.07 Submittals

The Contractor shall submit a Bridge Movement Plan (Subsection 524.071), a Geometry Control Plan (Subsection 524.072) and, if design revisions are proposed, a Continuity Connection Plan (Subsection 524.073). These Plans shall be considered Working Drawings and will be reviewed in accordance with the applicable requirements of Section 105.7, unless otherwise described below. The Contractor is responsible for coordinating all planned activities and submittals to ensure consistency and agreement between the documents. In general, the submittals shall specify all materials, details, and procedures related to the work.

All plans, drawings, and calculations for systems and components not detailed on the Contract Plans shall be stamped by a Professional Engineer licensed in the State of Maine. Additionally, drawings and/or calculations pertaining to the bridge movement system and associated components shall be stamped by an Engineer with significant experience in the design of comparable movement systems.

524.072 Bridge Movement System Plan

The Contractor is not required to develop design plans and calculations for the lateral slide components and continuity connections constructed as detailed on the plans, including: upper and lower abutments and reinforcing design, slide shoe assembly, slide keeper assemblies, connection beam assemblies, continuity connections, associated anchorages and bolted connections, and elastomeric slide bearings. However, fabrication drawings for the individual components are required in accordance with Section 105.7 Working Drawings.

The Contractor shall provide a detailed Bridge Movement System clearly describing the design, construction and operations of the components designed by the Contractor. The Plan shall include, but not necessarily be limited to: procedures for completing the bridge move; post-move inspections; and remedial/contingency actions to address items such as wracking or jamming of the structure during the move, final tolerance adjustments, and potential equipment failures. Procedures shall include checklists to support the activities prior to, during, and after the bridge superstructure has been moved to its final location. Procedures shall also be provided for making necessary adjustments to meet final placement tolerances and to allow for final fit-up of the proposed Continuity Connections.

Design calculations, working drawings, and product data shall be developed by the Contractor, following established QA/QC procedures, for all components of the lateral slide system not detailed on the plans, or for all components of alternate Bridge Movement Systems proposed by

the Contractor. The working drawings will clearly indicate the distance the superstructure is to be moved, provide type and grade for all materials, calculating slide forces including deriving accurate weights of the superstructure to be moved, establishing the anticipated maximum coefficient of friction between sliding points, show the forces required to move the bridge, provide relevant capacities and limitations of the proposed Bridge Movement System, show all push/pull/lift locations, and identify all locations of temporary bracing or supports. The submittal shall also show details of the proposed movement system including, but not exclusive of, the jacks, hoists, tracks, pumps, programmable logic controllers, schematic hydraulic or strand layouts, SPMTs and other equipment and materials used to move the bridge superstructure from the temporary supports into its final location.

The design and detailing of any components to be attached to the permanent bridge structure, except for those components detailed on the plans, shall be designed by the Contractor's Engineer. The Contractor's Engineer shall sign, seal, submit, and take responsibility for, all modifications to the permanent superstructure.

The plan shall also include procedures for remedial actions to take place during the slide. The plan shall address corrective actions for items including, but not limited to: failure of critical bridge movement components; procedures for addressing geometry irregularities that result in binding during the bridge move; misalignment of post slide connections (Continuity Connections and approach slab connections); and procedures for addressing out of tolerance geometry after completion of the slide.

The plan shall also include a pre-move check list and all necessary information for coordination and preparation purposes.

The Bridge Movement Plan shall be submitted to the Department for review at least 60 days prior to performing the bridge move.

The Contractor's Engineer will provide repair procedures for any damage or cracking to the permanent bridge components (substructure and/or superstructure) resulting from moving the bridge superstructure, if required.

524.073 Geometry Control Plan

A Geometry Control Plan shall be submitted that describes the Contractor's means and methods for establishing, monitoring and maintaining horizontal and vertical control of the structure during the bridge move. Control points shall be provided at the temporary supports and at the final bridge location. Survey control points and benchmarks shall be established as necessary but, at a minimum, control points shall be provided at the four corners of the structure. The Contractor shall also establish transverse and longitudinal reference lines (e.g., centerlines of bearings and offsets from fixed surfaces) for aligning the structural components. The Contractor

shall monitor these reference points during the slide to ensure bridge movement is occurring as anticipated, and to limit racking.

Prior to commencing construction of the Temporary Falsework, the Contractor shall submit the proposed method of geometry control to the Department for review and concurrence. The submittal shall contain, but is not necessarily limited to, items such as:

1. Relevant details of any Temporary Supports and Bridge Movement System.
2. The location and expected values of geometry control reference points on the superstructure, temporary supports, and on the upper and lower abutments as applicable.
3. Measuring equipment and procedures for real-time monitoring of bridge movement, including the ability to monitor for twisting/racking of the structure. Monitoring shall be completed prior to the move, frequently during the move, and after the move.
4. Lateral, longitudinal, and vertical location reference points on the portion of the bridge to be moved that correspond to, or can be referenced to, appropriate lateral and longitudinal reference points at the final bridge location.
5. Proposed methods for monitoring bridge geometry during the move and for maintaining geometry control.

The Geometry Control Plan may be completed as two separate submittals. The first submittal shall be made at least 30 days prior to beginning construction of the Temporary Falsework, as described in Special Provision 524, Temporary Supports - Abutments. The submittal shall be complete excluding procedures for monitoring geometry during the slide.

The second submittal shall be made at least 60 calendar days prior to performing the lateral slide. This submittal shall include procedures for monitoring movement during the slide and shall include updates to the original submittal based on field measurements prior to preparing for the lateral slide.

524.074 Continuity Connection

Design calculations, working drawings, and product data shall be developed by the Contractor's Engineer, following established QA/QC procedures, for all components of any alternate Continuity Connections proposed by the Contractor. The submittal shall clearly describe the design approach and analysis, relevant components, design details, and associated modifications to the remaining portions of the structure.

Modified or alternate Continuity Connection details be submitted to the Department for review at least 60 days prior to performing the lateral slide.

524.08 Construction Requirements

The Contractor shall provide standby materials and equipment to replace or quickly repair malfunctioning or failed components and/or equipment during the bridge move.

524.081 Preparation for Bridge Move

The Contractor has overall responsibility for the construction of temporary supports and the bridge movement system in accordance with the approved Working Drawings and procedures. This effort shall include the following:

1. Conduct a pre-move meeting with the Department and Contractor's staff to review procedures, protocols, roles and responsibilities, and to establish communication protocols.
2. Conduct a pre-move survey at least 7 days prior to the closure weekend and make necessary geometric adjustments to accommodate the final structure geometry.
3. Complete pre-move checklists to confirm all equipment and monitoring devices function appropriately.
4. Implement temporary fixity connection between the bridge bearings and the Upper Abutment in accordance with the requirements and limitations outlined in these Contract Documents, or provide similar provisions to ensure global stability for alternative bridge movement methods.
5. Commence monitoring and geometry control procedures. Commence bridge move.
6. Implement contingency actions in the event of an equipment breakdown, malfunction, or other irregularities.
7. Complete continuity connections.
8. Remove any temporary fixity connections necessary for global stability during the bridge movement in accordance with the requirements and limitations outlined in these Contract Documents.
9. The Contractor shall reopen roadways only after approval to do so is received from the Resident.

524.082 Upper Abutment to Superstructure Connection

The lateral slide concept and details shown on the Contract Plans require fixity changes prior to completing the slide. This work is included in the Bridge Movement System Pay Item. No more than 12 hours before the lateral slide, and when there is an anticipated air temperature change of less than 20 degrees Fahrenheit from the current air temperature to the air temperature during the lateral slide, the bridge bearings shall be changed from their Final Configuration to their Rotationally Fixed Temporary Configuration as detailed on the Construction Plans. After the bridge bearings are in the Rotationally Fixed Temporary Configuration, the fixed connection between the Upper Abutment and the Temporary Falsework can be freed. After completing the slide operation and creating a moment fixity connection for the Upper Abutment, the bridge bearings shall be returned to the Normal Configuration.

524.083 Test Move

The Contractor is required to perform a test move following approved procedures in the Working Drawings. This test move shall occur a minimum of 5 days, but not more than 20 days, prior to moving the bridge into its final position. The test move shall move the structure a minimum of 10 feet to test the performance of the movement system, then return it back to its original position. All fixity changes necessary for global stability of the superstructure during the bridge move shall be reset after completion of the test move.

524.084 Movement of Superstructure

The intent during movement is to ensure that the structure is delivered to the Department, in its final location, with no damage or adverse loss of strength, loss of performance, or loss of long-term durability. To this end, it is necessary to place certain limitations upon characteristics that can be quantified and observed or checked by careful observations or by using suitable detection methods during these operations. Any damages to the permanent structure caused by the move after the bridge is in its final position shall be repaired at no cost to the Department.

The Contractor shall keep records of observations and operations during the bridge move. Submit all records to the Resident. Notify Resident in event of errors and submit proposals for corrective adjustments or modifications to any of the permanent structure or components to the Resident for approval prior to their implementation.

524.085 Tolerances

The following tolerances shall apply to components of the continuity connection and to the final slid location of the bridge:

1. Slide Keepers and Connection Beams shall be placed to within 1/8" of the location specified on the plans, unless otherwise modified in an approved Contractor submittal.

2. The final horizontal location of the four outside corners of the upper abutments shall be within 1" of their specified locations.

524.09 Method of Measurement

Bridge Movement System, as described herein, will be measured for payment as one lump sum.

Continuity Connection will not be measured for payment separately, but shall be incidental to the Bridge Movement System Pay Item.

524.10 Basis of Payment

Bridge Movement System will be paid for at the contact lump sum price, which price shall be full compensation for all submittals, labor, materials, equipment, incidentals and adjustments necessary to complete the work as described herein, including the Continuity Connections.

Payment will be made under:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
524.302	Bridge Movement System	Lump Sum

SPECIAL PROVISION
SECTION 524
TEMPORARY STRUCTURAL SUPPORTS
(Temporary Structural Supports, Abutments)

This section is deleted in its entirety and replaced with the following:

524.01 Description

This work shall include designing, fabricating, erecting, maintaining, and dismantling of temporary structural supports and ancillary components necessary to complete construction of the upper portion of the proposed bridge prior to moving the structure into its final location.

524.02 Definitions

Temporary Falsework shall refer to Contract Pay Item “Temporary Structural Support, Abutments”. This includes all components of the structure erected adjacent to, or away from, the current bridge locations supporting all construction activities necessary to remove the existing bridge, or erect the complete superstructure, including but not exclusive of the bents, lateral bracing, foundations, work platforms, and all personnel safety systems.

Bridge Movement System shall refer to all components (including but not exclusive of the mechanical devices, jacks, tracks, pumps, programmable logic controller (PLC) equipment, lifting and moving equipment, and SPMTs) and processes (including but not exclusive of submittal preparation, pre-move survey, execution of the bridge move, monitoring of the bridge move, post-move inspections, and remedial actions if required) related to moving the proposed superstructure from the Temporary Falsework onto the permanent substructure units.

Continuity Connection shall refer to the interim structural connection between the Upper Abutment and Lower Abutment. The connection shall be completed once the superstructure is moved into place, prior to allowing any vehicles or equipment on the bridge, and prior to ending the Closure Period. The Continuity Connection shall be capable of resisting dead and live loads until such time that final grouting is completed between the Upper Abutment and Lower Abutment. The Continuity Connection shall be as shown on the plans, or a contractor designed alternate approved by the Department.

Upper Abutment shall refer to the sliding portion of the abutment (top of breastwall and abutment seat) built off-alignment on the Temporary Falsework as shown on the plans. Where a lateral slide system, or other similar movement systems are used, the Upper Abutment is intended to be the sliding support for the decked steel girder superstructure of both bounds of the Interstate 295 over Veranda Street Bridge.

Lower Abutment shall refer to the fixed portion of the abutment (lower portion of breastwall, footing, and foundation elements) constructed under the existing structure in its final location.

524.03 Materials

Materials used may be either sawn timber or steel, or a combination of both, at the Contractor's option, and, whether new or used, shall be sound and of adequate cross section for the intended loads. Blocking needed below the temporary supports to accommodate differences in elevation, and/or pads required to distribute loads to the soil may additionally incorporate plain and reinforced concrete.

Concrete and reinforcing steel shall be in accordance with Sections 502 and 503 respectively. Steel and hardware shall be in accordance with Section 504. Used materials will be allowed, as approved by the Department, except that all materials permanently attached to the structure shall be new.

If the Contractor proposes to construct the Temporary Falsework with used materials, the Contractor's Professional Engineer shall submit with the plans the method for documenting that all primary member materials meet the physical properties required by the design. In the absence of record plans, mill certifications, or other valid documentation for the used materials, physical material testing approved by the Department shall be performed. Proprietary structures are excluded from this Specifications.

All welding required for the fabrication of temporary steel structures shall be performed in accordance with the provisions of Section 504. The Department reserves the right to perform in-process fabrication inspection. The Contractor shall notify the Department of the fabrication schedule 7 calendar days prior to commencement of fabrication.

524.04 Design

Temporary falsework shall be designed to support all vertical and horizontal loading including live load, impact, differential settlement forces, horizontal and longitudinal forces, and shall account for any temporary unbalanced loading due to jacking forces and other loading during load transfer or bridge movement operations. Sufficient redundancy shall be designed into the support structure so that failure of one member will not cause the collapse of the entire system and the supported structure.

Temporary supports which are adjacent to traveled ways or which support structures carrying traffic, shall additionally be designed to resist any vibration or impact forces due to traffic and shall incorporate sufficient protection against impact by errant vehicles.

Temporary falsework shall be designed by a licensed Professional Engineer in the State of Maine. All plans, computations, pile driving criteria, and necessary Working Drawings shall be

developed following established QA/QC procedures. The Working Drawings shall be signed and sealed by that Engineer, and shall be submitted to the Resident for approval.

All components of the temporary falsework shall be designed in accordance with the following design specifications:

1. *MaineDOT Bridge Design Guide*, 2008 edition with all revisions thereto.
2. *AASHTO LRFD Bridge Design Specification* (current edition)
3. *AASHTO LRFD Bridge Construction Specifications* (current edition).
4. Driven piles shall be designed with the appropriate load and resistance factors and performance factors based on AASHTO specifications and the chosen test method for evaluating subsurface conditions. If static or dynamic testing is required to achieve the structural capacity in the supporting calculations, the Contractor is responsible for performing the appropriate test in accordance with Section 501. Documentation shall be provided to the Department for review and approval.
5. Where the above specifications do not provide applicable standards, the requirements of the *AASHTO Guide Design Specifications for Bridge Temporary Works* (2008 Interim) shall apply.
6. For systems and components not addressed by the above documents the Contractor submit an RFI with proposed design specifications for review by the Department prior to the development of designs or submittal documents.

524.05 Submittals

Working Drawings for the temporary falsework shall be prepared in accordance with Section 105.7 and submitted to the Department for review at least 30 days prior to the beginning of falsework erection. Drawings and calculations shall be stamped by a Professional Engineer licensed in the State of Maine. Working Drawings and calculations for all Geotechnical Engineering work necessary for the temporary falsework shall be prepared and sealed by a Professional Engineer licensed in the State of Maine, with appropriate, demonstrated knowledge and experience in the design, use, and operation of these types of systems and structures.

The Contractor is responsible for coordinating all planned activities and submittals. In general, Working Drawings shall specify all materials, details, and procedures related to the construction and implementation of the proposed temporary falsework. The Contractor shall use materials for the project that are of satisfactory quality, from sources approved by the Department, and that must be capable of sustaining the loads and stresses required. The Department reserves the right to reject any material considered unsuitable or unsatisfactory.

Working Drawings shall include site plans and details showing the bridge staging area, including the location and general layout of the site, with existing, temporary, and permanent structures indicated.

The Contractor shall not deviate from the accepted Working Drawings and procedures unless authorized by the Department in writing. The Contractor must have approved Working Drawings prior to the erection of the temporary falsework.

The Contractor shall design any modifications to the permanent bridge details and/or bridge materials indicated on the Contract Plans as may be needed. All modifications shall be supported by plans and calculations that are sealed by the Contractor's Structural Engineer or Geotechnical Engineer, as appropriate.

524.051 Geotechnical

The Contractor's Geotechnical Engineer shall verify that the location of the proposed Temporary Falsework is suitable for all proposed construction operations and shall develop/design methods to stabilize all excavations and to support temporary falsework as required. Working drawings shall include design and details for all temporary foundation systems, and calculations demonstrating the temporary foundation's anticipated settlements and details for adjusting for differential settlements between the temporary and permanent foundations.

524.052 Structural Design

Working Drawings shall be provided, along with all supported calculations, for all temporary structural supports showing the location and details of temporary bents used to support the construction activities for the permanent superstructure. This shall include bents, bracing, foundations, work platforms, personnel safety details, and support of the sliding track or other Bridge Movement System components. The Contractor's Working Drawings shall indicate the type and grade for all materials, provide calculations and details for methods used to stabilize excavations, and take responsibility for the overall design; engineering; and construction of temporary support structures.

If attachment of the temporary falsework to the permanent bridge substructure is required for any reason (i.e., strength or stability of frames or moving systems), the Contractor shall submit calculations and details for any proposed attachments/modifications to the Department for approval. Any attachments to the proposed structure shall be temporary and the proposed structure shall be repaired to have no permanent visual impact from the attachments after completion of the bridge move

The Upper Abutment and Temporary Falsework shall be designed to provide a temporary fixed connection between the two components. The Upper Abutment connection shall remain fixed to

the Temporary Falsework during all construction operations of the Upper Abutment, construction of the superstructure, until immediately prior to the bridge move.

524.06 Construction Requirements

All fabrication shall conform to the *AASHTO Standard Specifications for Highway Bridges, Division II*, or *AASHTO LRFD Bridge Construction Specifications*, except as modified herein. Fabrication shall be performed by an AISC Category III-Certified Fabricator.

The erection of temporary support(s) shall be in strict conformance with the approved design and details and shall use only the materials approved for use. No loads shall be placed on the temporary support(s) until the Contractor's Professional Engineer has provided written certification to the Resident that the system was erected in conformance with the approved plans and design details. The consent of the Department regarding design, construction or use of temporary supports shall not be construed, in any way, as relieving the Contractor of its responsibility to provide supports that are adequately designed and constructed to carry the loads that will be placed upon them. The work shall be entirely at the Contractor's risk. Upon completing the work requiring the use of the temporary structural supports, the temporary support structures shall be removed and the area under and around them shall be restored to its original condition.

524.07 Method of Measurement

Temporary Structural Support, Abutments, shall be measured for payment as one lump sum satisfactorily designed, erected, and dismantled. The work associated with removal and reinstallation of existing highway appurtenances (e.g. guardrails, sign supports, etc.) to facilitate the erection of temporary supports will not be measured for payment, but will be considered incidental to the Temporary Structural Support, Abutments Pay Item.

524.07 Basis of Payment

Temporary Structural Support, Abutments, will be paid for at the contract lump sum price, which price shall be full compensation for all materials, equipment, labor and incidentals necessary for the design, erection, maintenance and dismantling of such supports in accordance with these specifications.

Payment will be made under:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
524.303	Temporary Structural Support, Abutments	Lump Sum

SPECIAL PROVISION
SECTION 524
TEMPORARY STRUCTURAL SUPPORTS
(Protective Shield)

524.01 Description The following paragraph is added:

This work shall also consist of furnishing all labor, equipment and materials required to provide protection for the public during construction. This protection shall include, but not necessarily be limited to, installation of temporary deck support over roadway lanes and shoulders on all new bridge structures.

The following Subsections are added:

524.031 Protective Shielding Design

Prior to the start of work, the Contractor shall submit plans for review and comment indicating the sizes and dimensions of protective shield. The proposed methods of protective shielding, including connections and fasteners, shall be in accordance with the following criteria:

The protective shield shall be designed for safely supporting all construction and dead loads, but not less than 100 pounds per square foot with a load duration of seven (7) days. Protective shield shall be stiff enough to limit deflection to 1/2 inch under maximum loads and to be tightly sealed at all joints. The protective shield shall be placed on the tops of the bottom flanges of the steel girders with edges and laps made tight to protect motorists from dust, debris and falling objects. The protective shield designed by a Professional Engineer licensed in the State of Maine.

524.041 Protective Shielding Erection and Removal

No portion of the protective shield installed over a roadway shall project below a plane connecting the bottoms of the bottom flanges of the steel girders.

The protective shielding shall extend horizontally three feet beyond fascia lines horizontally and vertically to a point one foot minimum above the top of the rail or parapet. Shielding shall extend 10 feet beyond the edge of pavement or as approved by the Resident.

Shielding shall also be approved and installed prior to the start of any deck forming and shall remain in position during all deck work. The shielding shall be relocated or removed only as approved by the Resident.

524.05 Method of Measurement The following paragraph is added:

Protective Shielding will be measured by the lump sum for shielding, designed, installed, removed, and disposed.

524.06 Basis of Payment The following paragraph is added:

Protective Shielding will be paid for at the Contract lump sum price. Payment shall be full compensation for all materials, equipment, labor, and incidentals including but not necessarily limited to: Working Drawings; design; transportation and stacking; installation; any removal, onsite storage, and reinstallation as required for phasing; and other materials necessary to perform the work as in accordance with the Plans and these Specifications or as approved by the Resident.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
524.40	Protective Shield	Lump Sum

SPECIAL PROVISION
SECTION 524
TEMPORARY STRUCTURAL SUPPORTS
(Temporary Roadway Mat)

524.01 Description

The following paragraph is added:

The Contractor shall furnish and maintain a Temporary Roadway Plate and associated temporary pavement approaches at each bridge joint modification, or deck and backwall repair area, where the Contractor cannot complete the work in the allotted lane closure window and must open the roadway up to traffic curb to curb every day. The Temporary Roadway Plate shall be as shown on the Plans, or as submitted by the Contractor and approved by the Resident. The Temporary Roadway Plate includes the installation of temporary bituminous pavement ramps as shown on the plans and shall be installed full width across the shoulder and/ or travel lane where the bridge joint modification, or deck and backwall repair area cannot be completed. The Temporary Roadway Plate shall remain in place until the work is completed and traffic can traverse the repaired area without damage to the new work.

524.02 Materials

The first paragraph is revised to read as follows:

Materials used for the Temporary Roadway Plate and approaches shall be as shown on the Plans and specified in this Specification; or shall conform to the detailed plans and specifications submitted by the Contractor.

524.03 Design

The first paragraph is deleted and replaced with the following:

If the Contractor proposes to furnish and maintain the Temporary Roadway Plate at a bridge joint modification, or deck and backwall repair area, that differs from the design shown on the Plans, the Contractor shall submit design calculations and drawings for the Temporary Roadway Plate. The Temporary Roadway Plate shall be designed in accordance with current AASHTO LRFD Bridge Design Specification, except as noted herein, to meet live load requirements for an HL-93 loading. All computations, drawings, plans and other materials submitted for review and approval shall be stamped by a Professional Engineer licensed in the State of Maine.

The Department shall have no obligation to review or comment on any design, construction, maintenance or removal of Temporary Roadway Plate and approaches. No review or comment by the Department, or any lack of review or comment by the Department, shall relieve the Contractor of its responsibility to properly design, construct, maintain in good condition, and

remove the Temporary Roadway Plate and approaches in accordance with the Contract, nor shall no review or comment by the Department, or any lack of review or comment by the Department shift any responsibility to the Department. The Contractor shall be responsible for all damages resulting from the failure of Temporary Roadway Plate and approaches.

524.04 Erection and Removal

The following paragraphs are added:

The Temporary Roadway Plate shall be fastened or anchored so that all contact surfaces with adjacent supporting members bear continuously. Immediate corrective action shall be taken by the Contractor to remedy any condition in the structure that results in objectionable or distracting noise levels, or results in the decking becoming loose, when subject to traffic loads.

The Contractor shall be responsible for maintenance. Should any part, or all, of the Temporary Roadway Plate and approaches be damaged or destroyed by any cause, prior to, or after, opening the temporary structures and approaches to traffic, it shall be repaired or replaced by the Contractor without additional compensation.

The Contractor shall remove all Temporary Roadway Plate and approaches entirely at the end of the project. Pavement removal shall be by scraping or micro-milling. Removal limits shall be to the surface of the pavement platforms installed by the Contractor.

The slope on the approach and departure pavement ramps shall be no steeper than 135H:1V.

The temporary approach pavement shall meet the requirements of Special Provision 461 and shall be maintained in a compacted and smooth condition.

524.05 Method of Measurement

The following paragraphs are added:

Temporary Roadway Plate and associated approaches will be measured by each abutment location where the installation of a Temporary Roadway Plate is required.

The installation and removal of the temporary bituminous pavement ramps will not be measured separately but shall be incidental to the Temporary Roadway Plate pay item.

524.06 Basis of Payment

The following paragraphs are added:

The Temporary Roadway Plate will be paid for at the contract unit price each, which price shall be full compensation for the respective items as shown on the Plans, or as called for in these specifications, designed, constructed, maintained, and completely removed.

Pay Item

Pay Unit

524.50 Temporary Roadway Mat

Each

SPECIAL PROVISION
SECTION 526
CONCRETE BARRIER

(Temporary Concrete Barrier, Type I - Retain by Dept in place)

Section 526 of the Standard Specification is amended by addition of the following;

526.01 Description The following paragraph is added:

Temporary Concrete Barrier, Type I - Retain by Dept in place: Double faced removeable concrete barrier of the shape shown on the Plans to remain after contract completion. All barrier shall be new, or in like-new condition. The requirements of Temporary Concrete Barrier Type I shall apply.

526.04 Method of Measurement The following paragraphs are added:

Temporary concrete barrier will be measured for payment by the lump sum. Lump sum measurement will include verification of installation as required by the plans.

526.05 Basis of Payment The following paragraph is added:

The accepted quantities of Temporary Concrete Barrier, Type I - Retain by Dept in place will be paid for at the Contract lump sum price. Such payment shall be full compensation for furnishing all materials, assembling, moving, resetting, transporting, temporarily storing, and furnishing new parts as necessary, and all incidentals necessary to complete the work.

Temporary Concrete Barrier, Type I - Retain by Dept in place shall become the property of the Department upon completion of the use of the barrier where shown on plans.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
526.301 Temporary Concrete Barrier, Type I - Retain by Dept in place	Lump Sum

SPECIAL PROVISION
SECTION 526
CONCRETE BARRIER
(Permanent Concrete Barrier Type III B - Modified)

Section 526 of the Standard Specification is amended by addition of the following;

526.01 Description The following paragraph is added:

Permanent Concrete Barrier Type III B - Modified Single face barrier with a minimum height of 36 inches and in the shape shown on the Plans.

526.04 Method of Measurement The following paragraphs are added:

Permanent Concrete Barrier Type III B - Modified will be measured for payment by lump sum, complete in place.

526.05 Basis of Payment The following paragraph is added:

The accepted quantities of Permanent Concrete Barrier Type III B - Modified will be paid for at the Contract lump sum price, complete in place.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
526.331 Permanent Concrete Barrier Type III B - Modified	Lump Sum

SPECIAL PROVISION
SECTION 526
CONCRETE BARRIER
(Precast Concrete Median Barrier)

Section 526 of the Standard Specification is amended by addition of the following;

526.01 Description Furnish and install precast concrete median barrier as shown on the plans. Included in the work: field measurement and survey for working drawing preparation and barrier layout, furnishing, constructing, erecting and setting permanent precast concrete median barrier and precast concrete transition barrier, preformed joint filler, protective coatings, reflective delineators and other associated elements in accordance with these specifications and the lines and grades shown on the plans or established by the Resident. The length of each precast barrier segment shall be determined by the Contractor in accordance with the parameters shown on the Plans. The Contractor shall minimize the number of joints in the final barrier assembly to the extent possible.

The work shall also consist of collecting all necessary field data, including ground survey and field measurements, needed for the development of working drawings.

The Contractor may fabricate these concrete elements in accordance with Section 502 rather than utilizing a precast concrete Fabricator.

The following types of concrete barrier shall be used on the project:

Precast Concrete Median Barrier Double-faced single-slope barrier measuring 48” high with a 36” reveal. A dowel connection detail is provided at each end. This barrier type will be used on tangent and non-tangent sections of roadway where the top of pavement elevation is not the same on each side of the barrier, as measured at the face and toe of the single slope barrier.

Precast Concrete Transition Barrier Barrier of varying height and cross section joining sections of bridge single slope concrete traffic barrier to double-faced single-slope barrier as shown on the plans.

526.02 Materials

a. Concrete Portland Cement Concrete shall meet the provisions of Section 502 - Structural Concrete. The Portland cement shall conform to the requirements of AASHTO M85, Type I, II, or III.

Concrete shall be Class LP in accordance with Section 502.05 – Composition and Proportioning. A Calcium Nitrate Corrosion Inhibitor shall be added at the rate of 3 gallons per cubic yard.

b. Reinforcing Reinforcing for concrete median barrier and concrete transition barriers shall meet the requirements of Section 503, Reinforcing Steel.

c. Leveling Sand Leveling sand shall meet the requirements specified in Subsection 703.05, Aggregate for Sand Leveling.

d. Preformed Joint Filler Preformed Joint Filler shall meet the requirements specified in Subsection 705.01, Preformed Expansion Joint Filler.

e. Reflective Delineators Reflective Delineators for concrete median barrier shall meet the requirements of Special Provision 645, Highway Signing.

f. Structural Steel Bearing plates shall meet the requirements specified in Section 713.01 - Structural Steel.

All materials for barrier connection assemblies shall be fabricated in accordance with Standard Specification 504 and shall be hot dip galvanized after fabrication in accordance with Special Provision 506, Shop Applied Protective Coating – Steel.

526.03 Construction Requirements The Contractor shall collect all necessary field data, including ground survey and field measurements, required for the development of working drawings. The Contractor shall submit working drawings for approval showing the fabrication details of each proposed barrier section as well as layout drawings indicating horizontal layout of the barrier, the type of barrier proposed at each location, the length of each barrier segment and the overall length of each barrier run in accordance with Section 105.7, Working Drawings. Relevant field data, survey and calculations used in the development of the barrier layout shall be included in the working drawing submittal.

Permanent Concrete barrier shall be constructed in accordance with the provisions of Standard Specification Section 502.05 - Composition and Proportioning, through Section 502.15 - Curing Concrete, inclusive, with the following modifications:

a. The following is added to Section 502.10 – A. Construction of Forms, after Construction of Forms: “Concrete median barrier and transition sections shall be formed by precasting and/or prestressing methods. Slip forming will not be permitted.”

b. The following is added to Section 502.13: “E. Surface Finish Concrete finish shall be equal to a steel form finish.”

c. The following paragraphs are added to the end of Section 502.14 – Curing Concrete: “Liquid membrane-forming compounds may not be used for curing concrete barriers. These compounds can contaminate the concrete surface and prevent the proper penetration of concrete sealants.

In addition to the preceding methods of curing concrete, barrier sections may be cured by an accelerated curing method using low-pressure steam or radiant heat in a moist atmosphere. Other methods of curing may be used if approved by the Resident.”

Protective coating shall be applied to all surfaces located above grade prior to installation of the barrier in accordance with Section 515 – Protective Coating for Concrete Surfaces.

Concrete barrier shall be uniform in color and generally free from fins and porous areas and shall present a neat and uniform appearance.

Permissible dimensional tolerances for all median barriers and transition sections shall be as follows:

- a. Cross-sectional dimensions shall not vary from design dimensions by more than 1/4 inch. The vertical centerline shall not be out of plumb by more than 1/4 inch.
- b. Longitudinal dimensions shall not vary from the design dimensions by more than 1/4 inch per 10 feet of barrier section and shall not exceed 3/4 inch per section.
- c. Location of anchoring holes shall not vary by more than 1/4 inch in any direction from the dimensions shown in the concrete barrier details.
- d. Surface straightness shall not vary more than 1/4 inch under a 10 foot straightedge.

The finished barrier sections shall be generally free from defects. Defects shall be divided into two categories, minor defects and major defects. Minor defects in the barrier shall be repaired at the precasting facility. Major defects shall be cause for rejection of the section or, at the Department's sole discretion, the section shall be repaired at the precasting facility in a manner directed by the Resident.

Minor defects are defined as:

- a. Holes, honeycombing or spalls which are 6 inches or less in diameter and do not expose the outermost surface of the steel reinforcement.
- b. Tightly closed fractures or cracks measuring 12 inches or less in length which do not pass through the full thickness of the section, regardless of the position in the section. Cracks and fractures determined to be minor defects will not require repair.
- c. Surface voids measuring 3/8 inches or less in diameter and 3/8 inches or less in depth. Surface voids determined to be minor defects will not require repair.

Major defects are defined as any defect which does not meet the definition of a minor defect or minor defects which, in aggregate, comprise more than 2% of the surface area of the barrier section.

Repairs to concrete barrier and transitions shall be as follows:

- a. Minor Defect Repair: Repair shall be made with a fast set non-shrink patching material included on MaineDOT's list of prequalified materials. Methods of repair shall be approved

by the Resident. The color of the repaired portion shall match, as nearly as practicable, the color of the surrounding concrete. Repaired portions shall meet the shape and tolerance requirements stated herein.

b. Major Defect Repair: Major defect repair shall be pre-approved by the Engineer.

The following paragraphs are added at the end of this section:

The layout and placement of the concrete barrier segments shall be to the alignment and elevations shown on the plans or as directed by the Resident. Before any barrier or transitions may be placed, the subbase shall be compacted to 95% density and fine graded to a tolerance of $\pm 3/8$ inch of the true grade at any location under the barrier. Two (2) inches of leveling sand shall be used to assist the Contractor in achieving the grade tolerances for setting the barrier.

526.04 Method of Measurement Precast Concrete Median Barrier, including Transitions, regardless of type, will be measured for payment as one lump sum complete in place.

The following items will not be measured for payment separately, but shall be considered incidental to the Precast Concrete Median Barrier Pay Item: field measurement and survey, leveling sand, reinforcement, barrier connections, protective coating, reflective delineators, and preformed joint filler.

526.05 Basis of Payment The accepted quantities of Precast Concrete Median Barrier will be paid for at the contract Lump Sum price complete in place. Such payment shall be full compensation for finishing all material to assemble, and all incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
526.502	Precast Concrete Median Barrier	Lump Sum

SPECIAL PROVISION
SECTION 526
CONCRETE BARRIER
(Precast Concrete Transition Barrier)

Section 526 of the Standard Specification is amended by addition of the following:

526.01 Description Furnish and install precast concrete transition barrier as shown on the plans. This work includes field measurement and survey to collect all necessary field data and field measurements needed to complete the work, working drawing preparation and barrier layout, demolition of existing transition barrier, furnishing, constructing, erecting and setting precast concrete transition barrier, preformed joint filler, leveling sand, protective coatings and other associated elements in accordance with these specifications and the lines and grades shown on the plans or established by the Resident.

The Precast Concrete Median Barrier shall be Fabricated in accordance with Standard Specification 534- Precast Structural Concrete. The Contractor may self-perform the precast fabrication of the transition barrier in accordance with Section 502 rather than using a precast concrete fabricator.

526.02 Materials

a. Concrete A Calcium Nitrate Corrosion Inhibitor shall be added at the rate of 3 gallons per cubic yard.

d. Bolts All bolts and associated hardware shall be galvanized.

f. Preformed Joint Filler Preformed Joint Filler shall meet the requirements specified in Subsection 705.01, Preformed Expansion Joint Filler.

g. Leveling Sand Leveling sand shall meet the requirements specified in Subsection 703.05, Aggregate for Sand Leveling.

526.03 Construction Requirements The Contractor shall collect all necessary field data, including field measurements, required for the development of working drawings. The Contractor shall submit working drawings for approval showing the fabrication details of each proposed barrier section as well as layout drawings indicating horizontal layout of the transition barrier, the length of each transition in accordance with Section 105.7, Working Drawings. Relevant field data and calculations used in the development of the barrier layout shall be included in the working drawing submittal.

Permanent Concrete Transition barrier shall be constructed in accordance with the provisions of Standard Specification Section 502.05 - Composition and Proportioning, through Section 502.15 - Curing Concrete, inclusive, with the following modifications:

a. The following is added to Section 502.09 – A. Construction of Forms, after Construction of Forms: “Concrete median barrier and transition sections shall be formed by precasting and/or prestressing methods. Slip forming will not be permitted.”

b. The following is added to Section 502.13: “E. Surface Finish Concrete finish shall be equal to a steel form finish.”

c. The following paragraphs are added to the end of Section 502.14 – Curing Concrete: “Liquid membrane-forming compounds may not be used for curing concrete barriers. These compounds can contaminate the concrete surface and prevent the proper penetration of concrete sealants.

In addition to the preceding methods of curing concrete, barrier sections may be cured by an accelerated curing method using low-pressure steam or radiant heat in a moist atmosphere. Other methods of curing may be used if approved by the Resident.”

Protective coating shall be applied to all surfaces located above grade prior to installation of the barrier in accordance with Section 515 – Protective Coating for Concrete Surfaces.

Concrete barrier shall be uniform in color and generally free from fins and porous areas and shall present a neat and uniform appearance.

Permissible dimensional tolerances for all median barriers and transition sections shall be as follows:

a. Cross-sectional dimensions shall not vary from design dimensions by more than 1/4 inch. The vertical centerline shall not be out of plumb by more than 1/4 inch.

b. Longitudinal dimensions shall not vary from the design dimensions by more than 1/4 inch per 10 feet of barrier section and shall not exceed 3/4 inch per section.

c. Location of anchoring holes shall not vary by more than 1/4 inch in any direction from the dimensions shown in the concrete barrier details.

d. Surface straightness shall not vary more than 1/4 inch under a 10 foot straightedge.

The finished barrier sections shall be generally free from defects. Defects shall be divided into two categories, minor defects and major defects. Major defects shall be cause for rejection of the section or, at the Department’s sole discretion, the section shall be repaired in a manner directed by the Resident.

Minor defects are defined as:

Holes, honeycombing or spalls which are 6 inches or less in diameter and do not expose the outermost surface of the steel reinforcement.

Tightly closed fractures or cracks measuring 12 inches or less in length which do not pass through the full thickness of the section, regardless of the position in the section. Cracks and fractures determined to be minor defects will not require repair.

Surface voids measuring 3/8 inches or less in diameter and 3/8 inches or less in depth. Surface voids determined to be minor defects will not require repair.

Major defects are defined as any defect which does not meet the definition of a minor defect or minor defects which, in aggregate, comprise more than 2% of the surface area of the barrier section.

Repairs to concrete transitions shall be as follows:

Minor Defect Repair: Repair shall be made with a fast set non-shrink patching material included on MaineDOT's list of prequalified materials. Methods of repair shall be approved by the Resident. The color of the repaired portion shall match, as nearly as practicable, the color of the surrounding concrete. Repaired portions shall meet the shape and tolerance requirements stated herein.

Major Defect Repair: Major defect repair shall be pre-approved by the Engineer.

The following paragraphs are added at the end of this section:

The layout and placement of the concrete transition barrier shall be to the alignment to match existing barrier to remain or as directed by the Resident. The transition barrier shall be placed on level on the approach slab. Two (2) inches of leveling sand shall be used to assist the Contractor in achieving the grade tolerances for setting the barrier.

526.04 Method of Measurement Precast Concrete Transition Barrier will be measured for payment as one lump sum for both transition barriers, complete in place.

The following items will not be measured for payment separately, but shall be considered incidental to the Precast Concrete Transition Barrier Pay Item: field measurement, demolition, reinforcement, barrier connections, protective coating, leveling sand, preformed joint filler, and assembly, disassembly, and reassembly as many times as required to complete the specified Bridge Joint Modifications.

526.05 Basis of Payment The accepted quantities of Precast Concrete Transition Barrier will be paid for at the contract Lump Sum price complete in place. Such payment shall be full compensation for all materials, equipment, and labor required to fabricate, install, assemble, disassemble and reassemble the Precast Concrete Transition Barrier as necessary to complete the work.

Portland
WIN 23545.00
February 23, 2020

Payment will be made under:

Pay Item

526.503

Precast Concrete Transition Barrier

Pay Unit

Lump Sum

SPECIAL PROVISION
SECTION 527
 ENERGY ABSORBING UNIT
 (Truck Mounted Attenuator)

Description: This work consists of furnishing, maintaining and deploying a truck mounted attenuator (TMA) and a shadow or barrier truck in accordance with this specification and as directed. A Truck Mounted Attenuator must comply with NCHRP Report 350.

Materials: The energy absorbing system shall be from the Department's Qualified Product List (QPL). The TMA shall be mounted in accordance with the manufactures specifications to a truck with a gross vehicle weight of at least 10,000 pounds.

Installation: The chart below identifies the distance from the work zone or hazard where the TMA shall be deployed. If the work zone is within a marked lane closure, the barrier truck distances shall apply and if the work is mobile, then shadow truck distances shall apply. When used as a barrier, the barrier truck shall be parked in low gear with brakes applied and the front wheels turned away from the work zone and the adjacent traffic lane. For placement details, reference the Manual of Uniform Traffic Control Devices (MUTCD).

Weight of Truck	Barrier Truck Distance from Work Zone of Hazard	Shadow Truck Distance from Work Vehicle or Work Zone
10,000 lbs	250 ft	300 ft
15,000 lbs	200 ft	250 ft
>24,000 lbs	150 ft	200 ft

Method of Measurement: Truck mounted attenuator will be measured by the unit furnished.

Basis of Payment: The accepted quantity of truck mounted attenuator will be paid for at the contract unit price each which includes furnishing and all costs of attaching to and retrofitting of a truck on which The TMA will be deployed. Daily maintenance and deployment of the TMA, including the cost of the truck, shall be considered incidental.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
527.33 Truck Mounted Attenuator	Each

SPECIAL PROVISION
SECTION 534
PRECAST STRUCTURAL CONCRETE
(Precast Approach Slab)
(Precast Sleeper Slab)

Section 534 of the Standard Specification is amended by addition of the following/;

534.01 Description The following paragraph is added:

This work shall consist of fabricating, delivering, erecting, installing and leveling the precast approach slabs, precast sleeper slabs and related material as shown in the Plans. Materials, work, inspection and documentation not specifically addressed by this Specification shall be done in accordance with the applicable sections of the Precast/Prestressed Concrete Institute (PCI), *Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products* (MNL 116), including Commentary.

The Contractor may prefabricate these concrete elements in accordance with Section 502 rather than utilizing a precast concrete Fabricator.

534.02 Materials The following paragraph is added:

Backfill and bedding materials shall be as shown on the Plans or in these Specifications.

534.04 Design Requirements

This subsection is deleted in its entirety and replaced with the following:

The approach slab and sleeper slab panels shall be fabricated in accordance with the project plans, and as modified by the Contractor to allow for appropriate lifting and handling of the panels. The Contractor is responsible for retaining the services of a Professional Engineer licensed in the state of Maine to design all lifting and handling devices, and all associated reinforcement necessary to keep lifting stresses within acceptable limits, for the prefabricated approach slab panels and sleeper slab panels. The design of all lifting devices and reinforcing shall be in accordance with AASHTO LRFD Bridge Design Guide, 8th Edition (2017).

534.16 Tolerances

This subsection is deleted in its entirety and replaced with the following:

Precast approach slab panels and precast sleeper slab panels shall be manufactured in conformity with the following tolerances:

Depth of slab	-1/4 in, + 1/2 in
Plan Dimension	±1/4 in
Local Smoothness	1/4 in over 10 feet
Squareness	1/2 in max. difference in diagonal meas.
Location of Pipe Dowel Blockouts	±1/2 in horizontally & transversely
Approach Slab Elastomeric Pad	± 1/2 in transversely from centerline of bearing
Transverse placement of panels	±1/4 in (deviation from line parallel to centerline)
Longitudinal placement of panels	± 1/2 in from plan location

534.20 Installation of Precast Units

This subsection is deleted in its entirety and replaced with the following:

The precast sleeper slab panels shall be placed on a compacted granular material bed with a minimum thickness of 6 inches. This material shall conform with either Section 703.19 Granular Borrow, Material for Underwater Backfill or Section 703.06 Aggregate for Subbase and Base, Type D. This material shall be compacted and prepared in accordance with the appropriate Sections in the Standard Specifications. When placed, the Sleeper slab shall meet the lines and grades shown on the Plans. When checked with a 10 foot straightedge, the surface of the sleeper slab shall not vary more than one-quarter inch in 10 feet.

The precast approach slab panels shall be placed on elastomeric pads on both the backwall side and the sleeper slab side as shown on the Plans. All abutment bolted connections shall be completed prior to placing the approach slab on the backwall. The Contractor shall verify that all pipe dowel ports between the approach slab and the backwall are aligned and that there is a maximum 1" gap between the backwall and the approach slab.

The Contractor shall grout connection dowel bars between the backwall and the approach slab as shown on the Plans. The grout material shall be selected from the Qualified Products List and shall be designed to achieve a 1,000 psi strength in 8 hours.

As shown on the plans, apply waterproofing membrane from the back of the deck to the top of the approach slab to cover the joint between the backwall and the approach slab. Waterproofing membrane shall extend one foot from the top down the sides of the units. Laps in the membrane shall not align with the butt joints in the approach slabs.

Fill holes that were cast in the units for handling with either Portland cement mortar or other approved adhesive.

Uniformly distribute backfill material over the approach slabs in layers of not more than 8 inches in depth, loose measure, and thoroughly compact each layer using approved compactors before successive layers are placed. Place and compact the backfill without disturbance or displacement of the structure. Whenever a compaction test fails, the Contractor shall not place additional backfill over the area until the lift is re-compacted and a passing test achieved.

Use hand-operated compactors within five feet of the approach slab as well as over the top until it is covered with at least 12 inches of backfill. Take appropriate precautions to protect the top of the slab from damage during backfilling and/or paving operations. Any damage to the top of the slab shall be repaired, or units replaced, at no cost to the Department.

534.21 Method of Measurement The following paragraphs are added:

Precast Sleeper Slabs will be measured as one lump sum, complete, in place and accepted.

Precast Approach Slabs will be measured as one lump sum, complete, in place and accepted.

534.22 Basis of Payment The following paragraph is added:

The accepted Precast Sleeper slabs or Precast Approach Slabs will be paid for at the respective Contract lump sum price. The lump sum price shall be full compensation for all labor, equipment, materials, professional services, and incidentals necessary for detailing, manufacturing, furnishing and installing the precast concrete elements and accessories. Falsework, reinforcing steel, welded steel wire fabric, repair material, grout, elastomeric pads, waterproofing membrane, and sheet plastic bond breaker will not be measured and paid for separately, but will be incidental to the lump sum pay item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
534.7601 Precast Approach Slab	Lump Sum
534.7611 Precast Sleeper Slab	Lump Sum

SPECIAL PROVISION
SECTION 534
PRECAST STRUCTURAL CONCRETE

Revise Paragraph 2 of 534.07 Quality Control to say:

Provide a copy of the Quality System Manual (QSM) to the Fabrication Engineer for review and approval.

Add the following Paragraph to 534.07 Quality Control:

QC staff shall be separate from production and shall not perform any production work.

Revise Sentence 1 in 534.17 Finishing Concrete to say:

Concrete Products shall be finished to meet the Standard Grade finish as described in the MNL-116.

SPECIAL PROVISION
SECTION 602
LIGHTWEIGHT FOAM CONCRETE FILL
(Lightweight Foam Concrete)

602.301 Description This work shall consist of forming, batching, mixing, and placing Lightweight Foam Concrete (LFC) as either LFC Fill or LFC Distribution Slab of the appropriate type as indicated on the plans or as directed by the Resident.

602.302 Materials Materials shall meet the following requirements specified in the following Subsection of Division 700:

Portland Cement and Portland Pozzolan Cement	701.01
Water	701.02
Air Entraining Admixtures	701.03
Water Reducing Admixtures	701.04
Water Reducing, High Range Admixture	701.0401
Set Retarding Admixtures	701.05
Curing Materials	701.06
Fly Ash	701.10
Calcium Nitrate Solution	701.11

Pozzolons and admixtures (for accelerating, water reducing, retaining, improving the bond, etc.) may only be used of specifically designated and approved by the LFC Manufacturer.

Expansion Material (foaming agent) conforming to ASTM C 869 manufactured and provided by the LFC Manufacturer. The manufacturer shall provide an infrared spectrophotometer trace no more than five years old. When the infrared spectrophotometer trace is more than seven years old, a new one shall be provided.

The material properties of the LFC shall conform to the following:

APPLICATION	LFC FILL	LFC DIST. SLAB
Max. Cast Density, pcf	36	42
Min. 28-Day Comp. Strength, psi	80	120

602.303 Quality Control The Contractor shall administer a Process Quality Control Plan hereafter referred to as the “Plan”, sufficient to assure a product meeting the Contract requirements. The Plan shall meet the requirements of Section 106.01.

Concrete shall be batched, delivered and placed within 90 minutes after water and cement are combined.

602.304 Quality Assurance of Lightweight Foam Concrete Fill Installer The LFC Installer shall be certified by the Manufacturer of the foaming agent and regularly engaged in the production and placement of the LFC. This shall include the completion of LFC fills having a minimum of 1,000 cubic yards in the past 4 years. Furthermore, the material shall have been successfully applied on at least three (3) LFC projects which have performed satisfactorily for at least three (3) years.

The LFC Installer shall be certified and approved in writing by the foam agent manufacturer of the LFC material. The Installer's foreman shall have a minimum of 2 years' experience in this work and shall have worked on at least one of the three successful LFC projects.

The specialized batching, mixing, and placing equipment shall be automated and certified for the purpose by the manufacturer of the LFC material. Bulk cement shall be weighed on a scale which operates within a tolerance of one half of one percent (0.5%) per batch. Cement and water may be premixed and delivered to the site. Foam shall be added and mixed at the site using the aforementioned equipment.

The LFC Installer shall use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are familiar with the specified requirements and the methods needed for proper performance of the Work noted in this Section.

The LFC Manufacturer's Representative, representing the LFC supplier, shall be experienced in the placement of LFC and shall be on site full-time during placement.

602.305 Observation and Testing All work performed under this Contract shall be subject to observation and tests by the Department. The Contractor shall cooperate with the Department and shall furnish all materials and facilities as may be required, and shall provide convenient access to all parts of the work for the purposes of observations to check compliance with the plans and specifications.

The Department will test the LFC for cast density, compressive strength, and foam density:

(a) Cast Density.

(i) Prior to placement of the initial batch, the LFC Installer shall check the density and adjust the mix as required to obtain the manufacturer's specified cast density at point of placement.

(ii) At hourly intervals during placement, the contractor shall monitor the density and adjust as necessary to maintain the specified cast density.

(b) Strength.

(i) The Contractor shall supply sufficient quantity of 3 inch diameter by 6 inch high cylinder molds for the use of the Department. For quantitative purposes, the Contractor

shall assume that four (4) test cylinders will be taken for each 70 cubic yards of LFC placed and a minimum of two (2) sets of four cylinders each per day.

(ii) The Contractor shall provide a protective container which will prevent freezing, damage or loss of moisture to the test specimens. The protective container shall be located on the site in an area approved by the Department.

(iii) Strength determination shall be the responsibility of the Department. All cylinders will be molded, cured, handled and tested by the Department. The Contractor shall provide molds, and a curing environment conforming to the requirements of ASTM C 495. The anticipated sequence of testing will be at 1, 2, 7, 14, and 28 days.

(c) Foam Density

(i) Foam density will be taken twice per day per operating unit by the LFC Installer with Quality Assurance by the Department for compliance with the approved submitted mix design.

602.306 Submittals The Contractor shall submit, in conformance with Section 105, the following:

1. Materials list of items proposed to be provided under this section.
2. Manufacturer's specifications, catalog cuts, and other engineering data needed to demonstrate compliance with the specified requirements.
3. Proof of LFC Installer's compliance with the QA requirements in Section 602.304, to include a list of projects with completion date, owner's name and phone number, and contact person.
4. Mix designs for the LFC, prepared by the manufacturer, showing compliance with the specified properties.
5. Certification of Batch, mixing and placing equipment by the LFC manufacturer.
6. Written evidence of acceptance of the certified producer/supplier by the foam agent manufacturer.
7. Written evidence that LFC Installer is certified by and approved by the foam agent manufacturer.
8. Manufacturer's specifications, catalog cuts, and other product data needed to demonstrate compliance with specified requirements. These shall include reports and test results from laboratories.

9. A description of the proposed installation procedure. The procedure shall address the proposed construction sequence and schedule, location of the equipment and batching areas, and type of equipment and tools to be used.

10. At least two (2) weeks prior to placing, a Trial Batch (minimum of 1 cubic yard) will be prepared and placed offsite, and the LFC manufacturer will submit 10 each 3 inch diameter by 6 inch high cylinder samples of the “as - designed” LFC for testing. The Trial Batch shall be produced with the equipment, materials, and methods intended for construction. The LFC manufacturer will notify the Department 7 days prior to the Trial Batching and will cooperate with observation activities by the Department. Specimens shall be covered after casting to prevent loss of moisture and shall not be oven dried. Testing for strength and density will be in accordance with the requirements of ASTM 495 and ASTM C796. The accepted samples shall become the standard of the material furnished under this Contract

602.307 Construction Methods LFC shall be a homogeneous mixture and all materials shall be approved prior to use.

The areas to be filled shall not have any standing water in it prior to placement of the LFC. LFC shall not be placed during or when periods of precipitation are expected unless placed in an enclosed, covered area. The Contractor shall ensure the LFC remains above the water table at all times during construction. Subgrade for LFC shall be prepared in accordance with the LFC Manufacturer’s recommendations.

The Contractor shall be permitted to operate equipment and complete construction activities directly atop the LFC distribution slab but shall implement reasonable precautions to prevent damage that would compromise the performance of the distribution slab in the final condition. Material shall be protected before, during and after installation, and the Installer shall protect the work and materials of other trades. In the event of damage, immediately make replacements and repairs to the acceptance of the Department at no additional cost to the Department.

Any items to be encased in the LFC including but not limited to existing substructure concrete, proposed substructure concrete, backwall concrete, and approach slab concrete shall be properly set and secured as well as having all necessary bond breaks and compressible inclusions installed in accordance with the Plans and Specifications prior to the installation of LFC.

LFC shall not be placed at temperature lower than 32 degrees Fahrenheit or when freezing conditions are expected in less than 24 hours. Avoid freezing before initial set of the LFC, and do not place LFC against frozen ground. If these conditions cannot be met, consult with the Manufacturer of the LFC to determine precautions necessary to assure acceptable installation of the LFC.

Cure LFC in accordance with the LFC Manufacturer’s recommendations.

Any forms and false work shall be in accordance with Section 502.09 and the manufacturer's recommendations.

Foam generating equipment shall be used to produce a predetermined quantity of pre-formed foam which shall be mixed and blended with cementitious slurry. Foam generators shall be certified in writing by the manufacturer of the LFC and approved by the Resident. Equipment shall be calibrated daily to produce consistent foam with stable, uniform cellular structure. When producing neat foam concrete (no sand or other aggregates), pre-formed foam under no circumstances shall be added or blended with cementitious slurry in a transit mixer. LFC shall be produced utilizing specialized automated proportioning, mixing, and foam producing equipment, which is capable of meeting the specified properties.

Avoid excessive handling of the material; after sufficient mixing of the foam with slurry, LFC shall be conveyed promptly in its final location. No mechanical vibration of the LFC shall be permitted.

Mobile site batch plants may be used. The mobile site batch plant shall be certified in writing by the manufacturer of the LFC and approved by the Department. Any mobile site batch plant shall be calibrated before the start of the project, and then during the project as determined by the Resident. Mobile site batch plants shall be capable of mixing and pumping foamed concrete, and shall have a minimum 1 cubic yard capacity.

The LFC fill shall be placed according to the approved installation procedures provided by the manufacturer. LFC shall be placed in lifts not exceeding 36 inches in depth, or the maximum lift height as approved by the manufacturer. The final surface finish shall be within 1.5 inches of the elevation shown on the Plans and shall be sloped to promote drainage as indicated on the plans.

Allow a minimum of one day (24 hours) between subsequent lifts. Prior to verification of the minimum specified compressive strength by the Resident's testing program, additional lifts may be placed after the one day minimum at the Contractor's risk. Any material that does not meet the minimum specified strength within 28 days shall be removed and replaced by the Contractor at no additional cost.

Move the discharge hose(s) sufficiently to ensure level filling through the specified fill area. Uneven filling is not permitted.

Limit the area of placement to the volume that can be placed within one (1) hour, up to the maximum three foot lift height. Stagger placements such that the vertical joints are at least ten feet apart.

The discharge hose length shall not exceed 800 feet in length. Discharge from the hose shall not be allowed to flow more than 30 ft from where it is deposited to its final position.

Paving machines, heavy construction equipment or other unusual loading of the LFC shall not be permitted until it has attained the specified 28 day compressive strength.

Construction activities on any recently placed lift will not be permitted until at least 12 hours has elapsed and a minimum compressive strength of 8 psi has been achieved. However, if any work on the recently placed LFC resulting in cracking or indentations of more than 0.25 inches, the Contractor shall discontinue construction, revise their wait time, mix strength or equipment used and submit to the Resident for approval.

Sawing or ripping of the LFC for utilities, underdrain or other conflicts will be by methods approved by the Resident.

602.308 Method of Measurement LFC Fill and LFC Distribution Slab, satisfactorily mixed, placed, tested and accepted in accordance with the plans and these specifications, will each be measured as one lump sum. The lump sum items will include: furnishing, testing, and installing LFC.

Excavation of upper topsoils or any unsuitable or organic soils encountered, prior to the placement of LFC, will be measured and paid under Item 203.20, Common Excavation. Any granular borrow required for foundation material and subgrade preparation for LFC placement will be considered incidental to Item 203.20, Common Excavation.

602.309 Basis of Payment LFC Fill and LFC Distribution Slab, satisfactorily placed in accordance with the dimensions shown on the plans and accepted, will be paid for at the Contract lump sum unit price(s), which payment will include full compensation for all: materials, preparation of written submittals and material testing, labor and equipment required to prepare the foundation/subgrade soils, transporting and placement of LFC, groundwater control and temporary forming as required, and all incidentals required to furnish and install the LFC in accordance with the contract plans and these specifications.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
602.302	Lightweight Foam Concrete Fill	Lump Sum
602.303	Lightweight Foam Concrete Distribution Slab	Lump Sum

SPECIAL PROVISION
SECTION 603
PIPE CULVERTS AND STORM DRAINS

603.12 Basis of Payment: This section shall be amended with the addition of the following:

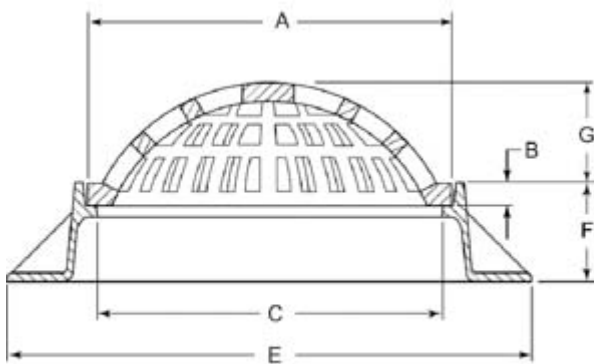
Payment will be made under:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
603.151	12 inch Corrugated Metal Pipe	Linear Foot
603.155	12 inch Reinforced Concrete Pipe Class III	Linear Foot
603.165	15 inch Reinforced Concrete Pipe Class III	Linear Foot
603.175	18 inch Reinforced Concrete Pipe Class III	Linear Foot
603.195	24 inch Reinforced Concrete Pipe Class III	Linear Foot
603.205	30 inch Reinforced Concrete Pipe Class III	Linear Foot

SPECIAL PROVISION
SECTION 604
MANHOLES AND CATCH BASINS
(Beehive Grate)

This section is amended by the addition of the following:

Description: The beehive grate shall be installed on the type B1-P catch basin(s) as shown on the plans or directed by the resident and in accordance with these specifications. The grate shall meet the dimensions and requirements of the Neenah Foundry Beehive Grate number shown below or an approved equal.



Illustrating R-2560-E

CATALOG NUMBER	A	B	C	E	F	G
R-2560-C	18 1/4"	1 1/4"	16 3/4"	30"	8"	4"

Basis of Payment: Payment will be incidental to Item No. 604.091 Catch Basin Type B1-P.

SPECIAL PROVISION
SECTION 604
MANHOLES AND CATCH BASINS
(Behind Curb Catch Basin)

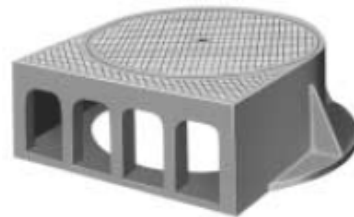
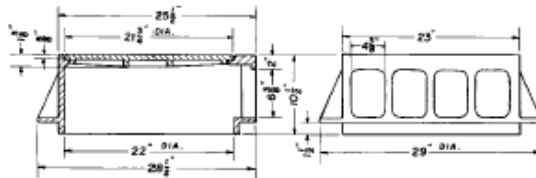
This section is amended by addition of the following:

Description: This work shall consist of constructing catch basins and manholes in accordance with the requirements of Section 604 of the Standard Specifications and Standard Details, revision of November 2014 for Construction. The catch basin frame and lid shall conform to Neehan Foundry Item R-3303 or an approved equal.

BEHIND THE CURB INLETS

R-3303
Catch Basin Frame and Lid

Heavy Duty
For behind-the-curb construction.
Furnished standard with as-cast bearing surfaces.



Method of Measurement: Measurement shall be in accordance with Subsection 604.05.

Basis of Payment: Payment shall be in accordance with Subsection 604.06.

Payment shall be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
604.2402 Behind Curb Catch Basin	Each

SPECIAL PROVISION
SECTION 604
MANHOLES, INLETS, AND CATCH BASINS
(Storm Water Check Valve)

Description This work shall consist of furnishing and installing storm water check valve(s) where required as shown on the plans, in accordance with these specifications or as directed by the Resident.

Storm water check valves shall be used in the following locations:

Station 107+49, 187' right (outlet for 30" diameter pipe option III)

Station 109+36, 111' right (outlet for 18" diameter pipe option III)

Station 113+12, 54' right (outlet for 18" diameter pipe option III)

Materials

The check valve shall be manufactured with no metal, mechanical hinges or fasteners. Check valves are to be made of all rubber and flow operated check type. All metal components and/or hardware shall be either aluminum or stainless steel

Design Requirements

The check valves shall prevent backflow from tides. When the line pressure exceeds the backpressure, the line pressure forces the check valve open, allowing flow to pass. When the backpressure exceeds the line pressure, the check valve is forced closed, preventing backflow.

The storm water check valves shall be a slip on style that is secured to the pipe with stainless steel bands.

Installation

Valve shall be installed in accordance with manufacturer's written Installation and Operation Manual and approved submittals.

Method of Measurement Storm Water Check Valve will be measured by each unit, complete in place and accepted.

Basis of Payment The accepted quantity of storm water check valve(s) will be paid for at the contract unit price each, which shall be full compensation for all materials including

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anchorage systems, labor and incidental necessary for furnishing and installing the storm water check valve(s).

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
604.221	18 Inch Storm Water Check Valve	Each
604.223	30 Inch Storm Water Check Valve	Each

SPECIAL PROVISION
SECTION 604
MANHOLES, INLETS, AND CATCH BASINS
(Special Catch Basin Inlet)

Description This work shall consist of constructing catch basins and manholes in accordance with the requirements of Section 604 of the Standard Specifications and the Standard Details as applicable. The special catch basin inlet, including curb inlet frame, grate, and curb box, shall conform to Neenah Foundry Item R-3165 or an approved equal, as shown on the second page of this special provision.

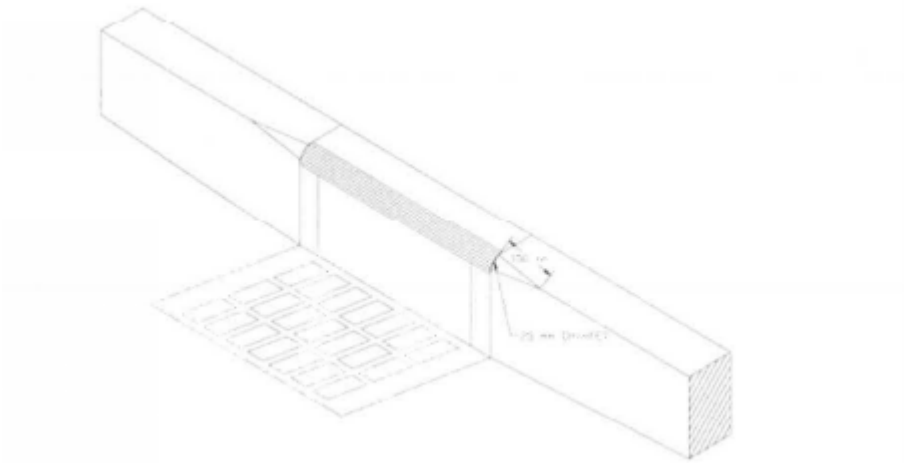
Adjusting Approach Curbing The Contractor shall cut the approach section of curb as noted in the detail on the second page of this special provision.

Method of Measurement Each special catch basin inlet will be measured by each unit, complete in place and accepted. The work to cut the approach curb as noted herein will not be measured separately for payment but shall be included in the per each price to provide and install the special catch basin inlet. Connection pipes, including bends and fittings, to the adjacent behind the curb line catch basin structure shall be incidental to this item. The catch basin structure behind the curb line shall be paid for separately under the applicable catch basin with solid cover items as identified in the plans.

Basis of Payment Payment shall be in accordance with Subsection 604.06.

Payment will be made under:

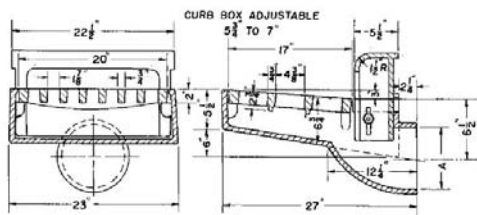
<u>Pay Item</u>	<u>Pay Unit</u>
604.2403 Catch Basin Inlet Assembly	Each



DETAIL FOR ADJUSTING CURBING TO MATCH CURB INLET FRAME

R-3165
Combination Inlet Frame, Grate, Curb Box

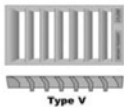
Heavy Duty



Furnished standard with Ductile Iron grate.
For use where conditions do not permit catch basin under inlet.
Drainage is to catch basin behind curb.
Available with 8", 10" or 12" rear outlet – specify when ordering.

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3165	A	1.4	4.5
R-3165	V	1.2	4.5

Standard Grate (shown): Type A
Alternate Grate(s):



Available Curb Boxes: 1-1/2" open (shown), 3" open
Available with Curb Plate

CURB INLET FRAME, GRATE AND CURB BOX DETAIL

SPECIAL PROVISION
SECTION 604
MANHOLES AND CATCH BASINS

This section is amended by the addition of the following:

Description: This work consists of constructing catch basins and manholes in accordance with the requirements of Section 604 of the Standard Specifications and as shown in the Standard Details.

Method of Measurement: Measurement shall be in accordance with Subsection 604.05.

Basis of Payment: Payment shall be in accordance with Subsection 604.06.

Payment will be made under:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
604.071	Catch Basin Type A1-P	EA
604.076	60" Catch Basin Type A1-C	EA
604.0761	60" Catch Basin Type A1-P	EA
604.0771	72" Catch Basin Type A1-P	EA
604.091	Catch Basin Type B1-P	EA
604.2491	Catch Basin Type F7	EA

SPECIAL PROVISION
SECTION 606
GUARDRAIL
(Anchorage Assembly -Mid-Way Splice)

Description This work shall consist of furnishing and installing anchorage assemblies in accordance with current Standard Specifications and the current AASHTO-AGC-ARTBA Joint Cooperative Committee Task Force 13 Report and as indicated in the plans and in this Special Provision.

Materials Materials shall meet the requirements specified in the following subsections of Division 700 - Materials:

Timber Preservative	708.05
Metal Beam Rail	710.04
Timber Posts	710.07
Guardrail Hardware	710.08

Anchorage assembly elements shall be per the Components List found on Sheet No. 2 of 2, Drawing SEW02a – Trailing End Terminal-Foundation Tube Option in the Task Force 13 Report noted above.

CONSTRUCTION REQUIREMENTS

Anchorage Assembly: Installation of the anchorage assembly shall be in accordance with the AASHTO-AGC-ARBTA Joint Committee Task Force 13 Report Drawing SEW02a, except that the rail section may be on a radius, as indicated on the plans.

Method of Measurement Anchorage assemblies will be measured by the unit, each complete in place and will include one 12.5 ft beam and all components listed in the Task Force 13 Report.

Basis of Payment The accepted quantity of Anchorage Assemblies will be paid for at the contract unit price per each, complete in place and will include one 12.5 ft beam and all components listed in the Task Force 13 Report. Payment shall be full compensation for furnishing and installing all components as shown and for incidentals necessary to complete the work.

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Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
606.2593 Anchorage Assembly - Mid-Way Splice	Each

SPECIAL PROVISION
SECTION 615
LOAM
(Loam Compost Mix)

Supplement SECTION 615 - LOAM with the following:

615.1 Description This work shall consist of furnishing a 50% Loam/50% Compost mix as authorized by the Resident Engineer.

615.2 Materials Loam for the Compost Blanket shall meet the requirements set forth in Standard Specification Sections 615 and 717.09. Compost for the Compost Blanket shall meet the following requirements:

Compost shall be produced by the aerobic (biological) and biochemical decomposition of source separated organic materials. Compost shall be derived from a mixture of the following feedstock materials:

1. Green material consisting of chipped, shredded, or ground vegetation, or clean processed recycled wood products (MaineDEP Type IA, IB)
2. Biosolids (MaineDEP Type II)
3. Manure
4. Mixed food waste (MaineDEP Type 1B, IC)

Compost shall not be derived from mixed municipal solid waste and must be reasonably free of visible contaminants. Compost shall not contain paint, petroleum products, pesticides, industrial residuals or any other chemical residues harmful to animal life or plant growth. Compost shall not possess objectionable odors. The compost shall be produced at a licensed facility as specified under the State of Maine Department of Environmental Protection Chapter 410: Composting Facilities that regulates Solid Waste Facilities. If exempt from State permitting requirements, the composting facility shall certify that it follows guidelines and procedures for production of compost meeting the environmental standards of Chapter 410.

Compost shall meet the following parameters:

Parameter	Requirement
Acidity range	5.5 pH to 8.5 pH
Moisture content	30-60 % wet weight basis
Organic content	25-65 % dry weight basis
Particle Size	100% passing 3 inch 90-100% passing 1 inch 65- 100% passing 3/4 inch 0-75% passing 1/4 inch
Physical Contaminant	<1 % (dry weight basis)
Soluble Salts	5.0 max m mh os/cm
Carbon: Nitrogen Ratio	15-25:1

Total Nitrogen	<1.7%
Organic N	<1.5%
Total Phosphorous	<1.0%
Total Potassium	<0.5%

Maturity Test: The finished compost must be tested and classified as “Very Mature” by one of the following methods.

Method	Units	Very Mature	Mature	Immature
Oxygen Uptake Rate (OUR Test)	O ₂ / unit TS / hr	< 0.4	0.4 - 1.3	> 1.3
Specific Oxygen Uptake Rate (SOUR Test)	O ₂ / unit BVS / hr	< 0.5	0.5 - 1.5	> 1.5
Dewar Self-Heating Test	Temp. rise (°C)	< 10	10 - 20	> 20
Solvita Test	Index value	7 - 8	5 - 6	< 5

Compost shall conform to all applicable specification requirements prior to its final placement on the project. The practice of culling deleterious or out-of-specification material after placement and/or grading in place will not be allowed.

615.21 Submittal Requirements The Contractor shall provide MaineDOT sample and documentation from the compost supplier of the following information:

1. The source(s) of compost.
2. Laboratory results that show that the compost delivered to the project meets the compost parameters listed above. An independent Seal of Testing Assurance (STA) Program certified laboratory shall perform the analysis.
3. Compost supplier references documenting that they are fully permitted by the MaineDEP to produce compost.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
615.086 Loam/Compost Mix	C.Y. Cubic Yard

SPECIAL PROVISION
SECTION 615
UNDERDRAINED SOIL FILTER

Description: This work shall consist of construction of an Underdrained Soil Filter at the location designated on the plans and as specified in the typical cross section.

Materials: All materials for the Underdrained Soil Filter shall meet the requirements of the following sections of the Standard Specifications except as provided below.

Loam	615.02
Fine Aggregate for Concrete	703.01
Underdrain Backfill Material - Type B	703.22
Underdrain – Type B	706.09

Fine Aggregate for Concrete – in 703.01 Specification only paragraph 1 and gradation table apply. Paragraph 2-6 are not required.

Engineered Soil Mix – shall be a well-mixed batch containing the following components and proportions, measured by volume:

- 50% - Fine Aggregate for Concrete
- 20% - Loam
- 30% - Super Humus or Superhumus™ or equivalent as approved

Impervious Liner – shall consist of linear low polyethylene (LLDP), or PVC with a minimum thickness of 30 millimeters.

Construction: This Underdrained Soil Filter shall not be installed until the area that drains to it has been permanently stabilized with pavement, 90% vegetation cover, or other permanent stabilization. Alternatively, the runoff from this contributing drainage area may be diverted around the Underdrained Soil Filter until stabilization is completed unless the Resident has determined, on a case-by-case basis, that sufficient measures are being taken to prevent sediment during construction from entering the Underdrained Soil Filter.

Install the engineered soil mix in two nine-inch lifts to prevent pockets of loose media and firmly compact to the satisfaction of the Resident. The Type – B Underdrain shall be installed according to Section 605.04.

Install the impervious liner in between two layers of drainage geotextiles to protect the liner from puncture and in accordance with the manufacturer's recommendations.

General: Inspection of the Underdrained Soil Filter shall be provided for each phase of construction by the Resident with required reporting to the MaineDOT Environmental Office, Surface Water Quality Unit.

Submittals: At least 10 working days prior to the delivery of the material to the site, and for approval by the Resident, the Contractor shall submit:

- A gradation test performed by a qualified soil testing laboratory the gradation of the 703.01 – Fine Aggregate for Concrete and 615.02 Loam. (Submittals in accordance with individual material requirements are set forth within the Standard Specifications.)
- Certification of the source of the Super Humus or Superhumus™ or equivalent.
- A three-gallon sample of the mixed Engineered Soil Mix.

Method of Measurement: Underdrained Soil Filter will be measured for payment by the lump sum.

Basis of Payment: Underdrained Soil Filter will be paid for at the contract lump sum complete and in place. Payment shall be full compensation for furnishing and placing underdrain, underdrain backfill material, engineered soil mix, erosion control blanket, impervious liner and drainage geotextiles, and all equipment and labor, and all other incidentals necessary to complete the work.

Excavation for the 18” engineered soil mix and the 12” underdrain backfill material will be considered incidental, except as provided in Section 206 – Structural Excavation.

Excavation and grading to establish final grade of the underdrained soil filter embankments and floor elevation shall be paid under appropriate item numbers.

Catch basins, loam, seed and special seeding will be paid under the appropriate item numbers.

<u>Pay Item</u>	<u>Pay Unit</u>
615.27 Underdrained Soil Filter	Lump Sum

SPECIAL PROVISION
SECTION 618
SEEDING

Description:

This work shall consist of furnishing and applying special seed in the underdrained soil filter at the location designated on the plans and as specified in the typical cross section.

Materials:

Special Seed (wetland seed mix-moist) shall be “New England Erosion Control/Restoration Mix for Moist Sites” as supplied by New England Wetland Plants, Inc., Amherst, MA or an approved equal. All fertilizers, soil conditioners, limestone and other materials required to germinate, initiate and sustain seed growth shall be materials recommended by New England Wetland Plants, Inc. or other approved seed manufacturer as determined by the Resident.

Rates of Application:

Subsection (a) does not apply for Special Seed Mix.

Subsection (h) is added:

- h. The Special Seeding shall be applied at a rate of 1 Unit per 1,000 SF.. Fertilizers, limestone and other soil conditioners shall be applied at the manufacturers recommended rate. The Special Seed mix shall be applied directly on top of the horizontal surface of the Soil Filter (i.e., the engineered soil mix) and lightly raked into the mix. On the sloping surfaces surrounding the soil filter up to a height of 1.5 feet above the top of the soil filter, wetland seed shall be placed on a four inch layer of loam and lightly raked into that material. All seed shall be covered by a temporary erosion Control blanket immediately after seeding.

Maintenance and Acceptance:

The second paragraph is deleted and replaced with the following:

The Contractor shall water the special seed as necessary and shall insure the continued growth of the special seed. The Department will accept areas sown with Special Seed upon attainment of a reasonably thick stand of grass with at least 90 percent coverage, free from sizable thin or bare spots. Areas not meeting this requirement shall be reseeded and shall comply with Subsections 618.03 through 618.09.

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Basis of Payment:

The Department will pay for the accepted quantity of Special Seeding at the contract price per unit, which price shall be full compensation for furnishing and spreading seed, limestone fertilizer, and inoculants. The price shall also include any reseeding, watering, and maintenance necessary to meet the requirements of Section 618.10, Maintenance and Acceptance.

Pay Item

Pay Unit

618.143 Special Seeding – Wetland Seed Mix-Moist

Unit

SPECIAL PROVISION
SECTION 618
SEEDING
(Special Seed Mix)

Supplement SECTION 618 - SEEDING with the following:

618.01 Description: This work shall consist of furnishing and installing Seeding Method Number 2 per ***Standard Specifications*** with the substitution of 717.04 c Cellulose Fiber Mulch by 618.147 Biotic Soil Hydromulch Medium. A single dual application Biotic Soil Hydromulch Medium Erosion Proganics Dual Biotic Soil + Erosion Control or equal shall be used as directed by the Resident.

618.02 Materials: Special Seeding Wildflower Pollinator Mix shall consist of the application of Special Seed Mix, lime or liquid lime, humic acid soil conditioner and fertilizer to loamed areas as directed by the Resident Engineer. Material shall meet the requirements of the following Sections of Division 700 – Materials:

Fertilizer	717.01
Humic Acid	717.011
Agricultural Lime Stone/Liquid Lime	717.02
Seed	717.03
Biotic Soil Hydromulch Medium	717.05

A single dual application Biotic Soil Hydromulch Medium such as Erosion Proganics Dual Biotic Soil + Erosion Control or equal shall be used as directed by the Resident.

A. This section specifies the Hydraulically-applied Biotic Erosion Control HydroMulch ProGanics DUAL a blend of cross-linked, high-viscosity colloidal polysaccharide biopolymers, biochar, seaweed extract, humic acid, endomycorrhizae, beneficial bacteria and crimped, biodegradable interlocking fibers derived from regenerated plant sources are then added. The formulation will intimate bond with the soil surface allows for rapid germination and accelerated plant growth.

B. B. Special Seed Wildflower Pollinator Mix shall be certified as to mixture, germination, purity and live seed. Each variety shall conform to the following:

A. Percent germination > 80%

B. Pure Live Seed > 85%

C. Percent Purity >85%

D. Weed seed <1%

E. All seed shall be from the current year's crop.

% of Mix (by weight)	Latin Name	Common Name
10.0	Agrostis perennans	Autumn Bentgrass
2.0	Asclepias syriaca	Common Milkweed
0.1	Aster laevis	Smooth Aster
0.1	Aster oblongifolius	Aromatic Aster
3.0	Aster novae-angliae	New England Aster
0.1	Aster novi-belgii	New York Aster
0.1	Aster prenanthoides	Zigzag Aster Seeding
0.1	Baptisia australis	False Indigo
0.1	Chamaecrista fasciculata	Partridge Pea
0.1	Desmodium canadense	Showy Ticktrefoil
1.00	Echinacea pallida	Pale Coneflower
10.0	Elymus canadensis	Canada Wildrye
1.0	Liatris spicata	Blazing star
15	Lolium multiflorum	Annual Ryegrass
10.0	Lolium perenne	Perennial Ryegrass
5.0	Lupinus perennis	Perennial Lupine
3.0	Monarda fistulosa	Wild Bergamot
1.0	Oenothera fruticosa var. fruticosa	Sundrop
1.0	Penstemon digitalis	Beardtongue
0.1	Pycnanthemum tenuifolium	Narrow Leaf Mountain Mint
3.0	Rudbeckia hirta	Black-eyed Susan
30	Schizachyrium scoparium	Little Bluestem
0.1	Solidago juncea	Early Goldenrod
0.1	Solidago nemoralis	Gray Goldenrod
3.0	Trifolium repens	White Clover
1.00	Zizia aurea	Golden Alexanders
100	TOTAL	

618.021 Delivery, Storage, and Handling Deliver materials and products in UV and weather-resistant factory-labeled packages. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from damage, weather, excessive temperatures, and construction operations.

618.03 Rates of Application: shall be per **Standard Specifications** with the exception of Biotic Soil Hydromulch Medium which shall be applied at the rate of 6,500 lbs. per acre/150 lb per 1,000 sq. ft. [1 Unit].

Special Seeding Wildflower Pollinator Mix shall be Method 2 with the addition of Special Seed Mix at the Rate of ½ lb per unit.

618.04 Time of Initial Seeding: TRM seeding dates shall be April 1 to June 15 (Spring) or August 15 to September 15 (Fall).

For seeding with Biotic Soil Hydromulch Medium mix medium, and seed mix together with fertilizer and lime, and applied hydraulically in two applications from different angles for a final finished product.

Strictly comply with manufacturer's mixing and installation instructions and recommendations.
A mechanically-agitated mixing device is recommended.

Use approved hydro-spraying machine with fan-type nozzle to achieve best soil coverage. Apply from opposing directions to ensure 100% surface coverage.

Apply in a 2-Step process as follows, to be completed in immediate succession such that the seed applied in Step 1 is not left unprotected, especially if precipitation is imminent:

- Step 1: apply fertilizer, lime, and 50% of seed with a small amount of Medium for visual metering;
- Step 2: mix balance of seed with Medium and apply to a finished product layer of 150 lb /Unit.

618.10 Maintenance and Acceptance Maintenance and acceptance of seeded areas shall be as set forth in Standard Specification Section 618.10.

618.11 Method of Measurement Seeding shall be measured for payment as set forth in standard specification Section 618.11.

618.12 Basis of Payment Seeding will be paid for at the contract unit price per unit (1,000 square feet) complete in place and accepted.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
618.143 Special Seed Mix Wildflower Pollinator Mix	UNIT [1,000 sq.ft.]

SPECIAL PROVISION
SECTION 620
GEOTEXTILES
(HDPE Geomembrane)

620.01 Description The following sentence is added:

This work shall include installation of HDPE Geomembrane as shown in the Contract Drawings, or as directed by the Resident.

The following Subsections are added:

620.02 Materials The following paragraphs are added:

HDPE Geomembrane shall be Poly-Flex 40 mil. High Density Polyethylene (HDPE) as manufactured by Poly-Flex, Inc., 2000 W. Marshall Drive, Grand Prairie, TX 75051, (972) 647-4374, Fax (972) 988-8331, or an approved equal.

620.021 Contractor Shop Drawing Submittal (twenty work days prior to first delivery)

At least twenty work days prior to first delivery of material to the site, the Contractor shall submit the following:

1. A sample and specification sheet for the proposed HDPE Geomembrane.
2. A narrative of means, methods and materials for welding to create seams for adjacent sheets of HDPE Geomembrane and to seal penetrations in the HDPE Geomembrane. The sealant material (typically asphalt based, trowel applied mastic or pre-fabricated HDPE boots that are welded to the adjacent HDPE Geomembrane liner) should be compatible for use with the HDPE Geomembrane per the requirements of the membrane manufacturer.
3. Means and methods for attaching/welding HDPE Geomembrane to panel walls, abutments, EPS and/or steel sheeting.

A review of the shop drawings or revised shop drawings will be completed by the Department within ten working days of receipt. If revisions are required, the Contractor shall submit the revised shop drawings for review. EPS block shall not be shipped to the site prior to notification that all shop drawings related to EPS fill have been approved for construction.

620.03 Placement The following paragraphs are added:

HDPE Geomembrane shall be placed above the uppermost layer of EPS blocks, down the sides of exterior EPS blocks, and sealed to the precast concrete panel walls and other structures as shown on the Contract Drawings.

HDPE Geomembrane deployment shall proceed only when ambient temperatures are between 32°F to 104°F. Geomembrane shall not be placed during precipitation or moisture of any type (e.g., fog, rain, dew), or in the presence of excessive winds, as determined by the Resident. Observation of temperature, humidity, precipitation, and wind should be noted to ensure that the weather conditions are acceptable prior to HDPE Geomembrane placement.

620.04 Overlap The following sentence is added:

Geomembrane panels must have finished minimum overlap of four inches for hot shoe fusion welding and three inches for extrusion welding.

620.05 Seams The following paragraphs are added:

Approved seaming processes are hot shoe fusion and extrusion welding. On side slopes, seams shall be oriented in the general direction of maximum slope, (i.e., oriented down, not across slope). In corners and odd-shaped geometric locations, the number of field seams shall be minimized. Seams shall be aligned with the least possible number of wrinkles and “fishmouths”. If a fishmouth or wrinkle is found, it shall be relieved and cap-stripped.

Penetrations through the geomembrane panels must be sealed using either asphalt-based mastic or pre-fabricated HDPE boots to provide a tight seal around the penetrating element. Alternative methods for sealing penetrations shall be approved by the Department during the submittal review process.

Cleaning solvents may not be used unless the product is approved by the liner manufacturer.

Field test seams may be conducted on the liner in accordance with the manufacturer’s recommendation to verify that seaming conditions are satisfactory.

620.09 Method of Measurement The following paragraph is added:

The words, “HDPE Geomembrane” shall be added after the word “geotextiles” in the first sentence of the first paragraph.

620.10 Basis of Payment The following paragraph is added:

The words, “HDPE Geomembrane” shall be added after the word “geotextiles” in the first sentence of the first paragraph.

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Payment will be made under:

<u>Pay Item</u>
620.6012 HDPE Geomembrane

<u>Pay Unit</u>
Square Yard

SPECIAL PROVISION
SECTION 620
GEOTEXTILES
(Drainage Geocomposite)

Description This work shall consist of furnishing and placing Drainage Geocomposite and Weep Hole Connections as specified herein, as shown on the plans, and as directed by the Resident. Geocomposite Drainage shall consist of a formed polystyrene core covered on one side with a non-woven, needle-punched polypropylene filter fabric.

Materials Drainage Geocomposite must be a composite system consisting of permeable geotextile and three-dimensional polymeric core providing equal flow in two perpendicular directions.

The Contractor shall furnish and install a Drainage Geocomposite as a hydrostatic water relief system. The Drainage Geocomposite shall be tied in to a water discharge system or weep holes. The weep holes shall be fitted with Weep Hole Connections, that effectively drain water from the geocomposite through the weep holes. The Weep Hole Connections may consist of Sitedrain AWD-102, Option 2 – Drain Gate connections, or equivalent.

Drainage Geocomposite work shall consist of furnishing all materials and labor required for placing and securing Drainage Geocomposite material, connection pipes, footing drains, weep holes and Weep Hole Connections, and horizontal drains, as shown on the Plans or as directed by the Resident.

Quality Assurance Testing Drainage Geocomposite must be backed by a Letter of Certification from the Manufacturer that the flow rate in the plane of the core meets or exceeds the specified flow given herein and determined by ASTM D4716.

Submittals The required submittals are as follows:

A. Submit Letter of Certification that material meets or exceeds physical properties per the following table.

B. The design layout of the Drainage Geocomposite including type, spacing, overlap, collection drainage, and other information.

Product Specification The Drainage Geocomposite shall consist of Miradrain 6000XL, Amerdrain 500, or equal that meets or exceeds the following properties:

TYPICAL PROPERTIES	Typical Value	Test Method
Fabric Properties		
Material	Non-woven Polypropylene	
Grab tensile strength	100 lbs	ASTM D4632
Puncture strength	65 lbs	ASTM D4833
AOS	70 sieve	ASTM D4751
Permeability	0.3 cm/sec	ASTM D4491
Core properties		
Material	Polystyrene	
Compressive strength	15,000 psf	ASTM D1621 (Mod.)
Product properties		
Flow capacity per unit width ¹	16 gpm/ft	ASTM D4716

¹ In Plane Flow Rate, Gradient = 1.0

All numeric values in the above table, except AOS, represent minimum average roll values in the weakest principal direction (i.e., average test results of any roll in a lot sampled for conformance or quality assurance testing shall meet or exceed the minimum values). Values for AOS represent maximum average roll values.

Placement Requirements The Drainage Geocomposite shall be installed by methods approved by the Manufacturer.

The installer shall place the Drainage Geocomposite at the elevations and alignment shown on the Plans, as noted and as directed by the Resident. The Drainage Geocomposite shall be installed with the fabric side toward the soil.

When installing the Drainage Geocomposite:

- Start at the low point of the wall and attach the panel to the wall.
- Weep Hole Connections shall be installed in conjunction with the Drainage Geocomposite.
- Adjacent panels may be:
 - (1) Joined together with the lateral edge of the next/upper panel placed over the flanged edge of the lower panel;
 - (2) Overlap the dimples of the preceding panel onto the dimples of the previous panel by 2 inches.

The Drainage Geocomposite from the adjacent panels shall overlap the preceding panel. The overlap fabric can be adhered with the Manufacturer's approved tape or duct tape. The Drainage Geocomposite shall be attached to non-waterproofed walls with contact adhesive, tape or concrete nails. The Drainage Geocomposite will be permanently secured prior to completion of backfilling.

Backfilling shall be placed within seven days of Drainage Geocomposite installation. Backfill to at least 6 inches above the top edge of the Drainage Geocomposite.

The top or terminal edge of the Drainage Geocomposite shall be covered by applying a piece of filter geotextile, meeting the requirements of MaineDOT Standard Specification Section 722.03, over the edge sufficient in width to prevent soil or other foreign construction materials from intruding into or behind the Drainage Geocomposite panels.

If necessary, the Drainage Geocomposite and filter geotextile shall be positioned by hand to minimize wrinkles.

Unanticipated subsurface drainage features exposed in the excavation shall be drained independently of the Drainage Geocomposite.

Backfill Requirements Structural backfill as shown on the Plans shall be placed immediately against the Drainage Geocomposite. Care shall be taken during the backfill operation not to damage the geotextile surface of the drain. The backfill shall be placed and compacted in accordance with the project Plans and specifications. Care shall also be taken to avoid excessive settlement of the backfill material. The Drainage Geocomposite, once installed, shall not be exposed for more than seven days prior to backfilling.

Storage Requirements The Contractor shall check the Drainage Geocomposite upon delivery to ensure that the proper material has been delivered. The Contractor shall be responsible for the storage of the Drainage Geocomposite material at the site.

Drainage Geocomposite shall be provided in rolls wrapped with a protective covering and stored in a manner, which protects the material from temperatures greater than 140° F, mud, dirt, dust, and debris. Protective wrapping shall not be removed until immediately before the Drainage Geocomposite is installed.

Drainage Geocomposite material shall be delivered and stored in original packages bearing the Manufacturer's name. The fabric shall not be exposed to direct sunlight for more than seven days during its storage and installation. The Drainage Geocomposite material shall be stored in a clean, dry environment out of the pathway of construction equipment. Each roll of Drainage Geocomposite material shall be labeled to identify the production run.

Repair Requirements Prior to the placement of the Drainage Geocomposite each roll shall be inspected for damage resulting from construction.

Any ripped, torn, or damaged areas of the Drainage Geocomposite material shall be removed and patched by placing a patch large enough to cover the damaged area and provide a sufficient overlap on all sides to fasten. The patch shall be secured to the original Drainage Geocomposite material using the Manufacturer's approved methods. If the hole width or tear width across the panel is more than 50% of the width of the material, the damaged area shall be cut out and the two

portions of the Drainage Geocomposite material shall be joined in accordance with the placement requirement.

If the damage occurs to the Drainage Geocomposite material during shipping, handling, or installation, the damaged areas shall be cut out and a repair section of Drainage Geocomposite shall be installed at the Contractor's expense.

Method of Measurement Drainage Geocomposite installation shall be measured by the square yard in place and accepted. Measurements will not be made for overlaps, patches, and repairs.

Basis of Payment The accepted quantity of Drainage Geocomposite installed shall be paid for at the contract unit price per square yard, which shall be full compensation for off-loading, inspection, storage, materials, equipment, and any incidentals necessary to complete the installation.

The cost and placement of the drainage collection pipe will be incidental to the installation of the Drainage Geocomposite.

Payment will be made under:

<u>Pay Item</u>	<u>Unit</u>
620.66 Drainage Geocomposite	Square Yard

SPECIAL PROVISIONS
SECTION 621
LANDSCAPING
Plant Species Specification and Quantities List

The following list of items provides the estimated quantities for use on this project. The scientific name of the plant material is provided along with the common name in parenthesis.

The contractor shall follow **Standard Specifications** Rev. November, 2014 for landscape materials and installation procedures (sec. 621).

The Resident Engineer or **MaineDOT** Landscape Architect or designee will be available to inspect plant materials and inspect planting at that time.

This planting will primarily be in newly built fill slopes. The Prime Contractor will provide Loam/Compost Mix to adjust finish grade and minimize digging for planting following standard specs with amendments per Standard Specifications to expedite planting as directed by the Landscape Architect.

A Two-Year Landscape Warranty Bond will be required, with Establishment Item for two-year warrantee payable in the amount of the full value of the final plantings.

PLANT MATERIALS

ITEM	Description	Unit	Quant.	Total
621.019	Evergreen Trees 2' – 3' Group A B&B/Cont.	Ea.		36
	<i>Pinus strobus</i> (Eastern White Pine)		36	
621.02	Evergreen Trees 2' – 3' Group B B&B/Cont.	Ea.		12
	<i>Picea abies</i> (Norway Spruce)		12	
621.025	Evergreen Trees 3' – 4' Group A B&B/Cont.	Ea.		6
	<i>Pinus strobus</i> (Eastern White Pine)		6	
621.026	Evergreen Trees 3' – 4' Group B B&B/Cont.	Ea.		12
	<i>Picea abies</i> (Norway Spruce)		12	
621.027	Evergreen Trees 3' – 4' Group C B&B/Cont.	Ea.		12
	<i>Pinus nigra</i> (Austrian Pine)		12	
621.032	Evergreen Trees 4' – 5' Group B B&B	Ea.		12
	<i>Picea abies</i> (Norway Spruce)		12	
621.033	Evergreen Trees 4' – 5' Group C B&B	Ea.		12
	<i>Pinus nigra</i> (Austrian Pine)		12	
621.038	Evergreen Trees 5' – 6' Group B B&B	Ea.		40
	<i>Picea abies</i> (Norway Spruce)		40	
621.039	Evergreen Trees 5' – 6' Group C B&B	Ea.		20
	<i>Pinus nigra</i> (Austrian Pine)		13	
	<i>Picea omorica</i> (Serbian Spruce)		7	
621.044	Evergreen Trees 6' – 8' Gr. B B&B	Ea.		18

	<i>Picea abies</i> (Norway Spruce)		18	
621.110	Small Decid. Tree 3' – 4' Group A Cont.	Ea.		35
	<i>Betula allegheniensis</i> (Yellow Birch)		20	
	<i>Betula lenta</i> (Sweet Birch)		15	
621.111	Medium Decid. Tree 3' – 4' Group B Cont.			36
	<i>Carya ovata</i> (Shagbark Hickory)		15	
	<i>Celtis occidentalis</i> (Hackberry)		15	
	<i>Gymnocladus dioicus</i> (Kentucky Coffee Tree)		6	
621.112	Medium Decid. Trees 4' – 5' Group A Cont.	Ea.		40
	<i>Betula allegheniensis</i> (Yellow Birch)		20	
	<i>Betula lenta</i> (Sweet Birch)		20	
621.1121	Small Decid. Trees 4' – 5' Group B Cont.	Ea.		36
	<i>Celtis occidentalis</i> (Hackberry)		12	
	<i>Gymnocladus dioicus</i> (Kentucky Coffee Tree)		12	
	<i>Catalpa Speciosa</i> (Northern Catalpa Tree)		12	
621.12	Small Decid. Trees 5' – 6' Group A Cont.			24
	<i>Betula allegheniensis</i> (Yellow Birch)		12	
	<i>Betula lenta</i> (Sweet Birch)		12	
621.121	Small Decid. Trees 5' – 6' Group B Cont.			12
	<i>Gymnocladus dioicus</i> (Kentucky Coffee Tree)		12	
621.178	Med. Decid. Tree 6' – 8' Group A Cont.			12
	<i>Betula lenta</i> (Sweet Birch)		6	
	<i>Betula nigra</i> 'Heritage' 'Heritage' River Birch		6	
621.179	Med. Decid. Tree 6' – 8' Gr. B Cont.			24
	<i>Catalpa speciosa</i> (Northern Catalpa)		8	
	<i>Nyssa sylvatica</i> (Sweet Gum)		8	
	<i>Gymnocladus dioicus</i> (Kentucky Coffee Tree)		8	
621.18	Medium Deciduous Tree Group C 6' – 8' Multistem	Ea.		7
	<i>Betula nigra</i> 'Heritage' ('Heritage' River Birch)		7	
621.186	Med. Decid. Tree 8' – 10' Gr. C Cont.			24
	<i>Celtis occidentalis</i> (Hackberry)		6	
	<i>Nyssa sylvatica</i> (Sweet Gum)		6	
	<i>Betula allegheniensis</i> (Yellow Birch)		6	
	<i>Gymnocladus dioicus</i> (Kentucky Coffee Tree)		6	
621.195	Med. Decid. Trees 1 3/4" – 2" Group A B&B/Cont.	Ea.		3
	<i>Betula allegh.</i> (Yellow Birch)		3	
621.197	Med. Decid. Trees 1 3/4" – 2" Gr. C B&B/Cont.	Ea.		10
	<i>Celtis occidentalis</i> (Hackberry)		5	
	<i>Gymnocladus dioicus</i> (Kentucky Coffee Tree)		5	
621.389	Evergreen Shrubs 15" – 18" Group A Cont.	Ea.		36
	<i>Pinus mugho mugho</i> (Dwarf mugho Pine)		36	

621.424	Evergreen Shrubs 4' – 5' Group B	B&B	Ea.		8
	<i>Taxus 'Hatfieldii'</i> ('Hatfield Yew)			8	
621.450	Evergreen Shrubs 5' – 6' Group A	B&B	Ea.		50
	<i>Thuja 'Nigra'</i> (Arborvitae/Cedar)			35	
	<i>Juniperus virginiana</i> (Red Cedar)			15	
621.451	Evergreen Shrubs 5' – 6' Group B	B&B	Ea.		36
	<i>Taxus x media. Hicksii/Hatfieldii</i> (Spreading Yew) B&B			36	
621.5351	Deciduous Shrub 15" – 18" Gr. A Cont				24
	<i>Spiraea latifolia</i> (Meadowsweet)		Ea.	24	
621.54	Deciduous Shrub 18" – 24" Gr. A Cont.				54
	(<i>Cornus sericea Isanti</i>) Dwarf Red-twig Dogwood		Ea.	36	
	<i>Forsythia susp. 'sieboldii'</i> (Weeping Forsythia)			18	
621.546	Deciduous Shrub 2' – 3' Gr. A Cont.				24
	<i>Myrica pensylvanica</i> (Northern Bayberry)		Ea.	24	
621.554	Deciduous Shrub 3' - 4' Gr. C Cont. Multistem				12
	(<i>Amelanchier canadensis</i>) Serviceberry		Ea.	12	
621.558	Deciduous Shrub 4' -5' Gr. A Cont. Multistem				50
	(<i>Rhus typhina</i>) Staghorn Sumac		Ea.	50	
621.80	Establishment Period Two-Year Landscape Warranty Bond		LS	1	1

Portland
WIN 21745.00
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March 3, 2020

SPECIAL PROVISION
SECTION 634
HIGHWAY LIGHTING
(Luminaires – LED)

634.093 Basis of Payment: This section shall be amended with the addition of the following:

<u>Pay Item</u>	<u>Pay Unit</u>
634.2042 LED Luminaires	Each

SPECIAL PROVISION
SECTION 643
TRAFFIC SIGNALS
(Rectangular Rapid Flashing Beacon)

The Contractor shall install rectangular rapid flashing beacons as shown on the plan and details. Their installation shall be as described in this special provision.

1. Beacon Dimensions and Placement in Sign Assembly:

- a. Each rectangular rapid flashing beacon (RRFB) shall consist of two rectangular-shaped yellow indications (in each direction), each with an LED-array based light source. Each RRFB indication shall be a minimum of approximately 5 inches wide by approximately 2 inches high. Flashing lights and signage shall be in both directions of vehicle travel.
- b. The two RRFB indications shall be aligned horizontally, with the longer dimension horizontal and with a minimum space between the two indications of approximately seven inches (7 in), measured from inside edge of one indication to inside edge of the other indication.
- c. The outside edges of the RRFB indications, including any housing, shall not project beyond the outside edges of the W11-15 or W11-2 signage attached to the beacon assembly.
- d. As a specific exception to 2009 MUTCD Section 4L.01 guidance, the RRFB shall be located between the bottom of the crossing warning sign and the top of the supplemental downward diagonal arrow plaque, rather than 12 inches above or below the sign assembly.

2. Beacon Flashing Requirements:

- a. When activated, the two yellow indications in each RRFB shall flash in a rapidly alternating "wig-wag" flashing sequence (left light on, then right light on).
- b. As a specific exception to 2009 MUTCD Section 4L.01 requirements for the flash rate of beacons, RRFBs shall use a much faster flash rate. Each of the two yellow indications of an RRFB shall have 70 to 80 periods of flashing per minute and shall have alternating but approximately equal periods of rapid pulsing light emissions and dark operation. During each of its 70 to 80 flashing periods per minute, one of the yellow indications shall emit two rapid pulses of light and the other yellow indication shall emit three rapid pulses of light.
- c. The flash rate of each individual yellow indication, as applied over the full on-off sequence of a flashing period of the indication, shall not be between
5 and 30 flashes per second, to avoid frequencies that might cause seizures.
- d. The light intensity of the yellow indications shall meet the minimum specifications of

Society of Automotive Engineers (SAE) standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005.

3. Beacon Operation:

- a. The RRFB, normally dark, shall initiate operation only upon pedestrian actuation, and shall cease operation at a predetermined time after the pedestrian actuation.
- b. All RRFBs associated with a given crosswalk shall, when activated, simultaneously commence operation of their alternating rapid flashing indications and shall cease operation simultaneously.
- c. A pedestrian instruction sign with the legend PUSH BUTTON TO TURN ON WARNING LIGHT should be mounted adjacent to or integral with each pedestrian pushbutton.
- d. The duration of a predetermined period of operation of the RRFBs following each actuation shall be 30 seconds.
- e. Unless otherwise noted, each pole will be outfitted with a 45 watt solar panel, a NEMA 4X aluminum pole mount cabinet and a 35 hr battery. A padlock with a four number tumbler resettable combination shall be provided for each cabinet.
- f. Communication between the devices shall be via spread spectrum wireless.

4. Pole and Foundation

- a. Shall be mounted on a pedestal pole with luminaire unless otherwise noted.
- b. Each pole shall be anchored to a pre-cast 18-inch diameter foundation.

643.18 Method of Measurement

Rectangular rapid flashing beacons installed with signs and equipment shown on the plans and details at each location shall constitute a single installation. Each installation will be measured for payment by each in place.

643.19 Basis of Payment

The rectangular rapid flashing beacon will be paid for by each at the contract price, which payment will be full compensation for furnishing all materials including, but not limited to the LED-arrays, flasher, timer, controller cabinets, wiring, pedestrian push buttons, solar panels and equipment, batteries, radio devices and all appurtenances and incidentals required for a complete and functioning installation and for furnishing all tools and labor necessary for completing the installation.

Pedestal pole, foundation, and crosswalk signs will be paid for separately and are not considered part of the RRFB pay items.

Payment will be made under:

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<u>Pay Item</u>		<u>Pay Unit</u>
643.62	Rectangular Rapid Flashing Beacon	Each

SPECIAL PROVISION
SECTION 643
TRAFFIC SIGNALS
(Temporary Traffic Signal)

643.01 Description The following paragraphs are added:

The work includes the installation of a temporary traffic signal at the intersection of Route 9 and Lunt Road in Falmouth with video detection.

Signal heads shall be mounted on a temporary structure supplied by the Contractor and approved by the Resident. Two heads shall face traffic in each direction. All signal heads shall have 12" R-Y-G circular LED indications with 5" backplates and yellow retroreflective tape along all borders.

Pay Item

Pay Unit

643.72 Temporary Traffic Signal

Lump Sum

SPECIAL PROVISION
SECTION 643
TRAFFIC SIGNALS

The provisions of Section 643 of the Standard Specifications shall apply with the following additions and modifications:

643.01 Description This project will include installation of a new traffic control signal at the intersection of Veranda Street Wordsworth, I-295 NB Off Ramp and I-295 SB On Ramp as well as Signal Modification at Veranda Street and Marine Hospital Road.

The new, group controlled, signalized intersection controlling the I-295 NB Off and SB On Ramp intersections will include, but is not limited to, the following signalization equipment: Advanced Traffic Signal Control Cabinet (ATCC) with rack mount ATC controller, mast arm poles with and without luminaires, pedestrian signal heads and push buttons, vehicular signal heads, retroflective backplates, wiring, signal cable, video-based vehicle detection, and all appurtenances and incidentals required for a complete functioning traffic signal installation

Upgraded signal equipment at the existing Veranda Street and Marine Hospital Road intersection will include, but is not limited to: pedestal poles, pedestrian signal heads with countdown timers and push buttons, wiring, signal cable, and all appurtenances and incidentals required for complete functioning installations. All pedestrian signal heads shall be upgraded to countdown type with accessible pedestrian signal (APS) push buttons. Pedestrian signal housing shall be painted black and indications shall be energy efficient light emitting diodes (LED's). Pedestrian equipment is to be installed under the guidelines of the Americans with Disabilities Act (ADA) having work integrated with curb ramp and detectable warning field improvements.

Backplates will be provided for all vehicle signal heads. The backplates shall be a minimum of 5-inches with louvers for one-way, three-, four- and five-section, 12-inch signal heads.

All traffic signal controller timing parameters shall be programmed to provide optimized free operations.

643.021 Revised Materials Materials shall meet the requirements in the following Special Provision to Section 718 of Division 700 – Materials:

Controllers (Entire section revised for ATC)	718.07
Controller Cabinet (Entire section revised for ATCC)	718.08
Pedestrian Crossing System	718.14

643.04 Poles Each mast arm pole shall have black powder coating with a huntington base. A luminaire will be installed on the top of the mast arm pole as noted. Refer to plan notes for additional requirements.

643.09 Service Connection Add the following:

A total of four (4) 10' service ground rods shall be installed and properly connected together in the cabinet foundation if the service meter trim is not grounded.

The Contractor shall be responsible for grounding the system to 5 ohms or less. The grounding shall be performed using a ground meter with reference grounds. In the event that a 5 ohm reading is not achieved, the contractor shall install a chemical ground electrode (Chem-Rod or approved equal) in close proximity to the cabinet. The chemical ground electrode shall be properly connected to the four rod grounding system in the cabinet. The location for the chemical ground electrode installation shall be approved by the Resident before installation. All testing shall be done in the presence of the Resident.

643.19 Basis of Payment Traffic signals will be paid for at the contract lump sum price, which payment will be full compensation for furnishing and installing all materials, including but not limited to: ATCC cabinet with controller, Cabinet Monitor Unit (CMU), Auxiliary Display Unit (ADU) and all associated software required; vehicular signal head assemblies with LED lamps and retroreflective backplates; wiring and signal cable; fiber optic cable, patch panels and switch gear and all appurtenances and incidentals required for a completely functioning traffic signal installation, including the furnishing of all labor and equipment necessary to complete the installation, except those items of work and materials specifically noted to be covered by other pay items of the contract.

Video Detection System will be paid for at the contract lump sum price for Item 643.83, which payment will be full compensation for furnishing and installing all materials, including but not limited to video camera units for stop line detection, advance detection hardware with dilemma zone protection, video processing unit, ancillary interface boards and cabling, and all other appurtenances and incidentals required for a completely functioning installation with capability for remote monitoring and adjustment.

Foundations, conduit, interconnect and junction boxes will be paid under applicable Section 626 pay items. LED luminaires to be mounted on top of mast arm pole columns will be paid by the unit Each under Item 634.2042. All other work and materials necessary for lighting of the intersection will be paid by the Lump Sum under Item 634.160. Mast arm poles will be paid by the unit Each under Item 643.91. Overhead signage attached to traffic signal mast arms will be paid by the square foot of sign face under Item 645.271.

Payment will be made under the following:

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<u>Pay Item</u>	<u>Pay Unit</u>
643.71 Traffic Signals Modification: Veranda St./Marine Hospital Road	Lump Sum
643.80 Traffic Signals: Veranda St./Wordsworth/On Ramp/Off Ramp	Lump Sum
643.83 Video Detection System: Veranda St./Wordsworth/On Ramp/Off Ramp	Lump Sum

Highway Lighting Quality Control Checklist

Subsection 634.09 Field Testing

Project Pin # _____

Location (if multiple services, please be specific)- _____

Grounding Electrode Resistance at service _____

Number of Circuits _____

Hand-Off-Auto Switch? _____

Circuit #1

Open Circuit Resistance- (Ohm out both hot legs at the cabinet while they are shorted together at the last pole and the fuse holders are disconnected at each pole) _____

Megger Test- (Meg out both hot legs to ground at the cabinet while they are shorted together at the last pole and the fuse holders are disconnected at each pole) _____

Current draw- (during normal operation)

Leg #1

Leg #2

Operating Voltage at last pole _____

Circuit #2

Open Circuit Resistance- (Ohm out both hot legs at the cabinet while they are shorted together at the last pole and the fuse holders are disconnected at each pole) _____

Megger Test- (Meg out both hot legs to ground at the cabinet while they are shorted together at the last pole and the fuse holders are disconnected at each pole) _____

Current draw- (during normal operation)

Leg #1

Leg #2

Operating Voltage at last pole _____

I, _____, certify that this work was done in accordance with subsection 643.14 and current NEC _____ guidelines, and when tested, was functioning as intended.
(YEAR)

Electrician's Signature _____

Electrician's License # _____

Highway Lighting Quality Control Checklist

Subsection 634.09 Field Testing

Project Pin # _____

Location (if multiple services, please be specific)- _____

Grounding Electrode Resistance at service _____

Number of Circuits _____

Hand-Off-Auto Switch? _____

Circuit #3

Open Circuit Resistance- (Ohm out both hot legs at the cabinet while they are shorted together at the last pole and the fuse holders are disconnected at each pole) _____

Megger Test- (Meg out both hot legs to ground at the cabinet while they are shorted together at the last pole and the fuse holders are disconnected at each pole) _____

Current draw- (during normal operation)

Leg #1

Leg #2

Operating Voltage at last pole _____

Circuit #4

Open Circuit Resistance- (Ohm out both hot legs at the cabinet while they are shorted together at the last pole and the fuse holders are disconnected at each pole) _____

Megger Test- (Meg out both hot legs to ground at the cabinet while they are shorted together at the last pole and the fuse holders are disconnected at each pole) _____

Current draw- (during normal operation)

Leg #1

Leg #2

Operating Voltage at last pole _____

I, _____, certify that this work was done in accordance with subsection 643.14 and current NEC _____ guidelines, and when tested, was functioning as intended.
(YEAR)

Electrician's Signature _____

Electrician's License # _____

Traffic Signal Quality Control Checklist

Subsection 643.14 Field Testing

Project Pin # _____

Grounding Electrode Resistance at service _____

ID tags on loop amps / detector cards? _____

Location _____

Street Approach	_____
Loop #	_____ Resistance _____
Phase #	_____ Meg to ground _____
L,C, or R Lane	_____ Amount of bondo covering loop _____
Pulse or Presence	_____

Street Approach	_____
Loop #	_____ Resistance _____
Phase #	_____ Meg to ground _____
L,C, or R Lane	_____ Amount of bondo covering loop _____
Pulse or Presence	_____

Street Approach	_____
Loop #	_____ Resistance _____
Phase #	_____ Meg to ground _____
L,C, or R Lane	_____ Amount of bondo covering loop _____
Pulse or Presence	_____

I, _____, certify that this work was done in accordance
with subsection 643.14 and current NEC _____ guidelines, and
(YEAR)
when tested, was functioning as intended.

Electrician's Signature _____

Electrician's License # _____

SPECIAL PROVISION
SECTION 643
TRAFFIC SIGNALS
(Dynamic Speed Feedback Sign)

643.01 Description The following paragraphs are added:

This specification summarizes the requirements for proposed post mounted, Dynamic Speed Feedback Signs, and the associated requirements of supplying this signs to the Department.

The sign shall be installed just south of Martin's Point Bridge as shown on the Plans. The sign will be used year round at must be completely suitable for operation in sun, rain and snow with temperatures ranging from -20 degrees Fahrenheit to 120 degrees Fahrenheit without any maintenance. In addition to technical specifications, this specification details vendor supplied documentation, equipment, and responsibilities for installation.

The sign shall consist of a radar, display board, power system, and a controller assembly, all mounted in a NEMA 4X cabinet able to be deployed by a single person. The Dynamic Speed Feedback Signs shall meet these specifications.

Conformity with Standards

Unless otherwise provided in the contract, all materials shall conform to the following standards, as applicable.

- A. MDOT
- B. AASHTO
- C. ASTM
- D. AREMA
- E. Standard conditions and special conditions contained in any permit
- F. Manual on Uniform Traffic Control Devices (MUTCD)
- G. Americans with Disabilities Act (ADA)

Material Quality

Materials and manufactured products shall be new unless otherwise specified, free from defects, and in conformity with the contract. If there is no applicable standard set forth in this Contract for a particular item, then the item shall be in accordance with industry standards prevailing at the time of bid. The Department has the authority to inspect all Materials and every detail of the Work.

When material is fabricated or treated with another material or where any combination

of materials is assembled to form a finished product, any or all of which are covered by specifications, the Department may reject the finished product if any of the components do not comply with the specifications. The Department may reject materials not con-forming to the Specifications at any time.

Material Specification

The following requirements and criteria for these units shall be met completely.

DISPLAY SPECIFICATIONS

Dimensions: The traffic facing surface shall not exceed 30" Horizontal and 36" Vertical (MUTCD speed limit dimensions for multi-lane road)

Character Display: The display shall be capable of displaying two (2) 15" high characters

Message Display: The display shall be capable of displaying the message "Slow Down"

Weight: The sign unit including the sign and dynamic brick with power cord shall be less than 40lbs

Finish: The inside of the display enclosure shall be painted black to facilitate heat dissipation.

Glazing: If the display modules are not weatherproof, they shall be protected by a watertight sheet of glazing.

General: The unit shall meet the requirements of the MUTCD.

DATA SYSTEM

Display: The unit shall be able to accurately display the speed of approaching vehicles.

Alert: The unit shall have a method of informing the driver they are exceeding the set speed limit. (flashing, written message, etc.)

Logging: The speed and time of all approaching vehicles shall be logged and stored in an easily accessible format.

Stealth: The sign shall be capable of logging vehicles at all speeds without activating the display

Data Collection: The data shall be accessible by an external device. Data collection software will be supplied with the sign which will provide for data collection, report generation with tabular and graphical presentation, local data storage, and data dissemination.

Sign Programming: Any software required to program the sign shall be supplied with the sign.

The sign shall be able to be set to different trigger speeds.

POWER SYSTEM

Power System: The sign shall be powered by batteries that can be fully recharged within one hour by 120 volt AC power.

Batteries: The number and amp hour rating of batteries shall be sufficient to operate the speed sign for 168 hours, at maximum brightness, continuously with no recharging and no solar assist. This load shall include all communications and control devices. Low voltage cutoff which may disconnect the batteries, before full discharge, will be included in this requirement. This will be confirmed with field measurements of actual current draw.

Power control circuitry: The power control circuitry shall protect the batteries from overcharging by the 120-volt and solar chargers. It shall also protect the all components from damage in the event of a short circuit, overload, or similar problem. It shall disconnect the load from the batteries when further discharging could damage the batteries.

Battery Type: Any batteries shall be of a composition that will allow the battery to recharge at low temperatures (below 32°), normally a lead acid base.

Solar Power: the solar panels will be capable of charging the batteries from a single hour of sunlight. Any connections between the solar panel and sign will be of a type that can be connected and disconnected without the use of tools (plug and play).

INSTALLATION

A permanent mounting structure shall be attached to a wooden post so as other components (radar detector, display, power system, communications) can easily be installed/ removed by a single person.

All parts of the installation required for operation shall be portable, in that they can be installed / removed by a single average person in under 30 minutes (not including permanent mounting devices). **Banding is not an accepted type of mounting.**

It shall be possible to mount/ remove the portable sections of the sign with minimal unpowered hand tools (screwdriver, wrench)

A method of locking the sign to the post/ mounting structure shall be used so that the sign cannot be removed by unauthorized individuals.

TESTING

The manufacturer shall test the signs. The manufacturer shall develop the test procedures and revise them as necessary to meet the Engineer's approval. The

manufacturer shall conduct all the tests in the test plans and shall correct any deficiencies found.

The manufacturer shall contact the Engineer at least two weeks in advance of the proposed testing date and shall arrange for testing to begin at a mutually convenient time. All testing will be done on the same day (or two days, if necessary) at a location picked by the Department. The manufacturer shall provide all materials and equipment needed for testing and shall prepare a written report of the test results.

Sign Testing: The test procedure shall be designed to uncover manufacturing defects and shipping damage of all types. The test shall include a visual inspection of the sign. Among the aspects that must be tested are the following:

All diagnostic routines provided by the manufacturer.

Proper operation of every pixel, including uniform brightness at all brightness levels and proper current consumption.

Proper wiring of the display modules, checked by displaying a 2 digit number

Appropriate display brightness for day and night conditions, and brightness when the sun at its worst condition for the location.

Proper aiming of the display modules.

The test plan shall test every interface, feature, and function of the software, including features present but not required by these specifications. The testing shall demonstrate that the software deals appropriately with communication errors and operator errors. The testing shall confirm that the signs can be monitored and controlled from remotely by computers on which software was installed.

SUPPORT

Technical Support: Phone numbers provided for technical support must be attended by a person who can answer questions or promptly find the answer to questions. An answering machine or answering service does not constitute technical support. The telephone support required by these specifications shall be provided at least eight hours a day on all work days.

On-Site Support: The manufacturer shall have a representative present when the installation contractor installs the first sign. The representative shall observe the installation, provide additional training to the contractor as required, and ensure that the sign is installed correctly. If the manufacturer's representative is not confident that the contractor can install the remaining signs without assistance, the representative shall immediately notify the Engineer.

Telephone Support during Installation: The manufacturer shall provide telephone support to the installation contractor during installation. This support shall be available until all the signs have been installed.

Telephone Support for Operation and Maintenance: The manufacturer shall provide telephone support to the Department's operations and maintenance staff for a period of one year following the acceptance of the signs.

PAINT

All metal shall be free of rust and mill scale and prepared (beadblasted) for primer and finish paint coat.

A two (2) part epoxy primer shall be applied to prepared metal surfaces to the minimum thickness of 3-5 mils dry.

All paint and primer shall be lead free.

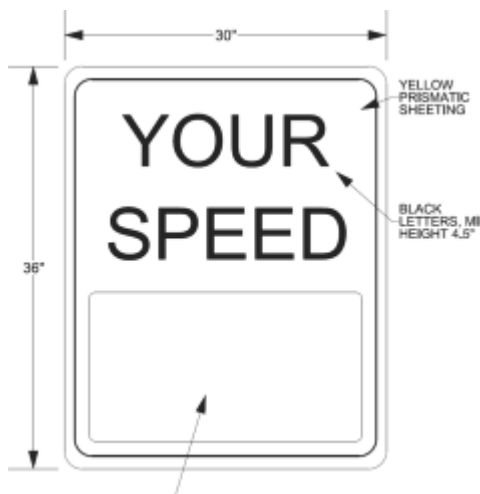
WARRANTY

One year parts and labor, or standard manufactures warranty shall apply whichever is greater. Warranty shall begin on the date unit is actually put into service by MDOT Fleet Services.

GENERAL

Wiring: All wiring shall be inaccessible to vandals. All external wiring shall be enclosed in liquid-tight flexible conduit or flexible non-metallic tubing. All wiring and connections shall be of sufficient size to support all maximum currents continuously with a maximum of 5% percent voltage drop, including an "all pixels ON" display, for at least three (3) hours. All wiring installation shall meet or exceed National Electrical Code Articles 300 and 310 methods and requirements.

Labeling: All terminals and connections shall be clearly labeled. Labels shall be permanent.



15" Character Display

643.19 Basis of Payment The following paragraphs are added:

The accepted quantity of Dynamic Speed Feedback Signs will be paid for by Each and will be full compensation for the speed feedback sign, mounting hardware for wood posts, any software/firmware, solar panels, batteries, mounting hardware for solar panels.

Payment will be made under:

<i>Pay Item</i>	<i>Description</i>	<i>Pay Unit</i>
643.77	Dynamic Speed Feedback Signs	Each

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC

This section is amended by the addition of the following:

652.1 Description: Traffic control and traffic phasing plans have been detailed in the Contract Documents. Alternate traffic control plans may be developed by the Contractor and shall be submitted to the Department for review and approval. The Contractor shall submit Traffic Control Plans (TCP) for any lane closures required that are not detailed in the Contract Plans. Submittals shall meet the requirements of Subsection 652.3.3 Submittal of Traffic Control Plan.

652.2.2 Signs Detour signing requirements are noted on the plans for the detour routes illustrated in the graphics included at the end of this specification. Additional signing, required for interstate work and nighttime lane closures, is as follows:

652.2.2.1 Interstate Approaches Approach signing for work occurring on the interstate shall include:

- Road Work 3 Miles
- Road Work 2 Miles
- Road Work 1 Mile
- Road Work 500 Feet
- Road Work: Next x Miles
- End Road Work

Work zone speed limit sign packages will also be required at the end of any on-ramps that are within the lane closure

652.3.3 Submittal of Traffic Control Plan The Department has prepared Traffic Control Plans for work zones and detours for the Contractor to implement to complete the Project. Submittal of traffic control plans for work zones is not required unless the Contractor proposes to change project phasing or detours, or proposes configurations that differ from those included on the Contract Plans. Submittal of traffic control plans for all other components of the project is required.

The Contractor shall submit Traffic Control Plans for temporary lane closures to install and remove the work zone traffic control.

652.3.4 General

The fourth and fifth paragraphs of this subsection are deleted and replaced with the following:

The Contractor, his Subcontractors and employees shall conduct all work in a safe and professional manner as it relates to the traveling public (i.e. not adversely disrupting the flow of

traffic in an unsafe manner when exiting or entering a lane closure or crossover, no negative verbal or physical gestures).

The intent is that attenuator vehicles are to be used at all stationary operations and under most circumstances. They shall be rated for highway speeds. They shall be used in accordance with manufacturer's recommendations. The use of these vehicles shall be written into the Contractor's traffic control plan. The cost of these vehicles shall be considered incidental to the traffic control plan. Maximum distance between operations and attenuator vehicles shall be 500'.

Interstate crossovers shall not be used by the Contractor to change direction, store materials or park vehicles/equipment at any time outside of the I-295 Interstate Closure Period. Crossovers shall be available to MaineDOT maintenance and State Police forces for normal use.

During the closure of I-295, the crossover 0.35 miles north of Veranda Street and 1.0 mile south of Veranda Street may be used for access. The southern crossover may only be used if passing lane closures on both northbound and southbound roadways are in place. Existing emergency access crossovers shall not be blocked in a manner that prevents normal use by MaineDOT maintenance or State Police forces. Additionally, the I-295 northbound off-ramp to Veranda Street may be reduced to a single lane of traffic to provide the Contractor with access to the I-295 northbound mainline.

In advance of the closure period, the traffic signals listed in Special Provision 643 shall be programmed by the Contractor to include new temporary timings provided by the Department for use during the closure period.

652.3.6 Traffic Control Work zone minimum travel lane widths are as follows:

- Interstate roadways shall have a minimum travel lane width of 12' plus two 1' shoulders.
- All Interstate ramps shall have a minimum lane width of 11' plus two 1' shoulders.
- Veranda Street shall have minimum lane width of 11' plus two 1' shoulders.

All sidewalks shall remain open and passable at all times except during the closure period as described in Special Provision 107 Time (Supplemental Liquidated Damages). When existing sidewalks within the work zone can't be safely maintained, temporary walkways meeting ADA criteria shall be created allowing pedestrian access. When pedestrians are not on a raised sidewalk with minimum curb height of 5", or not separated from the active traffic lane by at least 5 feet, temporary concrete barrier shall be provided separating pedestrians and traffic. Sidewalk width shall meet latest FHWA guidance.

https://www.fhwa.dot.gov/indiv/docs/atssa_pedestrian_checklist.pdf

The Contractor shall setup portable changeable message signs (PCMS) at locations defined in the traffic control plans. Four PCMS will be utilized for the life of the project. Eleven PCMS

will be utilized for a 7-day period leading up to the closure period and also during the closure period(s). The PCMS locations and sign message(s) shall be as shown in the plans, and as coordinated with, and approved by, the Resident. The Resident may request changes to the locations of the PCMS and the associated messages, as required for the project, at no additional cost to the Department. and PCMS shall display the messages identified in Special Provision 652.

During the Veranda Street closure period, traffic at both ends of the Veranda Street work zone, shall be controlled by a Traffic Officer in accordance with Special Provision 652, Traffic Officer. The signed detours detailed in the traffic control plans shall be implemented during the closure period.

During the interstate closure period, I-295 southbound at Bucknam Road and I-295 northbound at Veranda Street shall have Traffic Officers present in accordance with Special Provision 652, Traffic Officer. The signed detours detailed in the traffic control plans shall be implemented during the interstate closure period.

Temporary raised pavement markers will not be permitted for the bridge and highway work, but may be approved for the highway milling and pavement work that occurs as part of surface paving operations, subject to Resident approval.

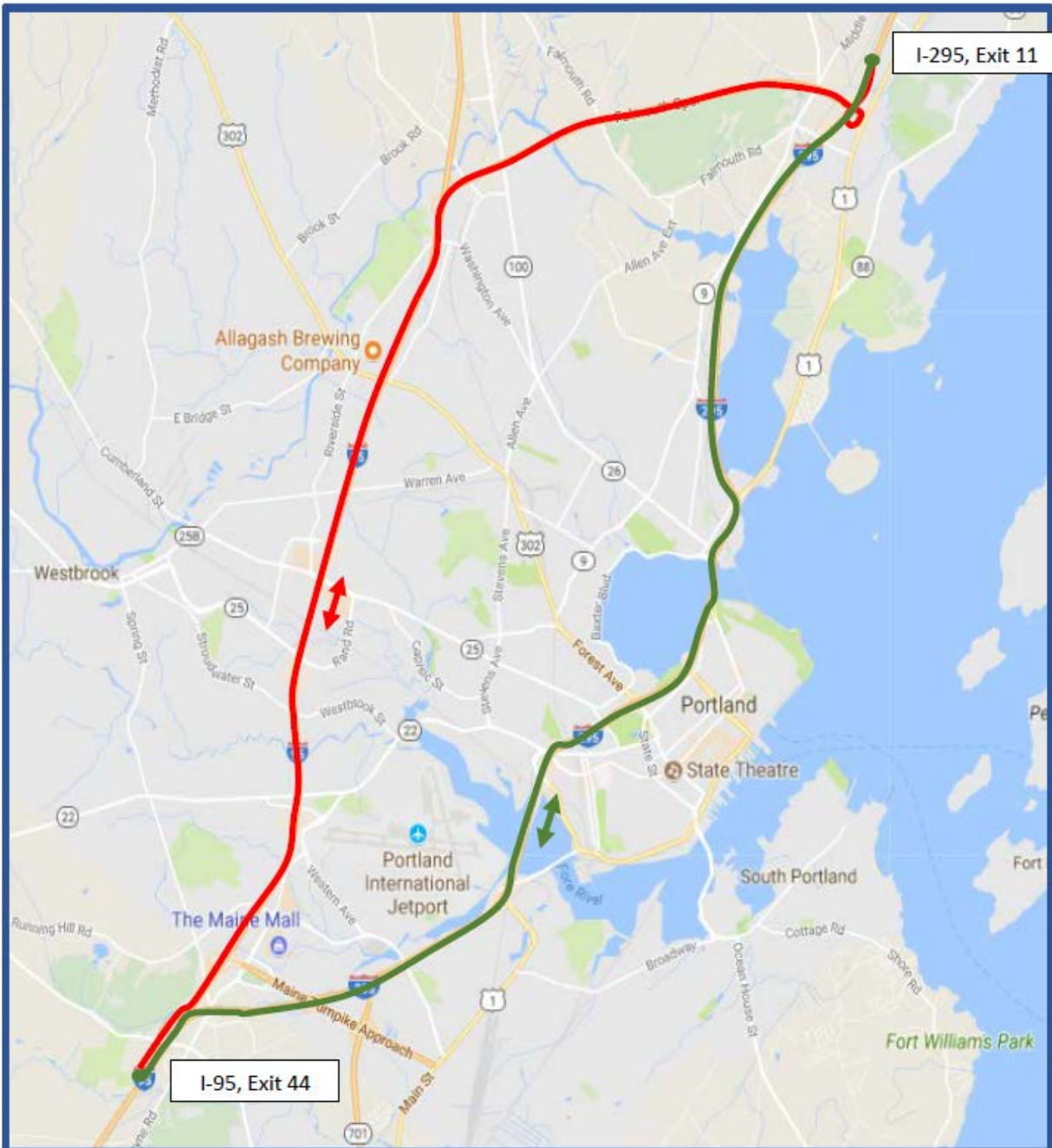
Roadside Recovery Area The Contractor shall not temporarily store material or park equipment on I-295 without a lane closure.

No long term storage of equipment or material will be allowed within 12 feet of the edge of the established travel lanes of Veranda Street. Short term storage of equipment or material less than 12 feet from the edge of the established travel lanes must be approved by the Department and shall be clearly marked by drums and cones. Short term storage shall be defined as less than 12 hours. No equipment or material will be allowed within 30 feet of the edge of the established travel lanes at night.

Speed Limits in Work Zones The Contractor shall sign all approved reduced speed limits on construction project according to APM #431 - A Policy on the Establishment of Speed Limits in Work Zones.

Detour Package #1

I-295 and I-95 motorists with destinations north and south of Portland

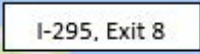


Legend:

Original Route: —

Detour Route —

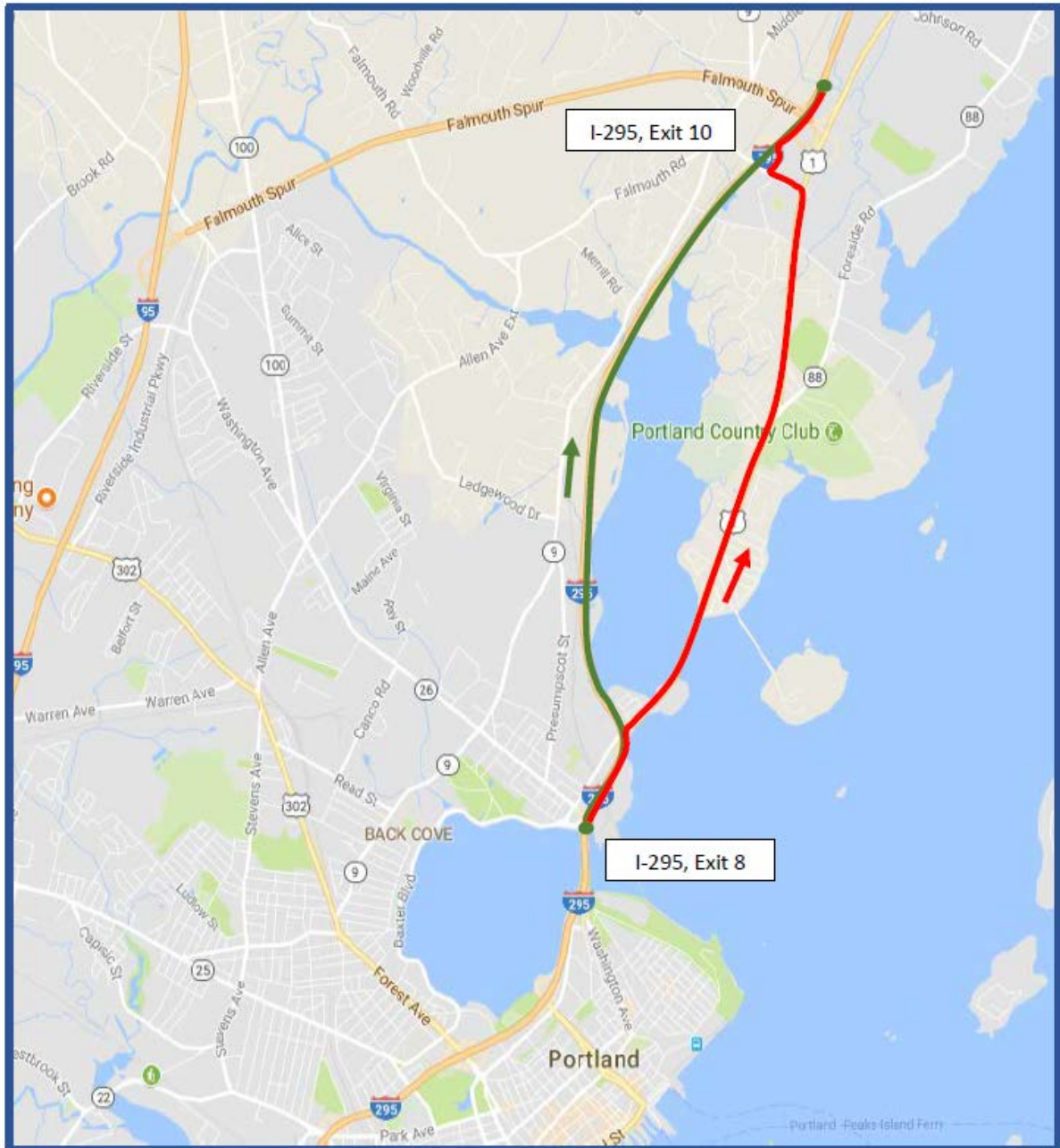
Southbound I-295 motorists with destinations in Portland



Detour Route



Detour Package #3
Northbound I-295 motorists with destinations north of Portland



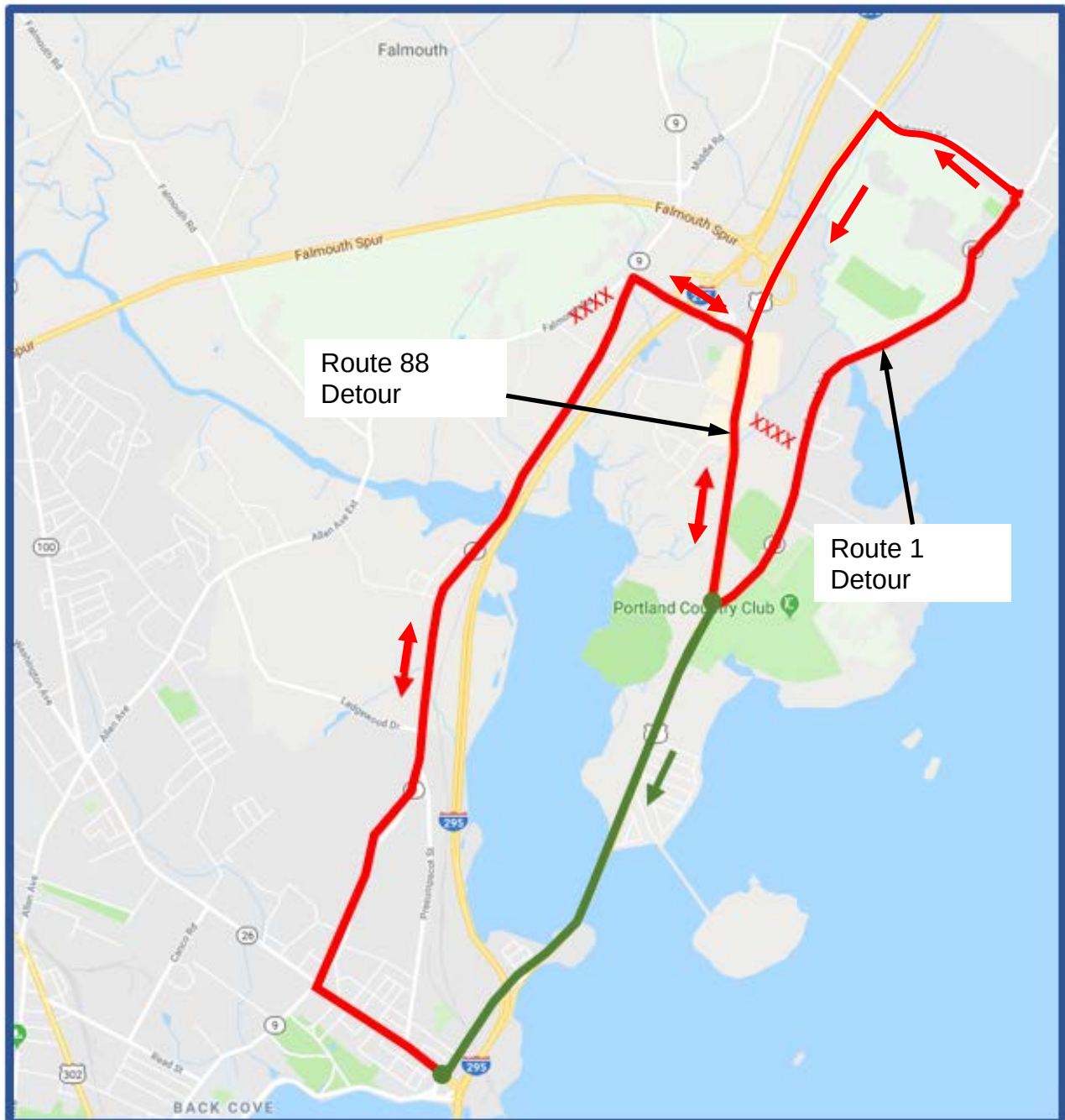
Legend:

Original Route:

Detour Route

Detour Package #4

Route 1 motorists with destinations south or north of the Veranda Street Bridge



Legend:

Original Route:



Detour Route



SPECIAL PROVISIONS
SECTION 652
MAINTENANCE OF TRAFFIC
(Temporary Pedestrian Barricade-ADA Compliant)

Section 652 of the Standard Specifications shall be amended by the addition of the following:

652.1 Description: The Contractor shall furnish, install, and maintain a continuous temporary pedestrian barricade along the pedestrian access route to separate pedestrians from the work zone.

652.2 Materials: The temporary pedestrian barricade shall conform to the regulations and guidelines set forth in the Manual on Uniform Traffic Control Devices (MUTCD), Americans with Disabilities Act (ADA), and NCHRP-350.

One of the following Temporary Pedestrian Barricades is considered acceptable

for use: Manufacturer
Pexco
Plaistow, New Hampshire
603-382-6533

Product
TPAR Barricade

Plastic Safety Systems
Cleveland, Ohio
800-662-6338

SafetyRail ADA-Compliant Pedestrian
Barricade

Plastic Safety Systems
Cleveland, Ohio
800-662-6338

SafetyWall ADA-Compliant Pedestrian
Barricade

652.3.3 Submittal of Traffic Control Plan: The Contractor shall submit a Traffic Control Plan (TCP) in accordance with the Standard Specifications and these Special Provisions. The TCP shall include the type of temporary pedestrian barricade proposed, the name, phone number, and address of the manufacturer, and the proposed installation method.

652.7 Method of Measurement: Temporary Pedestrian Barricade – ADA Compliant will be measured by the liner foot of barricade installed and ultimately removed.

652.8 Basis of Payment: The accepted quantity of Temporary Pedestrian Barricade – ADA Compliant, will be paid for at the contract unit price per liner foot. Such payment will be full compensation for furnishing, installing, maintaining, relocating, and removing the Temporary Pedestrian Barricade and all incidentals necessary to complete the work.

Portland
WIN 021745.00
Interstate 295 over Veranda Street
March 3, 2020

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
652.313	Temporary Pedestrian Barricade – ADA Compliant	Linear Foot

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
(Traffic Officers)

This section is amended by the addition of the following:

652.1 Description Uniformed police officer(s) with a police cruiser shall be furnished when bridge, roadway or interstate closures are required. This work shall consist of the following:

1. On Veranda Street, one traffic officer shall be in place at each end of the work zone (the intersection of Veranda with Wordsworth and the signalized intersection of Veranda with the entrance to Martin's Point Healthcare). The officers shall be in place 24 hours per day for the full closure duration of Veranda Street.
2. On I-295 southbound, one traffic officer shall be in place at Exit 10 Bucknam Road for 24 hours per day for the full interstate closure duration of I-295.
3. On I-295 northbound, one traffic officer shall be in place at Exit 9 Veranda Street for 24 hours per day for the full interstate closure duration of I-295.
4. When work being done at or around a signalized intersection necessitates that the signal be shut off and traffic directed by traffic officers.
5. As directed by the Resident.

652.41 Traffic Officers State Police shall be required for use on the Interstate. Local Police shall be used off the Interstate system.

The Contractor shall make requests for uniformed police officers a minimum of 48 hours in advance.

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
(Traffic Officers)

This section is amended by the addition of the following:

652.1 Description Uniformed police officer(s) with a police cruiser shall be furnished when bridge, roadway or interstate closures are required. This work shall consist of the following:

1. On I-295 southbound, one traffic officer shall be in place at Exit 9 Baxter Boulevard for the full nightly interstate closure duration of I-295.
2. At other times as directed by the Resident.

652.41 Traffic Officers State Police shall be required for use on the Interstate. Local Police shall be used off the Interstate system.

The Contractor shall make requests for uniformed police officers a minimum of 48 hours in advance.

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC
(Sequential Flashing Warning Lights)

Description Furnish and install Sequential Flashing Warning Lights on drums used for merging tapers during nightly work activities on interstates and freeways with speed limits greater than 55 MPH and or facilities that have significant traffic volumes.

The purpose of these lights is to assist the motorist in determining which direction to merge when approaching a lane closure. It's also designed to reduce the number of late merges resulting in devices being struck and having to be reset to maintain positive guidance at the merge point. The successive flashing of the lights shall occur from the upstream end of the merging taper to the downstream end of the merging taper in order to identify the desired vehicle path.

Materials The Sequential Flashing Warning Lights shall meet all of the requirements for warning lights within the current edition of the Manual of Uniform Traffic Control Devices (MUTCD).

Each light unit shall be capable of operating fully and continuously for a minimum of 200 hours when equipped with a standard battery set.

Each light in the sequence shall be flashed at a rate of not less than 55 times per minute and not more than 75 times per minute. The flash rate and flash duration shall be consistent throughout the sequence.

Supply a Type 3 Certification (Independent Test Lab results) documenting all actual test results for the specified parameters contained in the Institute of Transportation Engineer's (ITE's) *Purchase Specification for Flashing and Steady Burn Warning Lights*. The laboratory shall also identify all manufacturer codes and part numbers for the incandescent lamp or LED clusters, lenses, battery, and circuitry, and the total width of the light with the battery in place. The complete assembly shall be certified as crashworthy when firmly affixed to the channelizing device.

The Contractor shall submit for approval, literature and all necessary certifications to the Department prior to procurement of the product.

Construction Requirement Sequential Flashing Warning Lights are to be used for night time lane closures.

These lights shall flash sequentially beginning with the first light and continuing until the final light.

The Sequential Flashing Warning Lights shall automatically flash in sequence when placed on the drums that form the merging taper.

The number of lights used in the drum taper shall equal one half the number of drums used in the taper.

Drums are the only channelizing device allowed to mount sequential flashing warning lights.

The Sequential Flashing Warning Lights shall be weather independent and visual obstructions shall not interfere with the operation of the lights.

The Sequential Flashing Warning Lights shall automatically sequence when placed in line in an open area with a distance between lights of 10 to 100 feet. A 10 foot stagger in the line of lights shall have no adverse effect on the operation of the lights.

If one light fails, the flashing sequence shall continue. If more than 2 lights fail, all of the lights are to be automatically turned to the "off" mode. Non-sequential flashing is prohibited.

When lane closures are not in effect, the Sequential Flashing Warning Lights shall be deactivated.

Method of Measurement Sequential Flashing Warning Lights will be measured as the maximum number of sequential flashing warning lights satisfactorily installed and properly functioning at any one time during the life of the project.

This includes all materials and labor to install, maintain and remove all Sequential Flashing Warning Lights.

<u>Pay Item</u>		<u>Pay Unit</u>
652.46	Sequential Flashing Warning Lights	Each

SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC

Approaches. Approach signing shall include the following signs at a minimum. Field conditions may warrant the use of additional signs as determined by the Resident.

Road Work Next X* Miles
Road Work 500 Feet (Ahead)
End Road Work

Work Areas. At each work site, signs and channelizing devices shall be used as directed by the Resident.

Signs include:

Road Work xxxx¹.
One Lane Road Ahead
Flagger Sign

Other typical signs include:

Be Prepared to Stop
Low Shoulder
Bump
Pavement Ends

The above lists of Approach signs and Work Area signs are representative of the contract requirements. Other sign legends may be required.

Unless otherwise defined in Special Provision 105/107 or submitted and approved in the Traffic Control Plan, the following shall apply:

- The Contractor shall conduct their operations in such a manner that the roadway will not be restricted to one lane for more than 2,500 feet at each work area and no more than 4,000 feet for paving and milling work areas.
- Where more than one work area restricts traffic to one lane operation, these work areas shall be separated by at least 1 mile of two-way operation.

Temporary Centerline A temporary centerline shall be placed each day on all new pavement to be used by traffic. The temporary centerline, when specified of reflectorized traffic paint, shall conform to the standard marking patterns used for permanent markings. Failure to apply a temporary centerline daily will result in a Traffic Control Violation and suspension of paving operations until temporary markers are applied to all previously placed pavement.

¹ "Road Work Ahead" to be used in short duration operations and "Road Work xx feet" to be used in stationary operations as directed by the Resident.

SPECIAL PROVISION 700 - MATERIALS

SECTION 703 - AGGREGATES

The Standard Specification 700 – Materials, has been modified with the following revisions. All sections not revised by this Supplemental Specification shall be as outlined in Section 700 of the Standard Specifications.

703.07 Aggregates for HMA Pavements Coarse and fine aggregate for hot mix asphalt pavements shall be of such gradation that when combined in the proper proportions, including filler, if required, the resultant blend will meet the composition of mixture for the type of pavement specified.

Coarse aggregate, that material retained on the No. 4 sieve, shall be crushed stone or crushed gravel and, unless otherwise stipulated, shall consist of clean, tough, durable fragments free from an excess of soft or disintegrated pieces and free from stone coated with dirt or other objectionable matter. Coarse aggregate shall not exceed an absorption of 2.0 percent by weight as determined by AASHTO T 85.

Fine aggregate, material that passes the No. 4 sieve, shall consist of natural sand, manufactured sand, or a combination of these. It shall consist of hard, tough grains, free from injurious amounts of clay, loam, or other deleterious substances. Fine aggregate shall not exceed an absorption of 2.3 percent by weight as determined by AASHTO T 84.

All individual aggregates for hot mix asphalt pavements shall meet Table 3 requirements (excluding LCP) unless otherwise noted. The Department reserves the right to sample and test the composite aggregate for any of the following properties at any time:

TABLE 3: Aggregate Consensus Properties Criteria

Estimated Traffic, Million 18 kip ESALs	AASHTO T 335 Coarse Aggregate Angularity (minimum)	AASHTO T 304 Method A Uncompacted Void Content of Fine Aggregate (minimum)**	ASTM D 4791 (8.4) Flat and Elongated Particles (maximum)	AASHTO T 176 Clay Content/ Sand Equivalent (minimum)	AASHTO T 327 Coarse Micro-Deval (maximum)
< 3.0	75/60	40	10	45	18.0%*
3.0 to < 10	90/80	45		50	18.0%
≥ 10	95/90				

* In the event the material exceeds the Micro-Deval limit, a Washington Degradation test shall be performed. The material shall be acceptable if it has a value of 30 or more as determined by Washington State DOT Test Method T 113, Method of Test for Determination of Degradation Value except that the reported degradation value will be the result of testing a single composite specimen from that portion of the sample that passes the ½ inch sieve and is retained on the No. 10 sieve.

** Property will be evaluated on a mix design basis by calculating a weighted average based upon individual aggregate values (weighted average by the percentage proportion of the aggregate within the design).

ASTM D 5821 - “90/80” denotes that 90 percent of the coarse aggregate has one fractured face and 80 percent has two fractured faces.

AASHTO T 304 - Criteria are presented as percent air voids in loosely compacted fine aggregate, (U).

ASTM D 4791 - Criteria are presented as maximum percent by weight of flat and elongated particles (5:1 ratio).

The entire HMA wearing course shall come from the same source of material and the same job mix formula, except when permission is obtained from the Department to change sources.

703.09 HMA Mixture Composition The coarse and fine aggregate shall meet the requirements of Section 703.07. The several aggregate fractions for mixtures shall be sized, graded, and combined in such proportions that the resulting composite blends, including RAP aggregate will meet the grading requirements of the following table:

Aggregate Gradation Control Points						
Nominal Maximum Aggregate Size---Control Points (Percent Passing)						
Sieve Designation	Type 25 mm	Type 19 mm	Type 12.5 mm	Type 9.5 mm	Type 9.5 mm Thin Lift Mixture (TLM)	Type 4.75 mm
Percent By Weight Passing - Combined Aggregate						
37.5 mm	100					
25 mm	90-100	100				
19 mm	-90	90-100	100			
12.5 mm	-	-90	90-100	100	100	100
9.5 mm	-	-	-90	90-100	95-100	95-100
4.75 mm	-	-	-	-90	60-95	80-100
2.36 mm	19-45	23-49	28-58	32-67	47-65	40 - 80
1.18 mm	-	-	-	-	-	-
0.60 mm	-	-	-	-	-	-
0.30 mm	-	-	-	-	-	-
0.075 mm	2.0-6.0	2.0-6.0	2.0-6.0	2.0-7.0*	2.0-7.0*	2.0-7.0

* For 9.5 mm nominal maximum aggregate size mixtures, the maximum design aim for the percent passing the 75 μ m sieve is 6.5%.

SPECIAL PROVISION
SECTION 803
UTILITY & DRAINAGE TEST PITS

Description This work shall consist of excavating and back filling test holes to locate existing utilities or drainage at locations shown on the plans or as directed by the Resident.

Construction Requirements The work shall be done in a manner that provides safe passage of the traveling public at all times. Coordination with the utilities is required prior and during the test pit activities. An authorized representative from the utility shall be present during the test pit activity. Test pits shall be completed in a manner that does not damage any utilities. Any damage to utilities or other roadway features by the test pit operations shall be repaired by the Contractor at no additional cost and shall be to the Resident's satisfaction.

The Contractor shall coordinate with the Resident on locating the utilities once exposed.

Once the location work is complete, the Contractor shall backfill the hole, place gravel and pavement over the test pits in a manner consistent with the existing conditions and in accordance with the standard specifications for backfilling.

Basis of Payment The accepted quantity of Test Pits will be paid for at the contract unit price per each, which shall be full compensation for all labor, materials, tools, equipment, and incidentals necessary to complete the work. Associated traffic control will not be paid for separately and is considered incidental to the test pit item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
803.01 Test Pits	Each

PORTLAND WATER DISTRICT

ADJUSTING SEWER MANHOLES FOR PAVING PROJECTS

1. DESCRIPTION:

The Contractor shall provide all goods and services necessary to complete the construction described for the Project (the "Work"). The Work consists of adjusting sanitary sewer manhole structure frames & covers (hereinafter referred to F & C) to accommodate Maine Department of Transportation (MEDOT) projects within the confines of WIN# 021745.00 Interstate 295 over Veranda Street Portland, Maine.

All manhole structure F & C must be lowered prior to the milling of the pavement surface by the MaineDOT contractor. This work will generally include the cutting and removal of pavement; excavation around existing manhole structure to a minimum of 12" below the top section; removal of existing frame and cover and all brick or supporting structure down to the top section; removal of all mortar on the top section to create a clean flat surface; removal of any debris that happens to fall into the bottom of the manhole structure; the installation of a steel plate over the structure opening; backfill and compaction of gravel in the excavation to within 4" of existing roadway surface; installation and compaction of a minimum 4" of pavement within excavation to match the existing roadway grade and slope.

All manhole structure F & C must be adjusted to finish pavement grade after the final shim course of pavement and prior to the surface pavement course being applied by the MEDOT contractor. Unless tolerance can be met with use of a iron ring insert. This work will generally include the cutting and removal of pavement; excavation around existing manhole structure to a minimum of 12" below the top section; removal of steel plate covering the opening; cleaning of structure surface; installation of precast concrete grade ring of appropriate thickness under frame and cover; application of mortar to set grade ring on top of structure and frame on top of grade ring; installation of F & C set to grade; providing of new F & C to replace worn F & C deemed not suitable for use; cutting of any frame corners overhanging structure; parge coating of frame and grade rings to top of manhole structure; backfill and compaction of gravel in the excavation to within 6" of the existing shim course pavement grade; removal of any debris that happens to fall into the bottom of the manhole structure; installation and compaction of a minimum of 6" of pavement within excavated area to match existing roadway grade and slope.

2. MATERIALS:

Steel Plates - Steel plates shall be a minimum of 5/8" thick x 36" wide and 36" long and be have weight rating that meets AASHTO loading. Plates shall be flat as to create a tight bond with the surface of the manhole structure to prevent any soils from entering structure.

Rings Inserts – Ring inserts must meet Maine DOT specifications stated in section Supplemental Specification Section 604.

Precast Concrete Grade Rings – Grade Rings shall be precast reinforced concrete with a minimum 4,000 psi after 28 days.

Brick – shall be Grade H (hard) brick conforming to the Federal Specifications for Building Brick (common) Designations SS-B-656 and amendments thereto, new and of first quality, solid, sound, hard burned through out of uniform color, and equal in quality to samples which shall have been approved by the District.

Mortar – Mortar, except as otherwise specified, shall consist of one part Portland Cement Type II, and one part Mortar Cement, and four parts Mortar Sand. Sand shall be approved by the District.

Frame and Cover - Manhole frames and covers shall be East Jordan or approved equal. Covers shall be solid and clearly marked as "Sewer".

Frames shall be provided to accept a 24" or 26" diameter cover and shall be a height of 5". Must match existing diameter. Frame and cover shall meet AASHTO loading specifications.

Pavement Replacement – Pavement replacement shall meet the MaineDOT specifications for Hot Mix Asphalt 12.5 mm Base and shall be placed in lifts of a compacted thickness of no greater than 2". All butt joints shall be swept clean and tack-coated prior to installation of hot mix asphalt. Tack coat only needs to be applied when installing hot mix asphalt after raising F & C prior to final surface paving by the MEDOT contractor.

Excavation- Backfill and excavation will be considered incidental and shall meet MaineDOT standard specifications.

Buy America- All iron and reinforced concrete items shall meet Buy America requirements as presented in Maine DOT's Standard Specifications.

3. CONSTRUCTION:

The Contractor shall coordinate all of its Work with the MEDOT paving contractor. F & C adjustments may be required to be performed at night.

Contractor is responsible for all traffic control associated with the adjustment of the sewer manhole structure F & C, including but not limited to, signage; flagging, if necessary; cones; barricades; special reflective equipment for nighttime work; traffic officers, if necessary; and any other traffic control devices required per the MEDOT and/or the authority having jurisdiction.

Contractor shall cut existing pavement around each manhole F & C to be adjusted by a means that will create a smooth, flat vertical surface. Pavement openings per each adjustment shall be no greater than 6 feet wide by 6 feet long.

Contractor shall remove all existing pavement around each structure adjustment down to the existing gravel surface. Pavement shall be disposed of properly.

Contractor to excavate around structure to an adequate width and depth to facilitate the removal of the existing F & C down to the top of the manhole structure and place a steel plate over the manhole opening so that the opening is completely covered and the plate is lying flat on the surface.

Contractor to remove all debris that may fall into manhole structure during the removal of the existing F & C. Debris must be removed prior to installing steel plate and backfilling.

Contractor shall backfill the entire opening with the gravel that was removed to a depth of 4" below the existing roadway surface. Gravel shall be smooth and thoroughly compacted as to not settle with traffic loading. Additional gravel may be required to fill the space where the existing F & C and existing pavement were removed. This gravel is incidental to the adjustment.

Contractor shall install 4" of 12.5mm base hot mix asphalt in each structure adjustment opening prior to the milling taking place by the MEDOT contractor. Pavement replacement must occur immediately following the structure lowering to accommodate traffic. Pavement shall be installed to match existing roadway surfaces in all directions and shall be thoroughly compacted so no settlement occurs. Pavement shall be placed in two 2" lifts.

The Contractor shall store each F & C removed for milling in one location and shall take precautions to not damage such F & C for its reuse on the project. The existing F & C, when removed, shall be matched and kept as a pair to be reinstalled together. If a F & C has been identified as being not suitable for re-installation, it will be the responsibility of the Contractor to remove it from the stored F & C and to properly dispose of it.

The Contractor shall replace each F & C that has been deemed unfit for re-installation with a new F & C per the District specifications and as outlined in this contract. The District's field inspector will make the final determination as to each F & C reuse.

Contractor shall use Precast Concrete Grade Rings for all F & C adjustments. Grade rings shall be sized per structure adjustment so that one grade ring is used per adjustment to limit the number of joints. Lifting ears of grade rings shall be set smooth with the surface of the ring and not left to protrude. Grade ring shall be set concentric with the manhole opening. Provide adequate temporary covers to prevent accidental entry until final placement of F & C is made.

Bricks meeting the enclosed specification may be used in no more than one layer thick under the F & C or as shims to set the proper slope for the F & C. Wood shims will not be allowed.

The Contractor shall set each F & C to match the slope of the roadway in all directions and shall set the top of the frame rim at a grade that is $\frac{1}{2}$ " below the final pavement grade as established by MEDOT or its contractor. F & C shall be set concentric to the manhole opening. Used F & C shall be free of all old mortar, debris and scale prior to re-installation.

Contractor shall mortar all joints between the top of the manhole structure and the grade ring and between the grade ring and the new or existing F & C. All mortar joints shall be a minimum of $\frac{3}{8}$ " thick and a maximum of $\frac{1}{2}$ " thick and shall be continuous throughout the surface area of the joint.

Contractor shall trim the bottom flange of any F & C that would overhang beyond the outside vertical plane of the manhole structure. Trimming shall be accomplished by mechanical means and not by breaking bottom flange by striking with any object.

Contractor shall parge over the entire outside surface area of the components used in the adjustment of the F & C from 2" above the bottom flange of the F & C to the top of the manhole structure. The parge shall be a minimum of $\frac{3}{8}$ " thick and shall create a smooth surface along the entire outside of the adjustment components to prevent infiltration and the possibility of frost grabbing hold of the structure.

Contractor shall parge the grade ring or brick surface area inside the manhole opening to create a smooth surface with no protrusions into the opening.

All masonry work shall be protected from drying too rapidly by using burlaps which are kept moist, or by other approved means.

Contractor to remove all debris that may fall into manhole structure during the adjustment of the F & C. Debris shall be removed prior to installing pavement replacement.

Contractor shall backfill excavation as soon as all mortar has cured properly. Existing gravel may be used up to 9" below existing pavement grade then 3" of Type A gravel shall be placed as a base for the hot mix asphalt. Type A gravel shall be graded smooth matching the slope of the roadway surface in all directions and graded to allow for 6" of pavement. All gravel and backfill material shall be thoroughly compacted so no settlement occurs.

Contractor shall install 6" of 12.5mm base hot mix asphalt in each structure adjustment opening prior to the surface paving taking place by the MaineDOT contractor. Pavement replacement must occur immediately following the structure adjustment and any necessary concrete curing to accommodate traffic. Pavement shall be installed to match existing roadway surfaces in all directions and shall be thoroughly compacted so no settlement occurs. Pavement shall be placed in three 2" lifts.

The exterior of the rim of the F & C left exposed prior to the MaineDOT contractor installing the final surface pavement shall be spray painted white to make it visible to the traveling public.

4. TIME

Time for Completion: The Contractor shall commence the work in coordination with the MaineDOT and its Paving Contractor. All lowering of structure F & C must be completed prior to the milling of the roadway surface. All raising and adjusting of structure F & C must be completed after the final shim course of pavement has been applied and before the final surface course of pavement is installed.

Hours of work: The MaineDOT may dictate nighttime work hours for either one or both of these projects and therefore the sewer manhole structure adjustments would need to be completed during these times.

5. WARRANTY

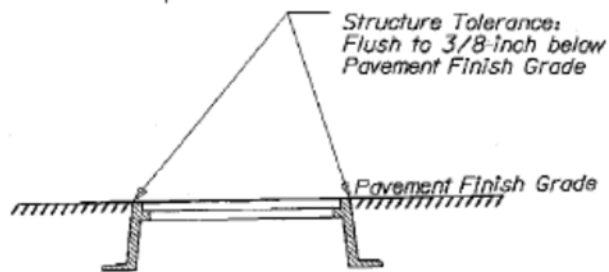
The Contractor warrants to the District that: (1) the Work will be free from defects not inherent in the quality required or permitted; and (2) the Work will conform to the requirements of the Contract Documents.

6. MEASUREMENT & PAYMENT:

Adjusting Sewer Manhole-This item shall include furnishing all materials, equipment and labor necessary to remove and lower existing sanitary sewer manhole frames & covers (F & C) and installing steel plates over openings prior to milling the pavement surface and adjusting frames & covers (F & C) to the new grade elevations for the road paving project. This shall include but not necessarily be limited to cutting of existing pavement for excavation, traffic control, removal and disposal of existing pavement, excavation, removal of existing manhole F & C, installation of steel plate, temporary pavement, installation of precast concrete grade ring and/or brick, installation of previously removed manhole F & C, mortar, and any other labor or materials required to complete the adjustment of the sewer manhole F & C to grade. Any existing sanitary sewer manhole F & C not suitable for re-installation as determined by the District's inspector will be replaced with a new F & C. The new F & C is a separate payment item. Payment for this item will be for each existing sewer manhole F & C actually adjusted to grade at the unit price in the bid schedule. This will be measured for each sewer manhole frame & cover actually adjusted to grade upon substantial project completion.

NOTES:

1) Manhole frames, valve boxes, and covers shall meet ASTM A48



UTILITY STRUCTURE

(Manhole, Valve Box, Vault Cover)

UTILITY STRUCTURES

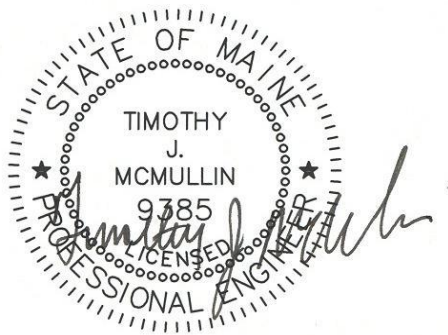
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Appendix

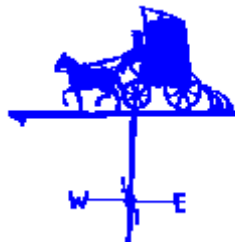
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CONTRACT DOCUMENTS
FOR
VERANDA STREET
WATER MAIN REPLACEMENT

Portland, Maine



November 2019
PORTLAND WATER DISTRICT
225 Douglass Street
Portland, Maine 04104-3553



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SECTION 01001 - DESCRIPTION OF WORK

PART 1: GENERAL

1.1 SCOPE:

- A. The CONTRACTOR shall furnish and install water main and appurtenances in Veranda St., Wordsworth St., Olympia St. and Oregon St., Portland as shown on the drawings and specified herein.
- B. The CONTRACTOR shall perform leakage and pressure tests and disinfect the installed water main as specified herein.

1.2 DUTIES OF THE OWNER:

- A. The OWNER will locate the terminal points of the work and will also locate any of its facilities lying in close proximity which would in any way be a hazard to the CONTRACTOR's operations.
- B. The OWNER will operate any valves or hydrants which may be found desirable or necessary to be used for any purpose. The OWNER will perform work in coordination with the CONTRACTOR at the locations specified on the plans.
- C. The OWNER will notify customers of all work involving temporary shutdown of service.

1.3 DUTIES OF THE CONTRACTOR:

- A. The CONTRACTOR will familiarize himself with all obstructions which he can foresee, such as existing pipes, services, conduits, ducts, sewers or any other such obstructions which might interfere with the construction, and he agrees to make arrangements with the owners of such facilities so as to save the OWNER harmless from any damages thereto caused by his operations and to make whatever arrangements might be necessary to move or remove and replace these facilities so as to permit the construction, all at his own expense. The CONTRACTOR agrees that there will be no extras charged for this type of work, except by special agreement with the ENGINEER and upon written order from him.
- B. The CONTRACTOR will make any changes which may be required, such as the removing or restoring of the property of others in the land through which this line will cross in right-of-way or otherwise. The CONTRACTOR will place all pipe, fittings and all attendant facilities to proper line and grade, as called for in the plans and specifications and to the satisfaction of the ENGINEER.

- C. The CONTRACTOR must give the District at least 4 days notice prior to a shutdown in order to properly notify customers.
- D. The CONTRACTOR will furnish all fuel, gasoline, oil, etc. for the operation of his equipment, all tools and equipment, and all labor and supervision necessary for the handling of material, for excavation, installation, backfilling and cleaning the site as required. He will dispose of excess spoil and restore the land surface to the original contour over the entire length of the project. Restoration shall be made to the satisfaction of the ENGINEER.
- E. The CONTRACTOR will perform the pressure and leakage test and disinfection of the main as described herein in the presence of the ENGINEER or OWNER.
- F. The CONTRACTOR shall install the water mains to supply the OWNER with a satisfactory, watertight pipeline, laid to proper line and grade in accordance with these contract documents, to the satisfaction of the OWNER. The CONTRACTOR shall leave the site in a condition, which is suitable to the OWNER, abutting landowners and any municipal or state authorities having jurisdiction over the areas involved.
- G. The CONTRACTOR shall install and maintain a temporary water system sufficient to maintain service to all customers during the water main replacement.
- H. The CONTRACTOR will obtain required municipal street opening permits for work outside the MDOT project limits.

END OF SECTION

SECTION 01035 - CONTROL OF WORK

PART 1: GENERAL

1.01 PLANT

- A. The Contractor shall furnish plant and equipment which will be efficient, appropriate, and large enough to secure a satisfactory quality of work and a rate of progress which will insure the completion of the work within the time stipulated in the Proposal. If at any time such plant appears, to the Portland Water District to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, the Portland Water District may order the Contractor to increase the efficiency, change the character or increase the plant equipment, and the Contractor shall conform to such order. Failure of the Owner to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

1.02 PIPE LOCATIONS

- A. Pipelines shall be located substantially as indicated on the Drawings, but the Owner reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings are noted on the Drawings, such notation is for the Contractor's convenience and does not relieve him from laying and jointing different or additional items where required.

1.03 CARE AND PROTECTION OF PROPERTY

- A. The Contractor shall be responsible for the preservation of all public and private property, and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition similar or equal to that existing before the damage was done, or he shall make good the damage in other manner acceptable to the Owner.

1.04 PROTECTION AND RELOCATION OF EXISTING STRUCTURES, TREES AND UTILITIES

- A. The Contractor shall assume full responsibility for the protection of all trees, buildings, structures, and utilities, public or private, including poles, signs, services to buildings, buried utilities, gas pipes, water pipes, hydrants, sewers,

drains, and electric and telephone cables, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operations shall be repaired by him at his expense.

- B. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the Prices in the Proposal.

1.05 CLEANUP

- A. During the course of the work, the Contractor shall keep the site of his operations in as clean and neat a condition as is possible. He shall dispose of all residue resulting from the construction work and, at the conclusion of the work, he shall remove and haul away any surplus excavation, lumber, equipment, temporary structures, and any other refuse remaining from the construction operations, and shall leave the entire site of the work in a neat and orderly condition.

END OF SECTION

SECTION 01151 - MEASUREMENT AND PAYMENT

PART 1: GENERAL

1.1 METHOD OF MEASUREMENT AND BASIS OF PAYMENT:

All measurements for payments will be based on completed work performed in strict accordance with the drawings and specifications, and on the contract bidding and payment item schedules. All work completed under the contract will be measured by the PORTLAND WATER DISTRICT ("DISTRICT") according to the methods outlined below. In cases where the payment clause in the specifications relating to any unit or lump sum price stated in the contract requires that the said unit or lump sum price cover and be considered compensation for certain work or material essential to the item, this same item will not be measured or paid for under any other pay item which may appear elsewhere in the specifications.

PART 2: PAYMENT ITEMS:

2.1 ITEM NO. 625.01 Temporary Water System

- A. Method of Measurement: Lump Sum
- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, temporary pavement, installation and removal of temporary valves, fittings, piping and connections, laying and jointing, maintenance, testing, restoration of property and associated work as specified and shown on the Drawings.
- C. Schedule of Payment: Activation of the Phase 1 temporary system – 40%
 Activation of the Phase 2 temporary system – 20%
 Substantial completion of the water mains – 30%
 Removal of temporary system – 10%

2.2 ITEM NO. 653.22– 2" Rigid Extruded Polystyrene Insulation (2'x8')

- A. Method of Measurement: Each
- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for the furnishing and installation of insulation as shown on the plans or directed by the PWD inspector.

2.3 ITEM NO. 822.3225, 822.3405, 822.3605 – CL 52 DI Pipe Push On Joint Pipe

- A. Method of Measurement: Linear feet as measured along the centerline of the pipe for the actual number of linear feet of pipe and fittings installed.
- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavating, shoring and bracing, dewatering, pipe, laying and jointing, gaskets, connections to existing piping, removal and disposal of existing piping, services and appurtenances, capping existing pipes that are not removed, abandoning existing services, thrust restraint, select backfill, backfilling, testing, restoration, and associated work as specified and shown on the Drawings.

2.4 ITEM NO. 823.31, 823.3101, 823.3250, 823.325, 823.3254 & 823.3310 – Gate Valves

- A. Method of Measurement: Each
- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, installation, shoring and bracing, dewatering, valve, valve box, abandoning/removing existing valves, backfill, testing and associated work as specified and shown on Drawings.

2.5 ITEM NO. 823.341 – Air Release Valve – 1”

- A. Method of Measurement: Each
- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, shoring and bracing, dewatering, corporation, angle valve, fittings, operating rod, service box, valve box, installation, backfill, testing and associated work as specified and shown on the Drawings.

2.6 ITEM NO. 824.30 – Fire Hydrant

- A. Method of Measurement: Each
- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, removal of existing hydrant in the same location, shoring and bracing, dewatering, hydrant, thrust blocks, backfill, testing and associated work as specified and shown on Drawings.

2.7 ITEM NO. 824.31 – Remove Fire Hydrant

- A. Method of Measurement: Actual number removed

- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, shoring and bracing, dewatering, hydrant removal, valve box removal, 6-inch pipe removal or capping, and associated work as specified and shown on Drawings.

2.8 ITEM NO. 825.4341 & 825.335– Copper Service

- A. Method of Measurement: Each
- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, shoring and bracing, dewatering, pipe, corporation, fittings, connection to existing service, service box, rod, curb stop, backfilling and associated work as specified and shown on Drawings.

2.9 ITEM NO. 825.55 – Reconnect Copper Service

- A. Method of Measurement: Each
- B. Basis of Payment: Payment of the unit price established in the Bid shall be full compensation for excavation, gravel, shoring and bracing, dewatering, pipe, saddle, corporation, fittings, connection to existing service, backfilling and associated work as specified and shown on Drawings.

END OF SECTION

SECTION 01310 - SUBMITTALS

PART 1 - GENERAL

1.01 SUBMITTALS FOR OWNER'S APPROVAL

- A. For all products to be incorporated into the Work submit to the OWNER for approval sufficient information in the form of shop drawings, product data and/or samples such that the OWNER can determine that the product is in compliance with the Technical Specifications and Drawings.
- B. Submit two (2) copies of each submittal. One (1) copy will be returned to the CONTRACTOR. Each copy shall include a cover sheet which clearly identifies the product and corresponding specification section. Each cover sheet shall bear the CONTRACTOR's stamp and signature certifying that the submittal is in full compliance with the Contract Documents or that any deviations from the Contract Documents are clearly identified on a separate sheet(s) labeled "Deviations From Contract Documents" and attached to the cover sheet.
- C. OWNER's Review: The OWNER shall review the submittals and indicate their status as:
 - 1. APPROVED SUBJECT TO REQUIREMENTS OF THE CONTRACT DOCUMENTS
 - 2. APPROVED AS NOTED, SUBJECT TO REQUIREMENTS OF THE CONTRACT DOCUMENTS
 - 3. REVISE AS NOTED, RESUBMITAL REQUIRED.
 - 4. NOT APPROVED

OWNER's review is only for general conformance with the design concept and general conformance with the information given in the Contract Documents. Corrections or comments made during the review do not relieve the CONTRACTOR from compliance with the requirements of the Contract Documents.

- D. Re-submittals: Make re-submittals under procedures specified for submittals; identify changes made since previous submittal.
- E. CONTRACTOR shall be responsible for the delays and or additional expenses that result from the CONTRACTOR's failure to submit a complete submittal and/or to identify portions of the submittal that does not conform to the specifications.

SECTION 01710 - CLEANUP

PART 1: GENERAL

1.1 SCOPE:

- A. The work covered by this section is to provide all cleanup over the entire project.

PART 2: PRODUCTS

2.1 METHOD:

- A. The Contractor may choose any method he wishes for cleanup and shall assume all responsibility for the adequacy of the method and equipment employed.

PART 3: EXECUTION

3.1 CLEANING UP:

- A. During the progress of the work, the construction areas shall be kept clean and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damages repaired so that the public and property owners will be inconvenienced as little as possible.
- B. Contractor shall fill in all depressions and water pockets on public and private property caused by his operations; clean all drains, ditches and culverts which have been obstructed by his work; and, shall leave the site in a neat condition wherever his operations have disturbed existing conditions.
- C. Contractor shall make restitution for any damage to trees, shrubbery or other structures or facilities owned by adjacent property owners.
- D. Cleanup shall follow directly behind the progress of the project.
- E. All excess material, rubbish or other type of mess shall be cleaned up and the site shall be left to the satisfaction of the right-of-way grantor, or any abutters, as well as to the satisfaction of any municipal or state authority which may be involved if in public right-of-way.
- F. Any damage to or displacement of street or highway surfaces due to blasting or otherwise shall be either replaced satisfactorily by the Contractor or shall be paid for by him to the authority responsible for the street or highway

END OF SECTION

SECTION 02217 - EXCAVATION AND BACKFILLING FOR WATER MAINS

PART 1: GENERAL

1.1 SCOPE:

- A. This section includes all excavation for water mains, hydrants and appurtenances, including drainage, sheeting and bracing, backfilling, disposal of surplus material, and miscellaneous grading. All work shall be done as indicated on the drawings and as herein specified.
- B. Excavation for water mains shall be the width and depth as indicated on the standard details. Excavation for hydrants and appurtenances shall provide suitable room for their construction.
- C. The CONTRACTOR shall furnish and place all sheeting, bracing and supports, and necessary dewatering, and shall carry out the excavation in such a manner as to eliminate all possibilities of undermining or disturbing existing pipelines, utilities, roadways, shoulders and/or structures.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

Bedding and Backfill Material - Section 02219

PART 2: PRODUCTS

2.1 EQUIPMENT:

Equipment shall be at CONTRACTOR'S option.

PART 3: EXECUTION

3.1 EXCAVATION:

- A. When any pavement, regardless of type, must be cut, it shall be done in a neat and symmetrical manner by use of a saw or other approved method. In no case shall pavement be torn up with a backhoe bucket except between and inside of cuts previously made as above. Should any further pavement be broken, outside of the cuts, as by blasting, such damaged pavement shall be cut out in a neat and orderly fashion.
- B. The CONTRACTOR shall perform all excavation of every description and of whatever substances encountered to the depths shown on the drawings or directed by the ENGINEER.

- C. No extras will be allowed for quicksand excavation, muck excavation, or any other type unless specifically provided for in the bidding schedule.
- D. Surplus excavated material may be used, with prior approval from the Maine Department of Transportation, at other parts of the construction project as required for fill, etc. Excess material shall be disposed of by the CONTRACTOR.
- E. The sidewalls of all trench excavation shall be kept as nearly vertical as possible in all roadways, lawns, near homes, etc. by sheeting, bracing, or other means. The width of the trench at a point six (6) inches above the top of the water pipe shall not be greater than the width detailed. If the type of excavated material will not allow the width detailed, then the trench shall be properly sheeted and braced. The cost of sheeting, bracing, or other means is included in the cost of the pipelines and no extras will be allowed.
- F. The excavation shall be made to secure a flat bottom trench (undisturbed earth bottom) for the full length of the pipe so as to give a uniform support to the pipe and shall be in accordance with ANSI A21.50 (AWWA C150), Type 2 Laying Condition.
- G. The bottom of the trench shall be accurately graded to provide support to the full length of the pipe barrel. Excavate at each bell to prevent bell from bearing on trench bottom.

3.2 EXCAVATION BELOW TRENCH GRADE:

- A. By mistake of CONTRACTOR: Where the bottom of the trench shall, by mistake of the Contractor, have been taken out to a greater depth than required, it shall be refilled to the proper grade with bedding material, and all to be placed and compacted as specified. The CONTRACTOR shall receive no additional compensation.
- B. By instruction from ENGINEER: If, in the opinion of the ENGINEER, existing material below trench grade is unsuitable for properly laying the pipe, the CONTRACTOR will excavate and remove the unsuitable material and replace the same with bedding material as authorized by the ENGINEER and properly compacted to his satisfaction. The CONTRACTOR will be paid under the item titled "Unsuitable Material Excavated Below Trench Grade."

3.3 EXCAVATION NEAR EXISTING UTILITIES, ETC.

- A. It will be necessary to excavate near existing pipes, drains and other utilities in certain locations. Some of these have been indicated on the drawings, but no attempt has been made to show all of the services and the completeness and accuracy of the information given is not guaranteed. The CONTRACTOR shall call "Dig-Safe" at least three business days in advance of any excavation to allow utilities to locate underground facilities.

- B. As the excavation approaches pipes, conduits, or other underground structures and utilities, digging by machinery shall be discontinued and the excavation shall be done by means of hand tools.
- C. If the utility is of the opinion that at any point sufficient or proper support has not been provided, they may order additional supports placed at the expense of the CONTRACTOR. Compliance with such order shall not relieve the CONTRACTOR from his responsibility for the sufficiency of such supports. It shall be the responsibility of the CONTRACTOR to prevent damage to or displacement of utilities and to consult with and request the concurrence of the utility company's representative in this matter at all locations. The cost of protecting such utilities shall be considered incidental to the cost of laying the pipe.

3.4 TRENCH SURCHARGES:

The excavated material shall be placed adjacent to the excavation in a manner to cause no excessive surcharge on the trench bank nor to obstruct free access to hydrants and valves. Should traffic or other conditions make it impractical or unsafe to stack material adjacent to trench, it shall be hauled and stored at a location provided by the CONTRACTOR and at the expense of the CONTRACTOR. When required, it shall be re-handled and used in backfilling the trench by the CONTRACTOR and at his expense.

3.5 SHEETING AND BRACING:

- A. The CONTRACTOR shall be responsible for the design, construction, maintenance and safety of all sheeting and bracing required to support the sides of the excavation and to prevent the movement of earth which could in any way damage or endanger adjacent structures, utilities, roadways, increase the width of the excavation to more than that specified, or delay the work.
- B. All sheeting, bracing and shoring is to be included in prices bid for several items of work in bidding schedule and will not be paid for as separate items.
- C. No shoring shall be left in place unless so directed by the ENGINEER.

3.6 DRAINAGE AND DEWATERING OF EXCAVATIONS:

- A. The CONTRACTOR shall conduct his operations so as to prevent at all times the accumulation of water, ice and snow in excavations or in the vicinity of excavated areas so as to prevent water from interfering with the progress or quality of the work. Under no conditions shall water be allowed to rise in unbackfilled trenches after pipe has been placed.
- B. Accumulated water, ice and snow shall be promptly removed and disposed of by dewatering. Disposal shall be carried out in a manner which will not create a

hazard to public health; nor cause injury to public or private property, work completed or in progress, or public streets; nor cause any interference in the use of streets and roads by the public. Pipes under construction shall not be used for drainage of excavations.

- C. During construction, when an unstable condition in the pipe sub-grade has been created due to the CONTRACTOR'S excavation, the sub-grade shall be stabilized by dewatering or other means accepted by the ENGINEER.

3.7 BACKFILLING - GENERAL:

- A. In general and unless other material is indicated on the drawings or is specified, material used for backfilling trenches and excavations around structures shall be suitable material which was removed in the course of making the construction excavations or as specified.
- B. Frozen materials shall not be placed in the backfill, nor shall material be placed upon frozen material. Previous frozen material shall be removed or shall be otherwise treated as required before new backfill is placed.
- C. Backfilling shall be done as soon as practical after the pipe has been laid and jointed.

3.8 SUITABLE BACKFILL MATERIAL

Suitable backfill material shall be the following or a combination of the following:

- (1) Excavated material that will compact to the compaction requirements.
- (2) Excavated material that does not contain rocks larger than 8" in any dimension or granular borrow.
- (3) Dry clay backfill free from lumps.
- (4) Wet clay that alone would pump but when mixed with sand and/or gravel will be stable and will compact.

3.9 BACKFILLING PIPE TRENCHES:

- A. As soon as practicable after the pipes have been laid and jointed, backfilling shall begin and shall proceed until it is completed or has sufficient backfill to allow pipe testing.
 - (1) The first layer of suitable backfill material shall be brought half-way up the pipe and compacted to 80% maximum density and then the normal backfilling shall begin and shall be compacted as specified.
 - (2) All backfill shall be thoroughly compacted by hand tamping as placed, by use of mechanical or vibratory compactors, or by other acceptable methods.

- (3) Remainder of the trench shall be backfilled as follows:
 - a) In paved areas, road shoulders and seeded areas, the entire depth of trenches above the center line of the pipe shall be backfilled in eight (8) inch layers with suitable backfill material and each layer thoroughly and carefully compacted as specified. Bring backfill up to bottom of gravel base and/or loam.
 - b) In other areas, the trench above the center- line of the pipe shall have suitable backfill material placed and compacted in eighteen (18) inch maximum layers as specified.
- B. The nature of the excavated materials will govern both their acceptability for backfill and the method best suited for their placement and compaction in the backfill.
 - (1) Both the materials and the methods shall be subject to the acceptance of the ENGINEER.
 - (2) No stones or rock larger than 8" in the greatest dimension shall be placed in the backfill.
- C. Backfilling in public right-of-way, along the streets or highways in or along shoulder, berm or backslope shall be done in accordance with the specifications and requirements of the state or municipality, whichever is responsible for the street or highway involved. Responsibility for the fulfillment of permit conditions or any other applicable requirements of the street or highway authority shall be the obligation of the CONTRACTOR. Surface restoration shall be carried out to the satisfaction of the street or highway authority or as shown on the plans.
- D. Backfilling shall follow pipe laying as closely as reasonable, so that a minimum of trench shall be open at any time. Observe all Maine Department of Transportation specifications regarding open trenches. Any caved-in trench, especially after heavy rain and flooding, shall be cleaned out and the bottom consolidated before any additional pipe shall be laid.

3.10 TOP OF BACKFILL:

- A. In paved and shoulder areas, backfill shall be carried up to pavement or shoulder sub-grade ready to receive the gravel base. In other areas, backfill shall be brought up to adjacent finished grade minus the depth of any required topsoil and so as to provide a finished surface slightly mounded over the trench. Any trenches improperly backfilled, or where settlement occurs, shall be reopened to the depth required for proper compaction, and shall then be refilled and compacted with the surface restored to required grade and degree of compaction, mounded over, and smoothed off, at no additional expense.

- B. In unpaved areas, the gravel topping shall be left in a smooth and even condition, with no large stone on or in the surface. In cases where a paved surface has been broken, a temporary bituminous patch and/or a permanent paving restoration shall be made as required by the appropriate local or state road authority.

3.11 COMPACTION:

- A. Compaction shall be in compliance with MDOT Specification Section 203.
- B. Methods and equipment proposed for compaction shall be subject to prior acceptance by the ENGINEER. Compaction generally shall be done with vibrating equipment. Displacement of, or injury to, the pipe and structure shall be avoided. Movement of in-place pipe or structures shall be at the CONTRACTOR'S risk. Any pipe or structure damaged thereby shall be replaced or repaired as directed by the ENGINEER and at the expense of the CONTRACTOR.
- C. Testing:
 - (1) Field density tests may be ordered by the ENGINEER for each foot of depth of backfill at an average interval of 200 feet along the trench.
 - (2) The CONTRACTOR shall furnish all necessary samples for laboratory tests and shall provide assistance and cooperation during field tests. The CONTRACTOR shall plan his operations to allow adequate time for laboratory tests and to permit taking of field density tests during compaction.
 - (3) Any costs of retesting required as a result of failure to meet compaction requirements shall be borne by the CONTRACTOR.

3.12 FILL AND GRADING:

- A. Excavated material not required for backfilling around pipes or structures may be used for fill in areas which require material for re-grading.
- B. The re-grading shall be carried out as directed by the ENGINEER, so that all surface water will drain towards brooks or drainage pipes.
- C. All material shall be of such nature that after it has been placed and properly compacted, it will make a dense and stable fill.

3.13 PROTECTION OF EXISTING STRUCTURES:

- . All existing pipes, wires, poles, fences, property line markers and other items, which must be preserved in place without being temporarily or permanently relocated, shall be carefully supported and protected from injury by the CONTRACTOR, at no additional cost to the OWNER. Should such items be injured, they shall be restored by the CONTRACTOR, without compensation therefore, to at least as good condition as that in which they were found immediately before the work was begun.

3.14 ACCOMMODATION OF TRAFFIC:

- A. The CONTRACTOR shall construct and maintain, without extra compensation, such adequate and proper bridges over excavations as may be necessary or as directed for the safe accommodation of pedestrians and vehicles. The CONTRACTOR shall furnish and erect, without cost to the OWNER, substantial barricades at crossing of trenches, or along the trench, to protect the traveling public.
- B. The CONTRACTOR shall not obstruct fire hydrants.

END OF SECTION

SECTION 02219 - BEDDING AND BACKFILL MATERIAL

PART 1: GENERAL

1.1 SCOPE:

- A. The CONTRACTOR shall furnish, place and compact various types of bedding material and trench sand as called for in the specifications or as directed.
- B. The types and quality of bedding and backfill material are specified in this section, but its use for pipe bedding, backfill, replacement of unsuitable material excavated below trench grade, and other uses are as specified elsewhere.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

Excavation and Backfilling for Water Mains - Section 02217

PART 2: PRODUCTS

2.1 MATERIALS:

A. Bedding Material:

- 1. Screened or crushed gravel bedding material shall be hard durable particles free from organic matter, lumps of clay and other deleterious substances. The gradation shall meet the requirements of the following table and MDOT specifications Section 703.06 Type B aggregate

<u>Sieve Size Designation</u>	<u>% By Weight</u>
1/2 inch	35 - 75
1/4 inch	25 - 60
No. 40	0 - 25
No. 200	0 - 5.0

B. Select Backfill:

- 1. Material shall meet the gradation of MaineDOT 703.22 underdrain backfill Type B, with the exception that 100% shall pass the 1/2" sieve.

C. Backfill:

1. Suitable native material that does not contain stone or rock particles with any dimensions greater than 6".
2. Gravel borrow shall meet MaineDOT Standard Specification 703.20 - Gravel Borrow.

PART 3: EXECUTION

3.1 METHODS:

The materials will be used in accordance with the requirements of the various sections of the specifications, drawings and standard details.

END OF SECTION

SECTION 02536 – TEMPORARY WATER SYSTEMS

In order to maintain uninterrupted water service to District customers, the Contractor shall provide temporary above ground water systems. The temporary water systems consist of mains, services and fire department outlets. The above ground systems shall be installed only for the duration of deep water main replacement and removed promptly after main replacement is complete. Currently the District has approved 2 manufacturers for the temporary mains and 100-psi poly tube for individual services. Only authorized District personnel shall operate control valves attached to these systems.

Temporary Water Systems Approved Pipe

Certaiteed Certa-Lok Yellowmine	Restrained Joint PVC pressure pipe and fittings
AquaMine (Victaulic Co)	Restrained Joint PVC pressure pipe and fittings

Temporary above ground water mains shall be installed in a manner to both protect the public water supply and to minimize customer service interruption. To allow the District to notify its affected customers, the Contractor shall provide the District a minimum of 5 working days notice prior to installing any temporary lines.

The size and approximate location of the temporary systems are shown on the drawings. The Contractor must obtain the approval of the District for any changes prior to installation of the system.

Temporary mains shall typically be installed behind sidewalks or along the edge, and within the public right of way. The mains shall follow a uniform straight course and shall not bow to accommodate long sections of pipe. Temporary mains shall not be installed on private property. The route of services lines installed from the mains to houses shall be acceptable to the property owner.

The Contractor shall follow the pipe manufactures installation guidelines when installing temporary systems. Additionally, an approved joint lubrication for the installation of potable water pipe shall be used on all joints prior to connecting pipe.

Hydrant Connections: Provide temporary main connection to hydrant using LL brass or 304ss adaptor, 304ss adaptor, 304ss NPT to HDPE transition, and flanged HDPE piping to bring piping elevation from hydrant port to grade. Provide piping supports/blocking adaptors and D.I. backup rings, dimensions per AWWA C207. All piping and fittings shall be NSF 61.

Provide flanged LL double check valve backflow device, same nominal size as temporary main, at each hydrant connected to a temporary main. Provide flanged resilient seated gate valve for isolation, and provide upstream and downstream taps. Remove backflow only upon Owner's request and provide flanged HDPE replacement spool piece. HDPE shall be AWWA C906, SDR 11 with IPS flange adaptors and D.I. backup rings. Flange dimensions per AWWA C207. All piping and fittings shall be NSF 61. Provide documentation of annual inspection by a person certified by the New England Water Works Assoc. or American Backflow Prevention Assoc.

Source: See drawings for source location(s) and associated notes.

Disinfections: All 2" diameter and larger temporary mains shall be chlorinated, sampled, and tested for bacteria prior to activating any portion of the temporary mains. (See disinfection specification for deep mains).

Leakage test: All systems shall be watertight. A static pressure test shall be performed on all systems prior to disinfecting any portion of the system.

Test Procedure

1. Install a pressure gauge at furthest end of the system.
2. Open main feed valve to fully charge the system with water and bleed all air.
3. Record the static pressure reading.
4. Close main feed valve.
5. The system must hold static pressure for a minimum of 30 minutes.

Driveway crossings: A gravel or cold patch raised berm shall be placed over temporary mains to prevent vehicles from dragging along the ridge.

Sidewalk crossings: Temporary mains crossing sidewalks must be buried below grade or temporary pavement ramps constructed over the pipe in compliance with Americans with Disabilities Act standards.

Roadway crossings: Temporary mains shall be buried just below the surface of the roadway. The pipe shall be protected with clean sand or material free from rocks, as the rocks tend to punch through the pipe when exposed to heavy traffic. The use of cold patch or QPR as fill material is acceptable.

Curbing or esplanade rise: To accommodate curb rise, pre-fabricated certa-lock bends and/or elbows shall be used. Sweeping or bending the actual pipe is not an acceptable method unless the sweep lies flat on the ground and is not obstructing walkways. A traffic barrel shall be placed near the curb at offset connections to protect the offsets from being damaged by vehicles.

Cutting pipe: Follow manufacturer's installation instructions. All joints, including those on cut lengths of pipe, shall be grooved to provide a restrained joint. Pre-fabricated bends, elbows, and tees shall be used when changing direction.

Blow off: A 1" blow off shall be installed at the ends of all temporary mains. The blow off shall be constructed using a 1" brass female curb stop.

Isolation valves: Shall be 2" brass female curb stops for 2" mains and 4" resilient wedge valves for 4" mains (grip rings shall be used for 4" valves). Valves shall be located as shown on the plan. The valves are attached to the mains using pre-fabricated adapters.

Service line connections: All temporary individual service lines shall be $\frac{3}{4}$ " poly tube rated at a minimum working pressure of 100 psi. The service lines shall be connected to a 2"x $\frac{3}{4}$ " factory tapped restrained joint coupling, then a $\frac{3}{4}$ " close brass nipple, a $\frac{3}{4}$ " female curb stop and a brass poly tube adapter $\frac{3}{4}$ " insert x male. The tube shall be extended to a sill cock (outside faucet) and connected using the same poly tube adapter. Prior to connecting the service, a garden hose connection, including a brass boiler drain or sill cock valve shall be installed in the line. All service lines shall be flushed prior to activating mains.

Anti-siphon sill cocks: Only District authorized personnel shall disassemble anti-siphon sill cocks.

Excavating and connecting into existing deep service lines may be required where properties have malfunctioning sill cocks or no exterior plumbing.

Shutting off meters

After activating the temporary lines, all meters shall be shut off. Only District authorized personnel may de-activate meters.

Maintenance of temporary water systems: The contractor shall be responsible for maintaining the temporary systems during the regular workday including making repairs to the systems. The District's Inspector must be on site prior to any work, or repairs being performed on the temporary water systems. District crews will respond to all after hour's emergencies. All affected customers shall be notified as soon as possible prior to any service interruption.

It is expected that contractors will keep an inventory of readily available repair parts on hand enabling them to quickly respond to any type of problem. Restrained joints shall be maintained. The use of non-restrained joint couplings is prohibited.

Joint leaks shall be cut out. The use of stainless steel wrap around repair clamps over pinholes is acceptable.

END OF SECTION

SECTION 02537 - DUCTILE IRON WATER PIPE & FITTINGS

PART 1: GENERAL

1.1 SCOPE:

- A. This section includes the furnishing and installing of ductile iron water pipe and ductile iron or cast iron fittings as specified.

1.2 RELATED WORK SPECIFIED ELSEWHERE:

- A. Excavation and Backfill for Water Mains - Section 02217
- B. Bedding and Backfill Material - Section 02219

1.3 SUBMITTALS:

- A. Submit shop drawings for all material in accordance with the provisions of Section 01310.

PART 2: PRODUCTS

2.1 MATERIALS:

- A. See SEC02999 – Water Main Material Specifications

PART 3: EXECUTION

3.1 PIPE LAYING CONDITIONS:

- A. The interior of each pipe shall be inspected while being joined to see that the alignment is preserved and to assure that no dirt or debris has entered the pipe after laying and partial backfilling.
- B. Pipe fittings and accessories shall be carefully lowered into the trench, piece by piece, by means of derrick, crane, slings and other suitable tools and equipment, in a manner such as to prevent damage to the material or to its protective coating and linings. No chain or slings shall be passed through the inside bore of any pipe or valve or fitting. Under no circumstances shall piping materials be dropped or dumped into the trench.

3.2 LAYING DUCTILE IRON PIPE:

- A. As soon as the excavation is completed and the existing trench bottom has been brought to the proper grade, the pipe shall be laid.
- B. All pipe, before being lowered into the trench, shall be inspected inside and out. Both ends shall be cleaned and any visible dirt or debris removed from inside the pipe. Care shall be taken to lay the pipe to true lines and grades as shown on the drawings.
- C. Coupling holes shall be excavated so that the barrel of the pipe shall bear upon the trench bottom.
- D. Blocking under the pipe will not be permitted.
- E. Each section shall rest upon the pipe bed for the full length of its barrel.
- F. The circular rubber gasket shall be inserted in the gasket seat provided. A thin film of gasket lubricant shall be applied to the inside surface of the gasket. Gasket lubricant shall be a solution of vegetable soap or other solution supplied by the pipe manufacturer.
- G. The spigot end of the pipe shall be cleaned and entered into the rubber gasket in the bell, using care to keep the joint from contacting the ground. The joint shall then be completed by forcing the plain end to the seat of the bell. Pipe which is not furnished with a depth mark shall be marked before assembly to assure that the spigot end is inserted to the full depth of the joint.
- H. Pipe shall be aligned with the preceding unit and laid so as to form a close joint with the adjoining pipe and bring the inverts continuously to the required line and grade.
- I. No length of pipe shall be laid until the previous length has had sufficient material tamped about it to firmly secure it in place so as to prevent any movement or disturbance.
- J. Under no circumstances shall pipe be laid in water, and no pipe shall be laid when trench conditions or weather are unsuitable for such work, except by permission of the ENGINEER.
- K. The pipe shall be laid with the bell ends facing the direction of the laying, unless otherwise permitted by the ENGINEER.
- L. Joints, when made, shall be done in the manner prescribed by the manufacturer of the pipe. In the case of rubber gasket joints, these joints shall be made up in accordance with the American National Standards for the jointing of cast iron pressure pipe and fittings. (ANSI/AWWA C111/A21.11).

- M. Thrust blocks shall be used behind tees, bends, or other fittings where shown. Size shall be appropriate for soil conditions and thrust forces acting on the specific fitting.
- N. Water mains shall be laid at least 10 feet horizontally from any sanitary sewer, or sewer manhole, whenever possible; the distance shall be measured edge-to-edge (pipe wall to pipe wall).
- O. When local conditions (such as ledge, bridges, utility congestion, etc.) prevent a horizontal separation of 10 feet, a water main may be laid closer to a sanitary sewer provided that:
 - a. The bottom of the water main is at least 18 inches above the top of the sewer in a separate trench or undisturbed earth shelf and a minimum of 5 feet edge-to-edge (pipe wall to pipe wall) horizontally is provided.
 - b. Where this vertical separation cannot be obtained, the sewer shall be constructed of materials and with joints that are equivalent to water main standards-of-construction and shall be pressure tested to assure water tightness prior to backfilling.

3.3 TRENCH BOTTOM:

- A. Should the trench bottom contain unsuitable material, as indicated in Section 02217, Article 3.2-b, the CONTRACTOR shall over-excavate and replace with bedding material as required and authorized by the ENGINEER. The quantity of unsuitable material will be measured from the bottom outside of the pipe.
- B. Should ledge be encountered, it shall be removed to a depth of 6" below the bottom of the pipe, and replaced with bedding material.

3.4 CUTTING PIPE:

- A. All ductile iron pipe shall be cut using abrasive wheel cutter, rotary wheel hand cutter (with carbide cutter) or a guillotine pipe saw. All cuts shall be square and even with no ragged rough ends.
- B. Field cut pipe lengths shall be beveled and filed to avoid damage to the gasket and facilitate making the joint.
- C. When the cut end of pipe is to be used as a joint, the outside of the cut end shall be tapered back about 1/8-inch at an angle of about 30 degrees with the center line of the pipe. This shall be done with a coarse file or a portable grinder.

3.5 TEMPORARY PLUGS:

When pipelaying is not actually in progress, the openings of pipes shall be closed by temporary watertight plugs or other accepted means.

3.6 RETAINER GLANDS:

Install retainer glands on all mechanical joints of fittings, valves and hydrants.

3.7 POLYETHYLENE ENCASEMENT:

- A. Tube type polyethylene encasement shall be installed on all ductile iron pipe and fittings in accordance with AWWA Standard C105 - latest revision, Method A. Circumferential wraps of tape or plastic tie straps shall be placed at 2-ft. intervals along the barrel of the pipe.
- B. The polyethylene encasement shall prevent contact between the pipe and the surrounding backfill and bedding material but is not intended to be a completely airtight or watertight enclosure. All lumps of clay, mud, cinders, and so forth, on the pipe surface shall be removed prior to installation of the polyethylene encasement. During installation, care shall be exercised to prevent soil or embankment material from becoming trapped between the pipe and the polyethylene.
- C. The polyethylene film shall be fitted to the contour of the pipe to effect a snug, but not tight, encasement with minimum space between the polyethylene and the pipe. Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings, and to prevent damage to the polyethylene due to backfilling operations. Overlaps and ends shall be secured with adhesive tape, string, plastic tie straps, or any other material capable of holding the polyethylene encasement in place until backfilling operations are complete.

END OF SECTION

SECTION 02594 - PRESSURE AND LEAKAGE TESTS OF DI WATER MAINS

PART 1: GENERAL

1.1 SCOPE:

Furnish all labor, materials, equipment, gages and related items necessary to complete all pressure and leakage tests of all ductile iron (DI) water mains.

PART 2: PRODUCTS

2.1 MATERIALS:

Materials shall be at CONTRACTOR's option.

PART 3: EXECUTION

3.1 PRESSURE AND LEAKAGE TESTS:

- A After the pipe has been laid and backfilled, it shall be pressure tested and tested for leakage in the presence of the ENGINEER and/or the OWNER.
- B All tests shall be conducted at a time and in a manner to minimize as much as possible any interference with the operation of the existing water system. The OWNER will supply all water necessary for testing and placing the lines in service. The CONTRACTOR shall supply all labor, materials and equipment necessary to make any necessary connections to the water system and to carry out the tests.
- C The CONTRACTOR shall excavate and provide a corporation tap for pressure and leak testing as directed by the ENGINEER. The CONTRACTOR is responsible for all work associated with the excavation, including proper trench protection, barricades, traffic control and proper backfilling and compaction upon successful completion of the test.
- D The pipe shall be slowly filled with water and all air expelled from the pipe. If permanent air vents are not located at all high points, CONTRACTOR shall install corporation stops at such high points to bleed off air as the line is filled with water.
- E A pressure test pump will be connected to the new main at the testing point. The pressure will be slowly increased to 150 psi and allowed to stabilize (+/-2.5 psi) for a minimum of 15 minutes.
- F A reservoir of potable water shall be connected to the test pump and the initial level of water recorded.

- G. The pump pressure shall be maintained at 150 psi for one hour with all make up water withdrawn from the reservoir.
- H. After one hour, the water level in the reservoir will be measured and the volume of water drawn from the reservoir calculated and compared with the following allowable leakage:

$$\text{Allowable Leakage (gph)} = \frac{\text{Pipe Length (feet)} \times \text{Nominal Diameter (inches)}}{10,876^*}$$

*Correct only for 150 psi test pressure

- I. If any test discloses leakage greater than that specified above, the CONTRACTOR shall, at his own expense, locate and make repairs as necessary until the leakage is within the specified allowance.
- J. Final acceptance of the lines will not occur until satisfactory tests have been passed.

END OF SECTION

SECTION 02595 - DISINFECTION OF WATER MAINS

1.1 Products:

Acceptable Disinfectants:

Sodium hypochlorite (NaOCl):

- o Shall conform to the provisions of AWWA B300 'Standard for Hypochlorites' and
- o Shall be certified to meet NSF/ANSI Standard 60 - *latest revision*, Drinking Water Treatment Chemicals – Health Effects.

Acceptable Dechlorination (neutralizing) Agents:

As defined in AWWA C651 'Standard for Disinfecting Water Mains',

Appendix C

2.1 Scope

This specification becomes a standard part of the contract documents and covers the disinfecting and flushing of water mains within the Portland Water District distribution system. Unless specified otherwise, all procedures apply to new mains, cleaned mains, cleaned and relined mains, repaired mains, and mains which have been out of service for a long period of time.

In certain circumstances, the Director of Water Services or designee may waive or alter the requirements in this specification where it is determined that no reasonable threat of contamination constituting a health hazard or aesthetic deterioration exists in the water main in question.

3.1 Keeping the Pipe Clean and Dry

Precautions shall be taken by the Contractor to protect the interiors of pipes, fittings, and valves against contamination:

- Pipe delivered for construction, or any remaining piece of cut pipe not immediately installed, shall be strung and protected so as to prevent entrance of any foreign material.
- Pipe shall not be laid in water, or when trench conditions or weather conditions are unsuitable for such work.
- All openings in the pipeline shall be closed with watertight plugs when pipe laying is stopped at the close of the day's work or for other reasons.
- Joints of all pipe in the trench shall be completed before work is stopped.
- The surface of the joint rings shall be thoroughly cleaned with an approved soap solution and all foreign matter removed from the pipe and fittings before the pipe is lowered in the trench.

- If dirt enters the pipe, it shall be removed and the interior of all affected pipe and fittings shall be swabbed with a 5% Hypochlorite solution (compliant with NSF/ANSI Standard 60, latest revision) immediately before they are installed.
- Pipes and services in the ground shall be closed off when not under construction.

4.1 Pre-Flushing

The District shall flush the source water, as near the shut off as possible prior to tying-in to ensure that contaminants or debris are not introduced into the new pipe.

5.1 Flushing

The main shall be flushed through a hydrant at the end of the main. If no hydrant is installed at the end of the main, the Contractor shall provide a tap large enough with a goal of achieving a velocity of 2.5 ft/sec. The gallons per minute to achieve 2.5 ft./sec velocities for different diameter pipes are provided in Table 1.

Table 1 Gallons per minute required to obtain 2.5 feet per second flushing velocity

Main Size (in.)	Gallons per minute
6	200
8	400
12	900
16	1600

District water at no cost to the Contractor will be available to the work site for use in disinfecting and flushing mains. The Contractor shall furnish all necessary pipe and hose connections. The Contractor shall exercise care in the use of the water to prevent contamination of the existing water supply. The Contractor is responsible for providing adequate drainage during flushing and is responsible for any damage that may occur. Drainage shall be away from the main, and flooding of the trench shall be prevented. The volume of water flushed shall be measured or calculated and reported to the District Inspector.

Wherever the conditions allow, the new water main shall be kept isolated from the active distribution system using a physical separation until satisfactory bacteriological testing has been completed and the disinfectant water flushed out. Water required to fill the new main for hydrostatic pressure testing, disinfection, and flushing shall be supplied through a temporary connection between the distribution system and the new main. The temporary connection shall include a double check valve assembly backflow preventer and shall be disconnected (physically separated) from the new main during the hydrostatic pressure test. It will be necessary to reestablish the temporary connection after completion of the hydrostatic pressure test to flush out the disinfectant water prior to final connection of the new main to the distribution system.

6.1 Methods of Disinfection

The Contractor shall disinfect all portions of the water main that was worked on as well as any portion(s) of the network that was taken out-of-service to allow completion of the contract. The chlorine solution to be used must be Sodium Hypochlorite.

NOTE – The use of Calcium Hypochlorite granules left in the main to be dissolved on filling of the main is not an approved method.

6.1.1 Continuous Feed Method

The continuous feed method consists of, in this order: completely filling the main to remove all air pockets, flushing the completed main to remove particulates, and filling the main with chlorinated potable water so that after a 24±4-hour holding period in the main there will be a free chlorine residual of not less than 10 mg/L at all locations of the main.

NOTE – Flushing is not a substitute for preventive measures to avoid pipe contamination during construction.

At a point not more than 10 ft. downstream from the beginning of a new main, water entering the new main shall receive a dose of chlorine pumped at a constant rate such that the water at any location will have not less than 25 mg/L of chlorine. To ensure that this concentration is provided, the District representative shall measure the chlorine concentration at regular intervals at available blow-offs or hydrants in accordance with procedures described in the current editions of “Standard Methods for the Examination of Water and Wastewater” or using an appropriate chlorine test kit.

Table 2 gives the amount of chlorine required for each 100 ft. of pipe of various diameters. Solutions of 1% chlorine shall be prepared with Sodium Hypochlorite. During the application of chlorine, valves shall be closed so that the strong chlorine solution in the main being treated will not flow into water mains in active service. Chlorine application shall not cease until the entire main is filled with heavily chlorinated water. The chlorinated water shall be retained in the main for at least 24±4 hours, during which time all valves and hydrants in the section treated shall be operated in order to disinfect the appurtenances. At the end of this 24±4-hour period, the treated water in all the portions of the main shall have a residual of not less than 10 mg/L of free chlorine.

Table 2 Chlorine Required to Produce 25 mg/L Concentration in 100 feet of Pipe by diameter

Pipe size (in.)	Volume (gals in 100 feet of Pipe)	12.5% Chlorine solution per 100 feet of Pipe	
4	65	2 oz.	
6	150	4oz.	
8	260	7 oz.	
10	410	10 oz.	
12	590	15 oz.	
16	920	27 oz.	
24	2350	60 oz	
30	3680	94 oz.	
36	5290	1.06	
42	7200	1.44	
48	9400	1.88	
54	11900	2.38	
60	14690	2.94	

NOTE: To make a 5% chlorine solution. Using Sodium Hypochlorite, dilute the hypochlorite according to the percent available chlorine on the container. For example, if you have one gallon of 12.5% Sodium Hypochlorite, place 1 gallon in 1.5 gallons of water. You then have 2.5 gallons of 5% solution.

6.1.2 Slug Method (Emergency Use Only)

At a point not more than 10 ft. downstream from the beginning of the new main, water entering the new main shall receive a dose of chlorine fed at a constant rate such that the water will have not less than 100 mg/L of free chlorine. To ensure that this concentration is provided, the District representative shall measure the chlorine concentration at regular intervals along the main where taps and/or hydrants have been provided. The chlorine shall be applied continuously and for sufficient period to develop a solid column or 'slug' of chlorinated water that will, as it moves through the main, expose all interior surfaces to a concentration of approximately 100 mg/L for at least 3 hours.

The free chlorine residual shall be measured in the slug as it moves through the main. If at any time it drops below 50 mg/L, the Contractor shall stop the flow, chlorination equipment shall be relocated at the head of the slug, and as flow is resumed, chlorine shall be applied to restore the free chlorine in the slug to not less than 100 mg/L.

As the chlorinated water flows past fittings and valves, related valves and hydrants shall be operated so as to disinfect appurtenances and pipe branches.

7.1 Flushing After Disinfection

After the applicable retention period, the heavily chlorinated water shall be flushed from the main into the sewer until chlorine measurements show that the concentration in the water leaving the main is no higher than that generally prevailing in the system. Where domestic sewers are not available, the heavily chlorinated water shall be dechlorinated. The replacement water shall be allowed to remain in the pipeline for 24 hrs.(+/- 4 hrs.) prior to sampling for physical, bacteriological, and chemical testing.

7.2 Analytical Tests

After the appropriate retention time (24 ± 4 hours or 3 hours for the slug method), after flushing and before the water main is placed into service, a sample or samples shall be collected for sanitary analysis by a District representative. Suitable sample piping shall be furnished by the Contractor to allow sample collection. The sampling point or points shall provide samples, which are representative of the water in all sections of the main for which sanitary approval is requested. All samples shall be collected in a manner as to avoid contamination from the environment surrounding the main. Rubber or synthetic hose shall not be connected to the main to collect a representative sample. The area around the sampling point of the main shall not be filled with water. At least one sample shall be taken from each main, and in the case where a main is greater than 1000 feet, one sample from each 500 feet of line. The samples shall be submitted to the District Laboratory for bacteriological, chemical, and physical analysis. The following analyses shall be completed and reported on the appropriate form. Total chlorine residual, Total Coliform (Membrane Filtration method), pH, and turbidity.

7.3 Final Flushing

Disinfected water mains shall be flushed within 4 hours of being placed into service. Flushing shall be designed to restore water quality to that of the source water, immediately prior to being placed into service. The length of time of flushing shall depend on the size and length of the water main, however at least three volumes of water should flow through the entire length of the main. Pipe volumes can be calculated by using Table 2 and adjusting for the full length of the main.

7.4 Redisinfection

If the initial disinfection and flushing fail to produce satisfactory analytical results, the main may be reflushed and shall be resampled. If check samples show the presence of coliform organisms, then the main shall be rechlorinated by the Contractor using the continuous feed method of chlorination.

7.5 Foam Pigging

If re-chlorination still produces unsatisfactory test results the main shall be cleaned utilizing polyurethane foam pigs. Pigging shall be performed by a contractor experienced in pigging operations acceptable to the District. Foam pigs shall be new and only used once. The pig shall be immersed in a 25 mg/l solution of sodium hypochlorite prior to launching. Pigs shall be pushed through the main with water pressure until the water is clear and the pig is clean. If water samples taken after the pigging operation indicate the

presence of coliform bacteria, the pigging process shall be repeated until two consecutive samples test negative for bacteria.

7.6 Miscellaneous

The contractor will be responsible for all District costs beginning with pigging operations and continuing through successful bacteriological testing. This includes all inspection, sampling and laboratory costs.

7.7 Final Connection

Water mains and appurtenances must be completely installed, flushed, tested for leakage, disinfected, and satisfactory bacteriological sample results received prior to permanent connections being made to the active distribution system where the new main was isolated from the existing system. Sanitary construction practices must be followed during installation of the final connection to insure that there is no contamination of the new or existing water main with foreign material or groundwater.

The new pipe, fittings, and valve(s) required for the connection will be spray-disinfected or swabbed with a 5% solution of chlorine just prior to being installed.

7.8 Dechlorination

Contact the local sewer authority before discharging the highly chlorinated water to the sewer. The discharge of water to the environment with chlorine concentrations greater than the ambient distribution system chlorine residual is prohibited. The highly chlorinated water must be dechlorinated before being discharged to the environment.

END OF SECTION

SECTION 02999 – Water Main Materials Specifications

Note: All materials must meet all Buy America provisions of MDOT contract documents

BOLTS AND NUTS

GENERAL SPECIFICATIONS

General Description of Properties Required:

- 1.0 Stainless Steel: Type 304 – contains the addition of Molybdenum to the nickel-chromium steels.
- 2.0 High Strength/Low Alloy Steel: Trade name for cold formed T-head bolts containing alloying elements such as copper, nickel, and chrome (Cor-Ten).

CORPORATION STOPS

GENERAL SPECIFICATIONS

- 1.0 Conforming to AWWA C-800.
- 2.0 $\frac{3}{4}$ " to 2" curb stops shall be ball valve design with brass ball that is teflon coated or brass ball with teflon seats.
- 3.0 The ball shall be supported by seats which are water tight in either direction.
- 4.0 The valve shall have a full port opening.
- 5.0 The body of the corporation stop shall be of heavy duty design.
- 6.0 The valve working pressure shall be 300 p.s.i.

APPROVED MANUFACTURERS

- A. A.Y. McDonald
- B. Cambridge Brass
- C. Ford Meter Box Co.
- D. Mueller Co.

CURB STOPS

GENERAL SPECIFICATIONS

- 1.0 Conforming to AWWA C-800
- 2.0 $\frac{3}{4}$ " to 2" curb stops shall be ball valve design with brass ball that is teflon coated or brass ball with teflon seats.
- 3.0 The ball shall be supported by seats which are water tight in either direction.
- 4.0 The valve shall have a full-port opening.
- 5.0 The valve shall open with $\frac{1}{4}$ turn (90°) with a check or stop.
- 6.0 The valve shall not have a drain.
- 7.0 The valve stem shall have 2 "O" rings and a bronze ring lock which holds the stem solidly in the valve body.
- 8.0 The valve body shall be of heavy duty design.
- 9.0 The valve working pressure shall be 300 p.s.i.

APPROVED MANUFACTURERS

- A. A.Y. McDonald
- B. Cambridge Brass
- C. Ford Meter Box Co.
- D. Mueller Co.

CUT-IN SLEEVE

GENERAL SPECIFICATIONS

- 1.0 The sleeve shall be mechanical joint to plain-end type.
- 2.0 The sleeve shall fit over either AB or CD pattern pipe.
- 3.0 Coatings:
 - a) Interior – Seal-coated – AWWA C104-74, min. 4 mils D.F.T.
 - b) Exterior – Bituminous coated, min. 4 mils D.F.T.
- 4.0 Mechanical joint accessories shall be furnished:
 - a) Glands: Duck-tipped for AB pipe, Plain Gaskets for CD pipe
 - b) Cor-Ten tee bolts and nuts
- 5.0 Cut-in sleeves shall have at least one stop-screw in sizes up through 10" and at least 2 stop-screws in 12" size.
- 6.0 The stop-screw "O" ring shall be recessed into the body of the sleeve between stop-screw and body.

APPROVED MANUFACTURERS

- A. Mueller Co.

DUCTILE IRON FITTINGS

INCLUDING BENDS, REDUCERS, OFF-SETS, TEES AND SLEEVES

GENERAL SPECIFICATIONS

- 7.0 Material shall be ASTM A536 latest, grade 70-50-05, in accordance with AWWA C110 (latest revision) for fittings larger than 24" and C153 (latest revision) for fittings 3" thru 24".
- 8.0 Fittings shall be cement lined AWWA C104 (latest revision) or fusion bonded epoxy coated with a 5 mil nominal thickness per AWWA C550 and C116.
- 9.0 Interior seal coated AWWA C104 with minimum of 4 mils dry film thickness.
- 10.0 Exterior bituminous coated, 4 mils minimum dry film thickness or fusion bonded epoxy coated with a 5 mil nominal thickness per AWWA C550 and C116.
- 11.0 Sleeves shall not be cement lined, but shall be bituminous coated inside to 4 mils dry film thickness. All sleeves shall be long body type.
- 12.0 Mechanical joint with accessories furnished: D.I. glands, gaskets, Cor-Ten T-bolts and nuts.
- 13.0 Pressure Ratings:
 - a) Class 350 pressure rating in accordance with AWWA C153 - 3"-24" sizes.
 - b) Class 250 pressure rating in accordance with AWWA C110 - 30"-48" sizes.
- 14.0 The "compact design" fittings must provide adequate space for the MJ joint and accessories to be installed without special tools (i.e. Lowell wrench can be used).

DUCTILE IRON PIPE

GENERAL SPECIFICATIONS

- 1.0 Ductile iron pipe shall meet requirements of AWWA Standard C-151 (latest revision) and be cement lined and seal coated to meet AWWA Standard C-104 (latest revision).
- 2.0 Joints shall meet requirements of AWWA C-111 (latest revision).
- 3.0 Interior seal coated, bituminous paint oil cut, emulsion not acceptable, thickness minimum of 2 mils dry film thickness.
- 4.0 Exterior bituminous coated with minimum of 2 mils dry film thickness.
- 5.0 Class 52 wall thickness, 4-inch diameter through 12-inch diameter inclusive.
- 6.0 Ductile Iron Pipe with diameters 16-inches and larger shall be Class 51.
- 7.0 State nominal laying length and mark shorter lengths near bell.
- 8.0 Mechanical joint pipe to be furnished with gland, gaskets and Cor-Ten bolts and nuts.
- 9.0 Welded-on thrust collars, for wall pipe and pipe thrust restraint, shall be welded steel collars designed for the thrust generated by 250 psi working pressure with a safety factor of at least two (2.0) against failure. The manufacturer shall qualify all welding procedures and welders per the requirements of a documented quality assurance system based on ANSI/AWS D11.2.

APPROVED MANUFACTURERS

- A. American Cast Iron Pipe
- B. Griffin Pipe
- C. U.S. Pipe

FIRE HYDRANT

GENERAL SPECIFICATIONS

- 1.0 The hydrant shall open right.
- 2.0 The operating nut shall:
 - a) be D.I. or bronze
 - b) be pentagon in shape with dimensions: Top 1-13/16" tapering to 1-7/8" on bottom.
- 3.0 Nozzles shall be:
 - a) 2 each – 2-1/2" National Standard Thread
 - b) 1 each – 4-1/2" National Standard Thread.
- 4.0 Port covers shall be supplied without chains and shall have the same size pentagon operator as specified in 3.0(b) above.
- 5.0 Traffic model hydrant with breakaway feature
- 6.0 Barrel length(s) shall be:
 - a) 6 ft. cover, 6-1/2 ft. bury; or
 - b) 5-1/2 ft. cover, 6 ft. bury, or
 - c) 5 ft. cover, 5'-6" bury
- 7.0 Hydrant shoe or base shall have the following:
 - a) 6" MJ inlet;
 - b) 5-1/4" valve opening with non-draining bronze seat that is permanently plugged;
 - c) valve seat and sub-seat arrangement shall be bronze to bronze;
 - d) Horizontal and vertical blocking planes manufactured into hydrant base
- 8.0 Bolts:
 - a) all buried mechanical joint bolts and nuts (T-head, etc.) shall be Cor-Ten or equal;
 - b) all buried flange joint bolts shall be stainless steel (Type 304) or silicone bronze.
- 9.0 Protective Coatings shall consist of the following:
 - a) all paintings and coatings shall be a minimum of 3 mils total dry film thickness, unless noted

- b) the internal area of the hydrant base, which is normally exposed to water and which includes the internal body of hydrant shoes, including lower valve plate, shall be epoxy coated
- c) all internal and external cast iron or ductile iron components shall be coated with an approved bituminous coating, 3 mils minimum
- d) Coatings for upper barrel - exterior:
 - 1. Surface preparation blast clean SSPC-SP-6
 - 2. Primer Sherwin Williams Red Oxide E61RC21, 1.5 mils, dry
 - 3. Finish coat Sherwin Williams – Regal Yellow, F78Y30, 1.5 mils, dry or sufficient paint to hide the second coat
 - 4. Total dry film thickness - 3 mils minimum.
- e) Coatings for bonnet, operating nut, port cap:
 - 1. Surface preparation: Blast clean, SSPC-SP-6
 - 2. Exterior primer
 - 3. Exterior aluminum
 - 4. Total dry film thickness: 3 mils minimum.

10.0 Flow Indicator Collars: PWD personnel shall install flow indicator collars on all new hydrants.

FIELD TEST OF INSTALLED HYDRANT

- 1.0 Hydrant flow shall completely stop with no more than 200 ft. lb. of torque applied to the operating nut.
- 2.0 Failure to shut completely at no more than 200 ft. lb. of torque will be cause for rejection of that hydrant.

APPROVED HYDRANTS

- A. Clow Eddy – with lower stem machined from bar stock
- B. American Darling Models: B62B-1, B62B-5

PIPE JOINT RESTRAINER

GENERAL SPECIFICATIONS

1.0 Pipe Restraints:

- 1.1 Use in conjunction with mechanical joint fittings.
- 1.2 The joint restraint ring and its wedging components shall be made of ductile iron conforming to ASTM A536-80.
- 1.3 Dimensions of the restrainer must allow use with standard M.J. bell conforming to AWWA C111 and AWWA C153.
- 1.4 Restrainer must restrain up to 350 psi of working pressure in 3" to 16" sizes and 250 psi of working pressure in 18" to 48" sizes with a 2:1 safety factor.
- 1.5 Torque limiting twist off nuts shall be used to ensure proper actuation of the restraining wedges (used on a,b,c below).

APPROVED MANUFACTURERS

- A. Sigma Super Lug
- B. Ford Uni-Flange Series 1400
- C. Ebba Mega Lug
- D. Romac Grip Ring
- E. Star Grip Series 300
- F. Romac Romagrip
- G. MJ FIELD LOK Gasket

POLYETHYLENE ENCASEMENT

GENERAL SPECIFICATIONS

- 1.0 Tube type polyethylene encasement shall be installed on all ductile iron pipe and fittings in accordance with AWWA Standard C105 - latest revision, Method A.
- 2.0 Polyethylene encasement shall be either linear low-density polyethylene (LLDPE) film with a minimum thickness of 8-mil or high-density, cross-laminated polyethylene (HDCLPE) film with a minimum thickness of 4-mil.
- 3.0 Circumferential wraps of tape or plastic tie straps shall be placed at 2-ft. intervals along the barrel of the pipe.
- 4.0 The polyethylene encasement shall prevent contact between the pipe and the surrounding backfill and bedding material but is not intended to be a completely airtight or watertight enclosure. All lumps of clay, mud, cinders, and so forth, on the pipe surface shall be removed prior to installation of the polyethylene encasement. During installation, care shall be exercised to prevent soil or embankment material from becoming trapped between the pipe and the polyethylene.
- 5.0 The polyethylene film shall be fitted to the contour of the pipe to effect a snug, but not tight, encasement with minimum space between the polyethylene and the pipe. Sufficient slack shall be provided in contouring to prevent stretching the polyethylene where it bridges irregular surfaces, such as bell-spigot interfaces, bolted joints, or fittings, and to prevent damage to the polyethylene due to backfilling operations. Overlaps and ends shall be secured with adhesive tape, string, plastic tie straps, or any other material capable of holding the polyethylene encasement in place until backfilling operations are complete.
- 6.0 Three layers of polyethylene adhesive tape shall be wrapped around any polywrapped pipe where a tapping machine will be placed. All copper services connected to a pipe wrapped in polyethylene encasement shall be wrapped within three feet of the pipe.

RESILIENT SEATED GATE VALVE

GENERAL SPECIFICATIONS

- 1.0 Valve shall meet the latest revision of the AWWA C-509 or C-515 Standard.
- 2.0 Valve shall have a smooth unobstructed water way which shall be a minimum diameter of the valve.
- 3.0 Valve ends to be specified and shall be furnished with Cor-ten (or equal) bolts and nuts.
- 4.0 Valve shall be rated for zero leak rate at 200 psi differential working pressure and have a 400 psi hydrostatic test for structural integrity.
- 5.0 Sealing - Valve shall have a minimum of 2 "O" rings situated such that the "O" rings above the thrust collar can be replaced with the valve under pressure and in the open position.
- 6.0 Stem - Valve stem shall:
 - a) open right with a stem nut made of grade D,E manganese bronze;
 - b) be non-rising;
 - c) be designed with a thrust collar integrally cast to the stem;
 - d) be designed with two (2) thrust washers, placed one above and one below the stem thrust collar;
 - e) be constructed of grade D,E manganese bronze;
 - f) be such that the thrust washers are made of a synthetic polymer with physical properties required.
- 7.0 Valve Body - The body, including the stuffing box and the bonnet, shall be constructed of cast iron or ductile iron, meeting the latest revision of AWWA C-153.
- 8.0 Valve Wedge:
 - a) shall be constructed of ductile iron (less guiding mechanism);
 - b) shall be fully encapsulated and permanently bonded with a resilient elastomer;
 - c) shall be constructed such to allow the flushing of any interior exposed surface during operations.
- 9.0 Coatings:

- a) the internal and external valve body, including the stuffing box, bonnet, and interior of the wedge shall be fusion bonded epoxy coated with 8 mils D.F.T.
- b) interior shall meet latest version of AWWA C-550.
- c) shall be holiday free, interior and exterior, per testing method described in AWWA C-550, Sec. 5.1.

10.0 Operating Nut:

- a) shall be two (2) inch square ductile iron:
 - 1. with a countersunk hold down nut (made of 316 stainless steel or silicone bronze). This applies to stems that are tapered; or
 - 2. with a stainless steel pin inserted thru the stem. This applies to stems of full diameter.

11.0 Bolts – The seal plate and bonnet bolts shall be stainless steel (Type 316 or Type 304).

12.0 Valves 12" nominal diameter and smaller shall be directly operated by the nut on the valve stem and mounted vertically. Number of turns to open or close shall closely match the formula: $(3 \times D) + 2$. For example, a 12" valve should open or close with approximately $(3 \times 12) + 2 = 38$ turns of the operating nut.

13.0 Horizontal valves larger than 12" nominal diameter shall have bevel gear operators driven by the operating nut. Vertical valves larger than 12" nominal diameter shall have spur gear operators driven by the operating nut. Valves 14" – 24" nominal diameter shall have 4:1 bevel gear operators. Valves with 30" – 36" nominal diameters shall have 6:1 bevel gear operators and valves with 42" – 48" nominal diameters shall have 8:1 bevel gear operators. Number of turns to open or close shall closely match the formula: $((3 \times D) + 2)$ times the bevel gear ratio. For example, a 24" valve should open or close with approximately $((3 \times 24) + 2) \times 4 = 296$ turns of the operating nut.

GENERAL PROVISIONS

- 1.0 Vendor shall identify any and all exceptions to the specifications.
- 2.0 Vendor shall provide standard brochures for item quoted.
- 3.0 Vendor may be required to supply a valve for inspection and determination of coating process.

APPROVED RESILIENT SEATED GATE VALVES

- A. U.S.P.
- B. AFC Series 2500
- C. Mueller A-2360/61
- D. Clow Series F6100

INSERTION GATE VALVE

GENERAL SPECIFICATIONS

- 1.0 Valve shall meet the latest revision of the AWWA C-509 Standard.
- 2.0 Valve shall have a smooth unobstructed water way which shall be a minimum diameter of the valve.
- 3.0 Valve ends to be specified and shall be furnished with Cor-ten (or equal) bolts and nuts.
- 4.0 Valve shall be rated for 250 psi differential working pressure.
- 5.0 Valve Body - The body, including the stuffing box and the bonnet, shall be constructed ductile iron, meeting the latest revision of AWWA C-153.
- 6.0 The milled slot in the pipe wall shall be less than 2" wide.
- 7.0 Coatings:
 - a) the internal and external valve body, including the stuffing box, bonnet, and interior of the wedge shall be fusion bonded epoxy coated with 8 mils D.F.T.
 - b) interior shall meet latest version of AWWA C-550.
- 8.0 Bolts – The seal plate and bonnet bolts shall be stainless steel (Type 316 or Type 304).

APPROVED INSERTION VALVE:

- A. Inserta Valve (Romac) or approved American Manufacturer

RESTRAINED JOINT GASKETS

GENERAL SPECIFICATIONS

- 1.0 All accepted restrained joint gaskets in the Portland Water District distribution system shall be rated in accordance with the performance requirements of ANSI/AWWA C111/A21.11.
- 2.0 Required Applications
 - 2.1 Any hydrant branch or service with a distance greater than 18' shall have an approved restrained joint gasket in the bell ends.
 - 2.2 Where a casing is required, all joints within the casing shall have an approved restrained joint gasket unless restrained joint pipe is used.
 - 2.3 At any time as required by a PWD Engineer.
 - 2.4 Any live service tap where there is a joint between the connection and the end of the service.

APPROVED MANUFACTURERS

- A. American Fast-Grip Gasket – American Pipe
- B. Field Lok 350 Gasket – US Pipe

SERVICE BOX AND ROD

GENERAL SPECIFICATIONS

Reference Standard Details

1.0 Service Box

- 1.1 Shall be 1.0" Schedule 40 steel pipe with top having 1.0" N.P.T. pipe threads for screw-on cover or coupling.
- 1.2 Shall be Erie style with 6' slide-type riser.
- 1.3 Any extension of a service box requires a threaded merchant coupling with no set screw.

2.0 Service Box Cover

- 2.1 Shall be Quincy type (heavy duty) cover that screws on Service Box (1.1 above).
- 2.2 Shall be tapped with a 1" rope thread with a solid brass plug with pentagon operating head.

3.0 Service Box Foot Piece

- 3.1 The standard foot piece shall be heavy duty (Ford style or equal) cast iron design.
- 3.2 The large, heavy-duty foot piece shall have an arch that will fit over 2" ball-valve curb stops.

4.0 Service Rod

- 4.1 Shall have a self aligning design.
 - a) 36" length for all services.
 - b) 24" length for air valves.
- 4.2 Shall be round and constructed of stainless steel (304) with an epoxy coating (minimum 4 mil D.F.T.).

4.3 Shall have a yoke design that is an integral part of the rod.

4.4 The curb-stop attachment pin shall be a brass cotter pin.

4.5 The rod "wrench-flat" shall have a minimum thickness of $\frac{1}{4}$ " tapered to $\frac{1}{16}$ " and width of $\frac{5}{8}$ " or $\frac{1}{2}$ ".

4.6 Diameter

a) $\frac{1}{2}$ ", $\frac{3}{4}$ " and 1" services use $\frac{1}{2}$ " diameter.

b) 1 $\frac{1}{2}$ " and 2" services use $\frac{5}{8}$ " diameter.

SERVICE SADDLES

GENERAL SPECIFICATIONS FOR DUCTILE IRON PIPE

- 1.0 The service saddle shall have the "larger sized" body, the same as associated with the "service repair" saddle, which shall have a minimum diameter of 6 in. and multiple "O" ring type sealing.
- 2.0 The saddle body shall be constructed of epoxy coated ductile iron.
- 3.0 The sealing gasket(s) shall be either Buna-N rubber or SBR rubber (ASTM D2000).
- 4.0 Service saddles shall be installed with all 1 1/2" and 2" corporation stops (cc only).

Approved Manufacturers

<u>Size</u>	<u>Tap</u>	<u>Saddle</u>
2" – 2-1/4"	3/4", 1" cc	Smith-Blair 315, Ford FC 202
4" - 12" D.I.	3/4" - 1 1/2" cc	Smith Blair 331
4" - 12" D.I.	2" cc	Smith-Blair 313
16"	3/4"-2" cc	Smith-Blair 313
20" – 36"	3/4"-2"cc	Smith-Blair 366

GENERAL SPECIFICATIONS FOR PVC PIPE

- 1.0 Stainless steel straps will be used on saddles on C-900 PVC Pipe

Approved Manufacturers

<u>Size</u>		<u>Saddle</u>
4"-12"		Smith-Blair 265

STAINLESS STEEL REPAIR CLAMPS

GENERAL SPECIFICATIONS

- 1.0 The sleeve shall be of full circle design, either one piece or two piece, for pipe sizes 2" thru 12".
- 2.0 Body: Shall be 18-8 stainless steel shell.
- 3.0 Gasket:
 - a) Shall be full length and diameter of the body size;
 - b) This gasket shall form a multiple O-ring, or grid, sealing barrier for the entire length and circumference;
 - c) Shall be virgin SBR rubber (ASTM D2000 AA 415).
- 4.0 Lugs, sidebar, and lifting bar shall be heavy gauge 18-8 stainless steel with TIG/MIG welding and chemical passivation of all welds.
- 5.0 Bolts and Nuts shall be Teflon coated 18-8 heavy gauge stainless steel.
- 6.0 Armor: The armor, or bridging plate between the side bars shall be heavy gauge 18-8 stainless steel bonded to the gasket to bridge the lug area.

APPROVED MANUFACTURERS

- A. All Manufacturers

TAPPING SLEEVES (on Ductile Iron Pipe)

GENERAL SPECIFICATIONS

- 1.0 For sizes 12" and smaller tapping sleeve shall be ductile iron or approved fabricated steel:
 - 1.1 Tapping sleeve shall be mechanical joint with recessed outlet flange for tapping valve.
 - 1.2 Tapping sleeve shall conform to AWWA C-207, Class D, with rated maximum working pressure of 200 psi.
 - 1.3 The side rubber gaskets shall be rectangular in cross-section and fit into grooved channels in the casting. These gaskets shall extend the entire length of the sleeve and shall not require cutting or trimming to match MJ end gaskets.
 - 1.4 Tapping sleeve shall be AB-CD pattern to permit use of plain rubber and duck-tipped gaskets for various O.D. piping sizes.
 - 1.5 Mechanical joint with accessories furnished; glands, gaskets, and Cor-Ten T-bolts and nuts or equal.
 - 1.6 All flange outlet bolts shall be stainless steel (Type 304).
 - 1.7 Interior and exterior to be bituminous coated with a minimum of 4 mils dry film thickness or fusion bonded epoxy coated.
 - 1.8 The sleeve shall be provided with a 3/4" F.I.P.T. test port and brass lug.
- 2.0 For sizes 16" and larger tapping sleeve shall be fabricated steel:
 - 2.1 Body and Flange - A-36
 - 2.2 Coating - Fusion-bonded epoxy coating with minimum D.F.T. of 15 mils, inside and out.
 - 2.3 Bolts, Nuts - Stainless Steel (Type 304).
 - 2.4 Gaskets - Nitrile

- 2.5 Flange - AWWA Class D plate flange with ANSI 150# drilling, proper recessing for tapping valves.
- 2.6 Sleeves shall be provided with 3/4" F.I.P.T. test port and plug.
- 2.7 Taps larger than 20" require an experience submittal. The tapping contractor shall have a minimum of seven continuous years of experience tapping pipes larger than 20" in diameter. Furmanite Corp. – Paulsboro, NJ or equal.

APPROVED MANUFACTURERS (4"-12")

- A. AFC
- B. Mueller Co.
- C. U.S. Pipe
- D. Tyler / Union
- E. Powerseal Model 3490 and 3490MJ (Fabricated Steel)

APPROVED MANUFACTURERS (16" and larger)

- A. Romac FTS 420
- B. Ford FTSC
- C. Smith Blair 622
- D. JCM 412
- E. Powerseal Model 3490 and 3490 MJ (up to 24")
- F. JCM 415 or approved equal (for RCCP pipe only)

VALVE BOXES

GENERAL SPECIFICATIONS

Reference Standard Details

- 1.0 The valve box bottom section shall be slide-type with bell-type base with bottom lip.
Manufacturer: American Manufacture
- 2.0 The valve box top section shall be slide-type, 36 inches long (minimum). No top flange and no "bead" or bottom flange.
Manufacturer: American Manufacture
- 3.0 The valve box cover shall be a 2" drop-type cover to fit the 7-1/4" opening of the top section.
Manufacturer: American Manufacture
- 4.0 The valve box intermediate (mid) section shall be slide-type with a minimum 3" belled bottom. Base section No. 645 may be used as an alternate.
Manufacturer: American Manufacture
- 5.0 Material shall be cast iron or ductile iron free from defects.
- 6.0 Interior and exterior of all components shall be bituminous coated with a minimum of 4 mils dry film thickness.

END OF SECTION

SPECIAL PROVISION
SECTION 910
SPECIAL WORK
(Utility Conduit – Concrete Duct Bank)

Description This work shall consist of all work shown in the Plans, as referenced in Special Provision 104 and described in this special provision. This work shall consist of furnishing and installing all materials and labor for the installation of one concrete duct bank consisting of seven (6) 4-inch schedule 40 PVC conduit and three (3) 6-inch schedule 40 PVC conduit, all trenching and backfilling, sand bed, traffic rated electrical vaults (splice boxes) with round cast iron frames and covers, crushed stone bases, bricks, mortar, covers, any gradual sweeps (36-inch minimum if necessary), pull rope, tracer wire, warning tape, and all associated hardware and incidentals related to these items necessary to complete the work. See vault and trench details in the plans. The utility owners' name (CMP, Consolidated, Spectrum, First Light, Tilson, and City of Portland) shall be clearly labeled and visible at each terminus on their respective conduit to differentiate it from conduits intended for other utility owners.

Materials The Contractor shall be responsible for the furnishing and fabrication of all material and associated hardware as shown in the Plans and described in this specification.

The materials furnished by the Contractor shall be new. All materials shall conform to NEMA or UL standards as applicable. Non-metallic conduit shall be rigid unplasticized polyvinylchloride (PVC) conduit, schedule 40, suitable for burial. Pull-lines shall be polypropylene rope of a minimum of 1/4 inch diameter from the proposed splice box at approximate Sta. 103+16 LT to the proposed splice box at approximate Sta. 107+14 LT.

The Contractor shall within 60 days following execution of the contract, submit a list of materials which are to be installed. The list shall include the manufacturer, size, and identifying number of each item. The list shall be supplemented by such data as may be required, including detailed scale drawings of proposed minor deviations from the plans. The Contractor shall submit for review, design data and sample articles of the material proposed for use. All of the data shall be submitted in duplicate.

Workmanship shall conform to the requirements of: NEC, NESC, ASTM Standards, and the ANSI, the local Utility Companies, the State of Maine, Manufacturers Specifications and any local ordinances that may apply except when otherwise noted on the Plans or in the Special Provisions.

Conduits shall be of the sizes noted on the Plans, which are indicated as the nominal inside diameter.

The Contractor shall be responsible for and shall repair all damage caused to underground drainage structures, utilities, or lighting conduit, which are encountered during construction.

Construction Trenches for conduits shall be excavated to a width that will permit proper installation of the conduit and to the depth shown on the Plans or as directed. Minimum cover below the roadway shall be 36 inches (36"+) over the top of the concrete encasement. After the trench has been excavated as specified, the bottom of the trench shall be prepared with a sand bedding material. After placing the conduit and concrete encasement, sand shall be placed around the sides and over the top of the conduit. The entire trench shall be backfilled with an approved material, placed in layers not exceeding eight inches (8"), and thoroughly tamped. Concrete encasement shall have a minimum compressive strength of 2,900 psi with a maximum aggregate size of 1".

All underground conduits shall be placed to at least the depth shown on the Plans and shall not interfere with poles, guardrail posts, approach rail anchor block, sign foundations or other objects. PVC conduit shall be made watertight by joining with solvent or in accordance with the manufacturer's specifications. Conduits shall be bent carefully to avoid damage and without the use of an open flame. Bends sharper than 45 degrees will not be permitted. The total angle of all bends in one run and the radius of bends shall conform to the NEC requirements.

Where PVC conduit runs are placed parallel to other conduits, they shall be separated by a minimum of 2" of sand or soil cushion. The bottom of trenches shall be lined with a 3" bedding material of tamped sand before laying the conduit. Backfill to a compacted depth of 6" above the top of the conduit shall be sand, free from rocks or hard lumps.

The Contractor shall install pull-lines in all conduits. The ends of the lines shall be secured in such manner as to prevent accidental withdrawal of the wire. All conduit ends shall be capped with watertight conduit caps.

The Contractor shall provide a metal tracer wire and a 2" wide "buried cable" plastic warning tape located 12" below grade at all underground conduits.

Method of Measurement Special Work – Utility Conduit – Concrete Duct Bank shall be measured for payment as one lump sum.

Basis of Payment Payment for Special Work – Utility Conduit – Concrete Duct Bank shall be full compensation for all materials, equipment, labor, and hardware necessary to install the utility conduits in a concrete encased duct bank. Payment for work shall include furnishing and installing conduits, utility vaults (splice boxes), concrete encasement, the required excavation and backfill and connections to existing manholes.

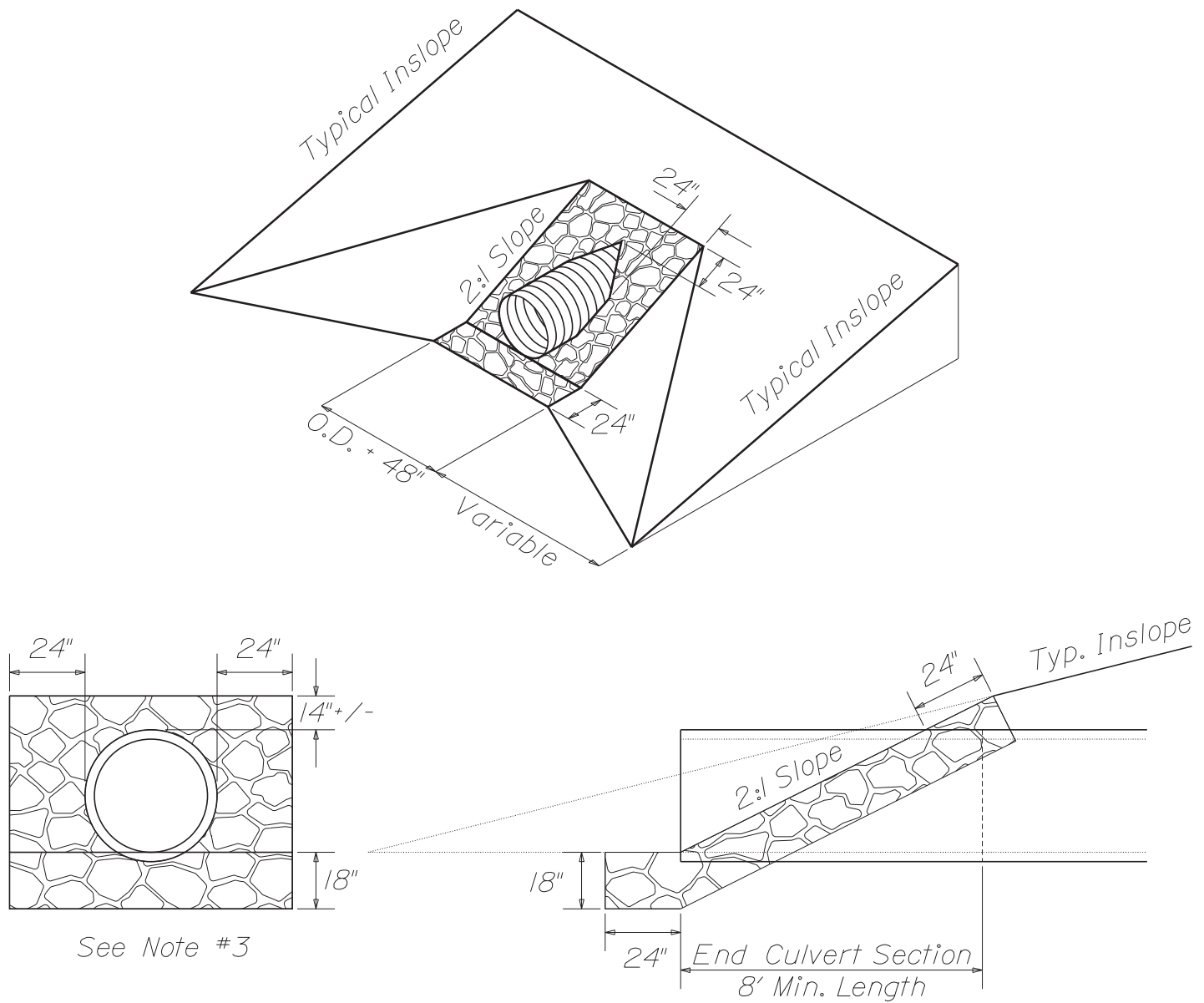
No additional payment shall be made for grade adjustments to the top of the utility vault (splice box) that may be necessary due to phasing or changes between temporary and permanent condition. Access to utility boxes shall be maintained at all times.

<u>Pay Item</u>	<u>Pay Unit</u>
910.301 Special Work – Utility Conduit – Concrete Duct Bank	Lump Sum

2020 STANDARD DETAIL UPDATES

Standard Details and Standard Detail updates are available at:
<http://maine.gov/mdot/contractors/publications/standarddetail/>

<u>Detail #</u>	<u>Description</u>	<u>Revision Date</u>
802(05)	Roadway Culvert End Slope Treatment	1/03/2017



NOTES:

1. The dimensions shown are approximate and may be modified in the field by the Resident.
2. Riprap will be required on portions of the culvert end treatment that lie on a 2:1 slope. The remaining portions shall be loamed, seeded and mulched as directed.
3. Install riprap 24" around the outside diameter of the culvert pipe.

REFERENCE: Best Management Practices for Erosion and Sediment Control - Culvert Inlet / Outlet Protection.

ROADWAY CULVERT END SLOPE TREATMENT

802(05)

Revised January 1, 2017

SUPPLEMENTAL SPECIFICATIONS
(Corrections, Additions, & Revisions to Standard Specifications – March 2020)

SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES

104.2.1 Furnishing of Right-of-Way Revise the last sentence in the first paragraph by removing “105.4.5 – Special Detours” and replacing it with “**105.4.5 – Maintenance of Existing Structures.**”.

SECTION 401
HOT MIX ASPHALT PAVEMENT

401.19 Contractor Quality Control Amend this Section by adding the following to the end:
“**Failure to comply with the approved QCP will result in work suspension and pay reductions as outlined in Section 106.4.6. The Quality Control Plan Value shall be the total bid value for all items covered by the QCP as identified in Special Provision 403.**”

SECTION 502
STRUCTURAL CONCRETE

502.09 Forms and Falsework Amend this subsection by adding the subsection title “**502.10 Placing Concrete**” after section “D” Removal of Forms and False work” and after the paragraph beginning with “2. Forms and False work, including blocking...”. So that a new subsection starts and reads:

502.10 Placing Concrete

A. **General** Concrete shall not be placed until forms”

502.1701 Quality Control, Method A and B Revise this Section so that the first paragraph and the first sentence of the second paragraph read:

502.17 Quality Control The Contractor shall control the quality of the concrete through testing, inspection, and practices which shall be described in the QCP, sufficient to assure a product meeting the Contract requirements. The QCP shall meet the requirements of Section 106, Quality, and this specification. No work under this item shall proceed until the QCP is submitted to and approved by the Department. Failure to comply with the approved QCP will result in work suspension and pay reductions as outlined in Section 106.4.6. The Quality Control Plan Value shall be the total bid value for all cast-in-place items covered by the QCP, using the P value listed in Special Provision 502. If no P value is listed, a value of \$350, or bid value per cubic yard, whichever is less, shall be used.

502.1701 Quality Control, Method A and B The QCP shall address all elements that affect the quality of the structural concrete including, but not limited to, the following: “

502.18, Method of Measurement, Revise Subsection 'F' by removing the word 'transverse' so that it reads: **"Saw cut grooving of concrete wearing surfaces, complete and accepted, will be measured for payment as one lump sum."**

502.19, Basis of Payment, Revise the third paragraph by removing the word 'transverse' so that it reads: **"Saw cut grooving of concrete wearing surfaces will be paid for at the Contract Lump Sum Price, which shall be payment for furnishing all materials, labor, and equipment, including depth gauges and all incidentals, to satisfactorily complete the work."**

535.24, Installation of Slabs, Beams, and Girders Revise the 5th paragraph by replacing "6.0 and 9.0" to "5.0 and 8.0" so it reads: **"Ready mixed grout shall achieve a design compressive strength of 6,000 psi at 28 days, have an entrained air content of between 5.0 and 8.0 percent, be non-shrink, flowable, and contain a non-shrink additive listed on the Department QPL for expansive cements."**

535.25, Installation of Precast/Prestressed Deck Panels Revise the 2nd paragraph by replacing "6.0 and 9.0" to "5.0 and 8.0" so it reads: **"Ready mixed grout shall achieve a design compressive strength of 6,000 psi at 28 days, have an entrained air content of between 5.0 and 8.0 percent, be non-shrink, flowable, and contain a non-shrink additive listed on the Department QPL for expansive cements."**

SECTION 606 GUARDRAIL

Amend this section by replacing it with the following:

606.01 Description This work shall consist of furnishing and installing guardrail components in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans or as established. Guardrail is designated as:

31" W-Beam Guardrail - Mid-Way Splice

Galvanized steel w-beam, 8" wood or composite offset blocks, galvanized steel posts

Thrie Beam

Galvanized steel thrie beam, 8" wood or composite offset blocks, galvanized steel posts

Median guardrail shall consist of two beams of the above types, mounted on single posts.

Bridge mounted guardrail shall consist of furnishing all labor, materials, and equipment necessary to install guardrail as shown on the plans. This work shall also include drilling for and installation of offset blocks if specified, and incidental hardware necessary for satisfactory completion of the work.

Remove and Reset and Remove, Modify, and Reset guardrail shall consist of removing the existing designated guardrail and resetting in a new location as shown on the plans or directed by the Resident. Remove, Modify, and Reset guardrail and Modify guardrail include the following

guardrail modifications: Removing plate washers at all posts, except at anchorage assemblies as noted on the Standard Details, adding offset blocks, and other modifications as listed in the Construction Notes or General Notes. Modifications shall conform to the guardrail Standard Details.

Bridge Connection shall consist of the installation and attachment of beam guardrail to the existing bridge. This work shall consist of constructing a concrete end post or modifying an existing end post as required, furnishing, and installing a terminal connector, necessary hardware, and incidentals required to complete the work as shown on the plans. Bridge Transition shall consist of a bridge connection and furnishing and installing guardrail components as shown in the Standard Details.

606.02 Materials Materials shall meet the requirements specified in the following Sections of Division 700 - Materials:

Timber Preservative	708.05
Metal Beam Rail	710.04
Guardrail Posts	710.07
Guardrail Hardware	710.08

Guardrail components shall meet the applicable standards of "A Guide to Standardized Highway Barrier Hardware" prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee, Task Force 13 Report.

Posts for underdrain delineators shall be "U" channel steel, 8 ft long, 2 ½ lb/ft minimum and have 3/8-inch round holes, 1-inch center to center for a minimum distance of 2 ft from the top of the post.

Reflectorized Flexible Guardrail Markers shall be mounted on all guardrails. A marker shall be mounted onto guardrail posts at the flared guardrail terminal end point and tangent point, both at the leading and trailing ends of each run of guardrail. The marker's flexible posts shall be gray with either silver-white or yellow reflectors (to match the edge line striping) at the tangents, red at leading ends, and green at trailing ends. Whenever the guardrail terminal is not flared, markers will only be required at the terminal end point. These shall be red or green as appropriate. Markers shall be installed on the protected side of guardrail posts unless otherwise approved by the Resident. Reflectorized flexible guardrail markers shall be from the Department's Qualified Products List of Delineators. The marker shall be gray, flexible, durable, and of a non-discoloring material to which 3-inch by 9-inch reflectors shall be applied, and capable of recovering from repeated impacts and meeting MASH 16 requirements. Reflective material shall meet the requirements of Section 719.01 for ASTM D 4956 Type III reflective sheeting. The marker shall be secured to the guardrail post with two fasteners, as shown in the Standard Details.

Reflectorized beam guardrail ("butterfly"-type) delineators shall be mounted on all "w"-beam guardrail. The delineators shall be mounted within the guardrail beam at guardrail posts. Delineators shall be fabricated from high-impact, ultraviolet & weather resistant thermoplastic. Reflectorized beam guardrail delineators shall be placed at approximately 62.5 ft intervals or every tenth post on tangents and at approximately 31.25 ft intervals or every fifth post on curves. Exact locations of the delineators shall be as directed by the Resident. On divided highways, the left-hand delineators shall be yellow, and the right-hand delineators shall be silver/white. On two directional highways, the

right-hand side shall be silver/white, and no reflectorized delineator used on the left. All reflectors shall have reflective sheeting applied to only one side of the delineator facing the direction of traffic as shown in the Standard Details. Reflectorized sheeting for guardrail delineators shall meet the requirements of Section 719.01.

Single wood post shall be of cedar, white oak, or tamarack, well-seasoned, straight, and sound and have been cut from live trees. The outer and inner bark shall be removed, and all knots trimmed flush with the surface of the post. Posts shall be uniform taper and free of kinks and bends.

Single steel post shall conform to the requirements of Section 710.07 b.

Single steel pipe post shall be galvanized, seamless steel pipe conforming to the requirements of ASTM A120, Schedule No. 40, Standard Weight.

Acceptable multiple mailbox assemblies shall be listed on the Department's Qualified Products List and shall be MASH 16 tested and approved.

Flared and Tangent w-beam guardrail terminals and guardrail offset blocks shall be from the Department's Qualified Products List. Flared terminals shall be installed with a 4 ft offset as shown in the Manufacturer's installation instructions.

Anchorage assemblies used to anchor trailing ends, radius guardrail, or other ends not exposed to traffic shall meet the applicable standards of "A Guide to Standardized Highway Barrier Hardware" prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee, Task Force 13 Report, Drawing SEW02a.

Existing materials damaged or lost during adjusting, removing and resetting, or removing, modifying, and resetting, shall be replaced by the Contractor without additional compensation. Existing guardrail posts and guardrail beams found to be unfit for reuse shall be replaced when directed by the Resident.

606.03 Posts Posts for guardrail shall be set plumb in holes or they may be driven if suitable driving equipment is used to prevent battering and distorting the post. When posts are driven through pavement, the damaged area around the post shall be repaired with approved bituminous patching. Damage to lighting and signal conduit and conductors shall be repaired by the Contractor.

When set in holes, posts shall be on a stable foundation and the space around the posts, backfilled in layers with suitable material, thoroughly tamped.

The reflectorized flexible guardrail markers shall be set plumb with the reflective surface facing the oncoming traffic. Markers shall be installed on the protected side of guardrail posts. Markers, which become bent or otherwise damaged, shall be removed and replaced with new markers.

Single wood posts shall be set plumb in holes and backfilled in layers with suitable material, thoroughly tamped. The Resident will designate the elevation and shape of the top. The posts, that are not pressure treated, shall be painted two coats of good quality oil base exterior house paint.

Single steel posts shall be set plumb in holes as specified for single wood posts or they may be driven if suitable driving equipment is used to prevent battering and distorting the post.

Additional bolt holes required in existing posts shall be drilled or punched, but the size of the holes shall not exceed the dimensions given in the Standard Details. Metal around the holes shall be thoroughly cleaned and painted with two coats of approved aluminum rust resistant paint. Holes shall not be burned.

606.04 Rails Brackets and fittings shall be placed and fastened as shown on the plans. Rail beams shall be erected and aligned to provide a smooth, continuous barrier. Beams shall be lapped with the exposed end away from approaching traffic.

End assemblies shall be installed as shown on the plans and shall be securely attached to the rail section and end post.

All bolts shall be of sufficient length to extend beyond the nuts but not more than ½ inch. Nuts shall be drawn tight.

Additional bolt holes required in existing beams shall be drilled or punched, but the size of the holes shall not exceed the dimensions given in the Standard Details. Metal around the holes shall be thoroughly cleaned and painted with two coats of approved aluminum rust resistant paint. Holes shall not be burned.

606.045 Offset Blocks The same offset block material is to be provided for the entire project unless otherwise specified.

606.05 Shoulder Widening At designated locations the existing shoulder of the roadway shall be widened as shown on the plans. All grading, paving, seeding, and other necessary work shall be in accordance with the Specifications for the type work being done.

606.06 Mail Box Post Single wood post shall be installed at the designated location for the support of the mailbox. The multiple mailbox assemblies shall be installed at the designated location in accordance with the Standard Details and as recommended by the Manufacturer. Attachment of the mailbox to the post will be the responsibility of the home or business owner.

606.07 Abraded Surfaces All galvanized surfaces of new guardrail and posts, which have been abraded so that the base metal is exposed, and the threaded portions of all fittings and fasteners and cut ends of bolts shall be cleaned and painted with two coats of approved rust resistant paint.

606.08 Method of Measurement Guardrail will be measured by the linear foot from center to center of end posts along the gradient of the rail except where end connections are made to masonry or steel structures, in which case measurement will be as shown on the plans. When connected to radius rail, measurement will be to the end of the last tangent beam.

Guardrail terminal, reflectorized flexible guardrail marker, terminal end, anchorage assembly, bridge transition, bridge connection, multiple mailbox post, and single post will be measured by each unit of the kind specified and installed.

Widened shoulder will be measured as a unit of grading within the limits shown on the plans.

Excavation in solid rock for placement of posts will be paid under force account unless otherwise indicated in the Bid Documents.

606.09 Basis of Payment The accepted quantities of guardrail will be paid for at the contract unit price per linear foot for the type specified, complete in place. Reflectorized beam guardrail ("butterfly"-type) delineators will not be paid for directly but will be considered incidental to guardrail items. Reflectorized flexible guardrail marker, terminal end, anchorage assembly, bridge transition, bridge connection, multiple mailbox post, and single post will be paid for at the contract unit price each for the kind specified complete in place.

Guardrail terminals will be paid for at the contract price each, complete in place which price shall be full payment for furnishing and installing all components including the terminal section, posts, offset blocks, "w" beam, cable foundation posts, plates and for all incidentals necessary to complete the installation within the limits as shown on the Standard Details or the Manufacturer's installation instructions. Pay limits for a flared terminal will be 37.5 feet. Pay limits for a tangent terminal will be 50 feet. Each guardrail terminal will be clearly marked with the Manufacturer's name and model number to facilitate any future needed repair. Such payment shall also be full compensation for furnishing all material, excavating, backfilling holes, assembling, and all incidentals necessary to complete the work, except that for excavation for posts or anchorages in solid ledge rock, payment will be made under 109.7.5 – Force Account. Type III Retroreflective Adhesive Sheeting shall be applied to the approach buffer end sections and sized to substantially cover the end section. On all roadways, the ends shall be marked with alternating black and retroreflective yellow stripes. The stripes shall be 3 in wide and sloped down at an angle of 45 degrees toward the side on which traffic is to pass the end section. Guardrail terminals shall also include a set of installation drawings supplied to the Resident.

Anchorage to bridge end posts will be part of the bridge work. Connections thereto will be considered included in the unit bid price for guardrail.

Guardrail to be placed on a radius of curvature of 150 ft or less will be paid for under the designated radius pay item for the type guardrail being placed.

Widened shoulder will be paid for at the contract unit price each complete in place and will be full compensation for furnishing and placing, grading and compaction of aggregate subbase and any required fill material.

Adjust guardrail will be paid for at the contract unit price per linear foot and will be full compensation for adjusting to grade. Payment shall also include adjusting guardrail terminals where required.

Modify guardrail will be paid for at the contract unit price per linear foot and will be full compensation for furnishing and installing offset blocks, additional posts, and other specified modifications; removing, modifying, installing, and adjusting to grade existing posts and beams;

removing plate washers and backup plates, and all incidentals necessary to complete the work. Payment shall also include removing and resetting guardrail terminals where required.

Remove and Reset guardrail will be paid for at the contract unit price per linear foot and will be full compensation for removing, transporting, storing, reassembling all parts, necessary cutting, furnishing new parts when necessary, reinstalling at the new location, and all other incidentals necessary to complete the work. Payment shall also include removing and resetting guardrail terminals when required.

Remove, Modify, and Reset guardrail will be paid for at the contract unit price per foot and will be full compensation for the requirements listed in Modify guardrail and Remove and Reset guardrail.

Bridge Connections will be paid for at the contract unit price each. Payment shall include, attaching the connection to the endpost including furnishing and placing concrete and reinforcing steel necessary to construct new endposts if required, furnishing and installing the terminal connector, and all miscellaneous hardware, labor, equipment, and incidentals necessary to complete the work.

Bridge Transitions will be paid for at the contract unit price each. Payment shall include furnishing and installing the thrie beam or "w"-beam terminal connector, doubled beam section, and transition section, where called for, posts, hardware, precast concrete transition curb, and any other necessary materials and labor, including the bridge connection as stated in the previous paragraph.

No payment will be made for guardrail removed, but not reset and all costs for such removal shall be considered incidental to the various contract pay items.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
606.1301 31" W-Beam Guardrail - Mid-Way Splice – Single Faced	Linear Foot
606.1302 31" W-Beam Guardrail - Mid-Way Splice – Double Faced	Linear Foot
606.1303 31" W-Beam Guardrail - Mid-Way Splice, 15' Radius and Less	Linear Foot
606.1304 31" W-Beam Guardrail - Mid-Way Splice, Over 15' Radius	Linear Foot
606.1305 31" W-Beam Guardrail - Mid-Way Splice Flared Terminal	Each
606.1306 31" W-Beam Guardrail - Mid-Way Splice Tangent Terminal	Each
606.1307 Bridge Transition (Asymmetrical) – Type IA	Each
606.1721 Bridge Transition - Type I	Each
606.1722 Bridge Transition - Type II	Each
606.1731 Bridge Connection - Type I	Each
606.1732 Bridge Connection - Type II	Each
606.178 Guardrail Beam	Linear Foot
606.25 Terminal Connector	Each
606.257 Terminal Connector - Thrie Beam	Each
606.259 Anchorage Assembly	Each
606.265 Terminal End-Single Rail - Galvanized Steel	Each
606.266 Terminal End-Single Rail - Corrosion Resistant Steel	Each

606.275	Terminal End-Double Rail - Galvanized Steel	Each
606.276	Terminal End-Double Rail - Corrosion Resistant Steel	Each
606.353	Reflectorized Flexible Guardrail Marker	Each
606.354	Remove and Reset Reflectorized Flexible Guardrail Marker	Each
606.356	Underdrain Delineator Post	Each
606.358	Guardrail, Modify	Linear Foot
606.362	Guardrail, Adjust	Linear Foot
606.365	Guardrail, Remove, Modify, and Reset	Linear Foot
606.366	Guardrail, Remove and Reset	Linear Foot
606.367	Replace Unusable Existing Guardrail Posts	Each
606.47	Single Wood Post	Each
606.48	Single Galvanized Steel Post	Each
606.50	Single Steel Pipe Post	Each
606.51	Multiple Mailbox Support	Each
606.568	Guardrail, Modify - Double Rail	Linear Foot
606.63	Thrie Beam Rail Beam	Linear Foot
606.64	Guardrail Thrie Beam - Double Rail	Linear Foot
606.65	Guardrail Thrie Beam - Single Rail	Linear Foot
606.66	Terminal End Thrie Beam	Each
606.70	Transition Section - Thrie Beam	Each
606.71	Guardrail Thrie Beam - 15 ft radius and less	Linear Foot
606.72	Guardrail Thrie Beam - over 15 ft radius	Linear Foot
606.73	Guardrail Thrie Beam - Single Rail Bridge Mounted	Linear Foot
606.74	Guardrail - Single Rail Bridge Mounted	Linear Foot
606.753	Widen Shoulder for Low Volume Guardrail End	Each
606.754	Widen Shoulder for Flared Guardrail Terminal	Each
606.78	Low Volume Guardrail End	Each
606.80	Buried-in-Slope Guardrail End	Each

SECTION 618 SEEDING

618.08 Mulching Revise this Section so that the third sentence reads: “Mulch for Seeding Method Number 1 shall only be cellulous fiber mulch Section 619.04 **(b)** or straw mulch Section 619.04 **(a)**.”

SECTION 626 FOUNDATIONS, CONDUIT, AND JUNCTION BOXES FOR HIGHWAY SIGNING, LIGHTING, AND SIGNALS

626.034 Concrete Foundations Revise this Section by changing ‘626.037’ to ‘**626.036**’ in the Second Paragraph which begins with “Foundations shall consist of cast-in-place...”.

Revise the 10th paragraph beginning with “Before placing concrete, the required elbows...” by removing “...**in accordance with Standard Specification 633.**”

SECTION 645 HIGHWAY SIGNING

Section 645.023 Sign Support Structures. Under letter “c.”, revise the fifth paragraph beginning with “In addition to the required details...” by removing the words “**and foundation**” from the 5th sentence.

Section 645.08 Method of Measurement. Revise the second paragraph beginning with “Bridge-type, cantilever and...” by removing the words “**including the foundation**” .

Section 645.09 Basis of Payment. Revise the third paragraph beginning with “The accepted bridge-type, cantilever and...” by removing the word “**foundation**” from the second sentence. Add the following sentence to the end of the paragraph “**Conduits, Junction Boxes, and Foundations will be paid for under Section 626.**”

SECTION 681 PRECAST AGGREGATE-FILLED, CONCRETE BLOCK GRAVITY WALL

681.08 Basis of Payment Amend this section by adding the Item Number “**681.10**” in front of the item “Precast Aggregate-Filled Concrete Block Gravity Wall” at the end of the section.

SECTION 703 AGGREGATES

Add the following to the beginning of Section 703 - Aggregates

703.01 Fine Aggregate for Concrete Fine aggregate for concrete shall consist of natural sand or, when approved by the Resident, other inert materials with similar characteristics or combinations thereof, having strong, durable particles. Fine aggregate from different sources of supply shall not be mixed or stored in the same pile nor used alternately in the same class of construction or mix without permission of the Resident.

All fine aggregate shall be free from injurious amounts of organic impurities. Should the fine aggregate, when subjected to the colorimetric test for organic impurities, AASHTO T 21, produce a

color darker than the reference standard color solution (laboratory designation Plate III), the fine aggregate shall be rejected.

Fine aggregate shall have a sand equivalent value of not less than 75 when tested in accordance with AASHTO T 176.

Fine aggregate sources shall meet the Alkali Silica Reactivity (ASR) requirements of Section 703.0201.

The fineness modulus shall not be less than 2.26 or more than 3.14. If this value is exceeded, the fine aggregate will be rejected unless suitable adjustments are made in proportions of coarse and fine aggregate. The fineness modulus of fine aggregate shall be determined by adding the cumulative percentages of material by weight retained on the following sieves: Nos. 4, 8, 16, 30, 50, 100 and dividing by 100.

Fine aggregate, from an individual source when tested for absorption as specified in AASHTO T 84, shall show an absorption of not more than 2.3 percent.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
$\frac{3}{8}$ inch	100
No. 4	95-100
No. 8	80-100
No. 16	50-85
No. 30	25-60
No. 50	10-30
No. 100	2-10
No. 200	0-5.0

703.02 Coarse Aggregate for Concrete Coarse aggregate for concrete shall consist of crushed stone or gravel having hard, strong, durable pieces, free from adherent coatings and of which the composite blend retained on the $\frac{3}{8}$ inch sieve shall contain no more than 15 percent, by weight of flat and elongated particles when performed in accordance with test method ASTM D 4791, Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate, using a dimensional ratio of 1:5.

The coarse aggregate from an individual source shall have an absorption no greater than 2.0 percent by weight determined in accordance with AASHTO T 85 modified for weight of sample.

The composite blend shall have a Micro-Deval value of 18.0 percent or less as determined by AASHTO T 327 or not exceed 40 percent loss as determined by AASHTO T 96.

Coarse aggregate sources shall meet the Alkali Silica Reactivity (ASR) requirements of Section 703.0201.

Coarse aggregate shall conform to the requirements of the following table for the size or sizes designated and shall be well graded between the limits specified.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves			
Grading	A	AA	S	LATEX
Aggregate Size	1 inch	$\frac{3}{4}$ inch	$1\frac{1}{2}$ inch	$\frac{1}{2}$ inch
2 inch			100	
$1\frac{1}{2}$ inch	100		95-100	
1 inch	95-100	100	-	
$\frac{3}{4}$ inch	-	90-100	35-70	100
$\frac{1}{2}$ inch	25-60	-	-	90-100
$\frac{3}{8}$ inch	-	20-55	10-30	40-70
No. 4	0-10	0-10	0-5	0-15
No. 8	0-5	0-5	-	0-5
No. 16	-	-	-	-
No. 50	-	-	-	-
No. 200	0 - 1.5	0 - 1.5	0 - 1.5	0 - 1.5

703.0201 Alkali Silica Reactive Aggregates. All coarse and fine aggregates proposed for use in concrete shall be tested for Alkali Silica Reactivity (ASR) potential under AASHTO T 303 (ASTM C 1260), Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction, prior to being accepted for use. Acceptance will be based on testing performed by the Department. Sampling will be performed by the Department from stockpiles located at the Contractor's/supplier's ready mixed concrete plants. Aggregate approvals will be performed on a 3-year cycle, unless the source or character of the aggregate in question has changed within 3 years from the last test date.

A list of pre-approved coarse aggregate and aggregate-cement/pozzolan blends is maintained by the Department and will determine the acceptability of concrete mix designs proposed for use.

As per AASHTO T 303 (ASTM C 1260): Use of a particular coarse or fine aggregate will be allowed with no restrictions when the mortar bars made with this aggregate expand less than or equal to 0.10 percent at 30 days from casting. Use of a particular coarse or fine aggregate will be classified as potentially reactive when the mortar bars made with this aggregate expand greater than 0.10 percent at 30 days from casting. Use of this aggregate will only be allowed with the use of cement-pozzolan blends and/or chemical admixtures that result in mortar bar expansion of less than 0.10 percent at 30 days from casting.

Acceptable pozzolans and chemical admixtures that may be used when an aggregate is classified as potentially reactive include the following:

- a. Class F Coal Fly Ash meeting the requirements of AASHTO M 295.
- b. Ground Granulated Blast Furnace Slag (Grade 100 or 120) meeting the requirements of AASHTO M 302.
- c. Densified Silica Fume meeting the requirements of AASHTO M 307.
- d. Lithium Hydroxide Monohydrate (LiOH-H₂O).

Pozzolans or chemical admixtures required to offset the effects of potentially reactive aggregates will be incorporated into the concrete at no additional cost to the Department.

Aggregates classified as potentially reactive by the requirements of this specification may be used if certified test results from an accredited independent laboratory utilizing the current AASHTO T 303 (ASTM C 1260) Accelerated Detection of Potentially Deleterious Expansion of Mortar Bars Due to Alkali-Silica Reaction, indicating an acceptable alkali-aggregate combination, are submitted to the Department.

703.05 Aggregate for Sand Leveling Aggregate for sand leveling shall be sand of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The aggregate shall meet the grading requirements of the following table.

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
$\frac{3}{8}$ inch	85-100
No. 200	0-5.0

703.06 Aggregate for Base and Subbase The following shall apply to Sections (a.) and (c.) below. The material shall have a Micro-Deval..." and replace with "The material shall have a minimum degradation value of 25.0 or less as determined by AASHTO T 327. If the Micro-Deval value exceeds 25.0, the Washington State Degradation DOT Test Method T 113T113, Method of Test for Determination of Degradation Value (January 2009 version) shall be performed), except that the test shall be performed on the reported degradation value will be the result of testing a single specimen from that portion of the sample that passes the $\frac{1}{2}$ in sieve and is retained on the No. 10 sieve. If the material has a Washington Degradation value of less than 15, the material shall be rejected.

The material, minus any reclaimed asphalt pavement used in Section (b.) below shall have a Micro-Deval value of 25.0 or less as determined by AASHTO T 327. If the Micro-Deval value exceeds 25.0 the material may be used if it does not exceed 25 percent loss on AASHTO T 96, Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine. If AASHTO T 96 is used for acceptance of the material, the material shall be retested at intervals of 25%, 50% and 75% completion of the course.

Recycled Asphalt Pavement (RAP) shall not be used for or blended with aggregate base or subbase.

- a. Aggregate for base, Type A and B shall be crushed ledge or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3 inch sieve shall meet the grading requirements of the following table:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Type A	Type B
½ inch	45-70	35-75
¼ inch	30-55	25-60
No. 40	0-20	0-25
No. 200	0-6.0	0-6.0

At least 50 percent by weight of the material retained on the No. 4 sieve shall have at least one fractured face as tested by AASHTO T 335.

Type A aggregate for base shall only contain particles of rock that will pass the 2 inch square mesh sieve.

Type B aggregate for base shall only contain particles of rock that will pass the 4 inch square mesh sieve.

- b. Aggregate for base, Type C shall be crushed ledge or crushed gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The material shall meet the grading requirements of the following table:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves
	Type C
4 inches	100
3 inches	90-100
2 inches	75-100
1 inch	50-80
½ inch	30-60
No. 4	15-40
No. 200	0-6.0

At least 50 percent by weight of the material coarser than the No. 4 sieve shall have at least one fractured face as tested by AASHTO T 335.

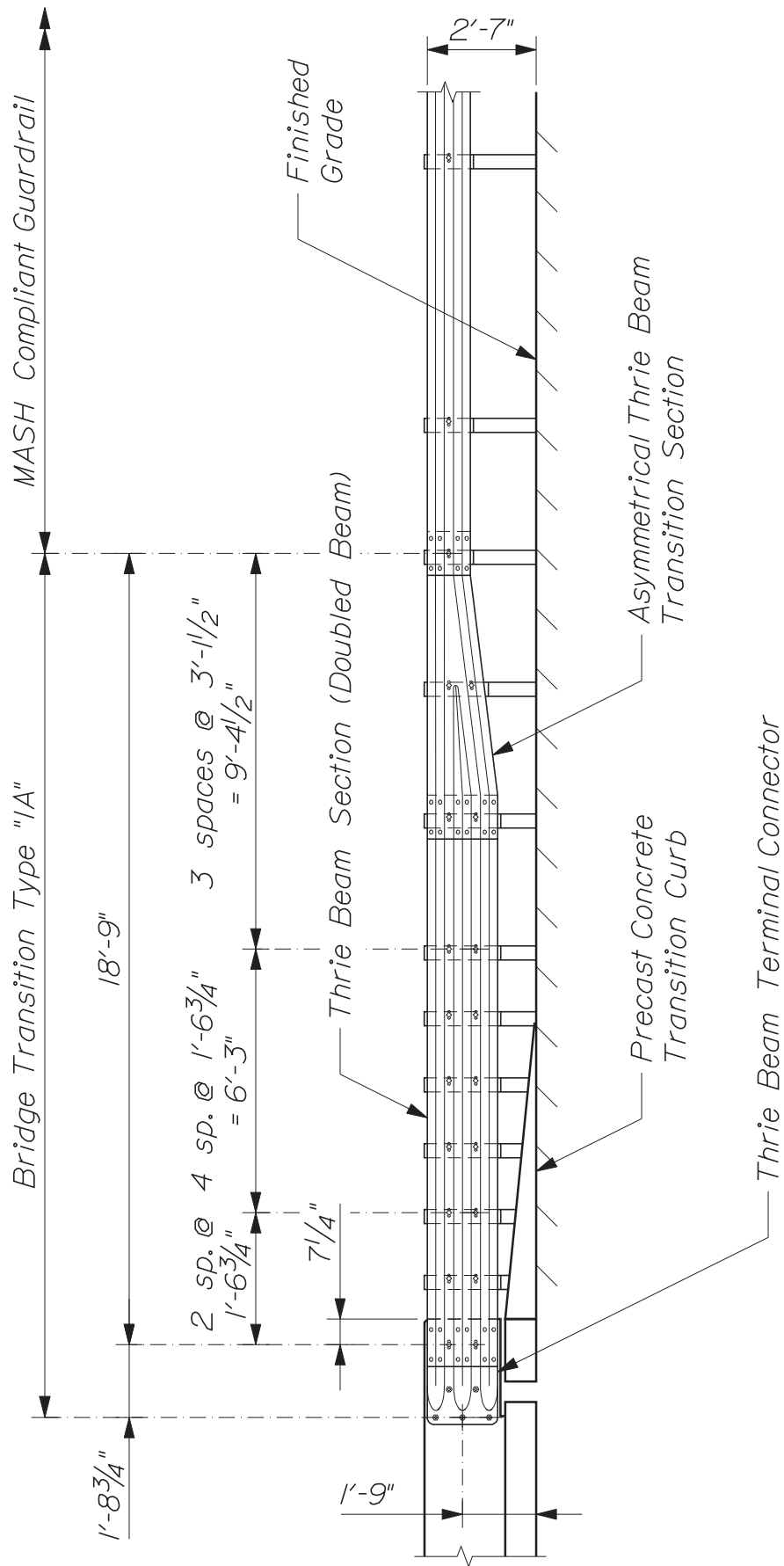
- c. Aggregate for subbase shall be sand or gravel of hard durable particles free from vegetable matter, lumps or balls of clay and other deleterious substances. The gradation of the part that passes a 3 inch sieve shall meet the grading requirements of the following table:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Type D	Type E
½ in	35-80	
¼ inch	25-65	25-100
No. 40	0-30	0-50
No. 200	0-7.0	0-7.0

Type D aggregate for subbase gravel may contain up to 50 percent by weight Recycled Concrete Aggregate (RCA). When RCA is used, the portion of the resulting blend of gravel and RCA retained on a ½” square mesh sieve shall contain a total of no more than 5 percent by weight of other recycled materials such as brick, concrete masonry block, or asphalt pavement as determined by visual inspection.

RCA shall be substantially free of wood, metal, plaster, and gypsum board as defined in Note 9 in Section 7.4 of AASHTO M 319. RCA shall also be free of all substances that fall under the category of solid waste or hazardous materials.

Aggregate for subbase shall not contain particles of rock which will not pass the 6 inch square mesh sieve.



~ BRIDGE TRANSITION TYPE "IA" ~

NOTE: Part designations are shown in "A Guide to Standardized Highway Barrier Hardware" as prepared and approved by the AASHTO - AGC - ARTBA Joint Committee, Task Force 13 Report.

APPENDIX A TO DIVISION 100

SECTION 1 - BIDDING PROVISIONS

A. Federally Required Certifications By signing and delivering a Bid, the Bidder certifies as provided in all certifications set forth in this Appendix A - Federal Contract Provisions Supplement including:

- Certification Regarding No Kickbacks to Procure Contract as provided on this page 1 below.
- Certification Regarding Non-collusion as provided on page 1 below.
- Certification Regarding Non-segregated Facilities as provided by FHWA Form 1273, section III set forth on page 21 below.
- "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion" as provided by FHWA Form 1273, section XI set forth on page 32 below.
- "Certification Regarding Use of Contract Funds for Lobbying" as provided by FHWA Form 1273, section XII set forth on page 35 below.

Unless otherwise provided below, the term "Bidder", for the purposes of these certifications, includes the Bidder, its principals, and the person(s) signing the Bid. Upon execution of the Contract, the Bidder (then called the Contractor) will again make all the certifications indicated in this paragraph above.

CERTIFICATION REGARDING NO KICKBACKS TO PROCURE CONTRACT Except expressly stated by the Bidder on sheets submitted with the Bid (if any), the Bidder hereby certifies, to the best of its knowledge and belief, that it has not:

(A) employed or retained for a commission, percentage, brokerage, contingent fee, or other consideration, any firm or person (other than a bona fide employee working solely for me) to solicit or secure this contract;

(B) agreed, as an express or implied condition for obtaining this contract, to employ or retain the services of any firm or person in connection with carrying out the contract, or;

(C) paid, or agreed to pay, to any firm, organization, or person (other than a bona fide employee working solely for me) any fee, contribution, donation, or consideration of any kind for, or in connection with, procuring or carrying out the contract;

By signing and submitting a Bid, the Bidder acknowledges that this certification is to be furnished to the Maine Department of Transportation and the Federal Highway Administration, U.S. Department of Transportation in connection with this contract in anticipation of federal aid highway funds and is subject to applicable state and federal laws, both criminal and civil.

CERTIFICATION REGARDING NONCOLLUSION Under penalty of perjury as provided by federal law (28 U.S.C. §1746), the Bidder hereby certifies, to the best of its knowledge and belief, that:

the Bidder has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of competitive bidding in connection with the Contract.

For a related provisions, see Section 102.7.2 (C) of the Standard Specifications - "Effects of Signing and Delivery of Bids" - "Certifications", Section 3 of this Appendix A entitled "Other Federal Requirements" including section XI - "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion" and section XII. - "Certification Regarding Use of Contract Funds for Lobbying."

B. Bid Rigging Hotline To report bid rigging activities call: **1-800-424-9071**

The U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., eastern time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

SECTION 2 - FEDERAL EEO AND CIVIL RIGHTS REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 2 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Nondiscrimination & Civil Rights - Title VI The Contractor and its subcontractors shall not discriminate on the basis of race, color, national origin, or sex in the performance of this Contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the Department deems appropriate. The Contractor and subcontractors shall comply with Title VI of the Civil Rights Act of 1964, as amended, and with all State of Maine and other Federal Civil Rights laws.

For related provisions, see Subsection B - "Nondiscrimination and Affirmative Action - Executive Order 11246" of this Section 2 and Section 3 - Other Federal Requirements of this "Federal Contract Provisions Supplement" including section II - "Nondiscrimination" of the "Required Contract Provisions, Federal Aid Construction Contracts", FHWA-1273.

B. Nondiscrimination and Affirmative Action - Executive Order 11246 Pursuant to Executive Order 11246, which was issued by President Johnson in 1965 and amended in 1967 and 1978, this Contract provides as follows.

The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its efforts to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

Ensure and maintain a working environment free of harassment, intimidations, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all forepersons, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its union have employment opportunities available, and to maintain a record of the organization's responses.

Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

Provide immediate written notification to the Department's Civil Rights Office when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Design-Builder's efforts to meet its obligations.

Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under B above.

Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligation; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Forepersons, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractor's and Subcontractors with whom the Contractor does or anticipates doing business.

Direct its recruitment efforts, both orally and written to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above describing the openings, screenings, procedures, and test to be used in the selection process.

Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth, both on the site and in other areas of a Contractor's workforce.

Validate all tests and other selection requirements.

Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction Contractor's and suppliers, including circulation of solicitations to minority and female Contractor associations and other business associations.

Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

C. Goals for Employment of Women and Minorities Per Executive Order 11246, craft tradesperson goals are 6.9% women and .5% minorities employed. However, goals may be adjusted upward at the mutual agreement of the Contractor and the Department. Calculation of these percentages shall not include On-the-Job Training Program trainees, and shall not include clerical or field clerk position employees.

For a more complete presentation of requirements for such Goals, see the federally required document "Goals for Employment of Females and Minorities" set forth in the next 6 pages below.

Start of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

§60-4.2 Solicitations

- (d) The following notice shall be included in, and shall be part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000 to be performed in geographical areas designated by the Director pursuant to §60-4.6 of this part (see 41 CFR 60-4.2(a)):

Notice of Requirement for Affirmative Action to Ensure Equal Opportunity (Executive Order 11246)

1. The Offeror's or bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

<u>Goals for female participation in each trade</u>	6.9%

Goals for minority participation for each trade

Maine

001 Bangor, ME	0.8%

Non-SMSA Counties (Aroostook, Hancock, Penobscot, Piscataquis, Waldo, Washington)

002 Portland-Lewiston, ME

SMSA Counties: 4243 Lewiston-Auburn, ME (Androscoggin)	0.5%

6403 Portland, ME (Cumberland, Sagadahoc)	0.6%

Non-SMSA Counties:
(Franklin, Kennebec, Knox, Lincoln, Oxford, Somerset, York)

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.

The contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be in violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor, employer identification number of the subcontractor, estimated dollar amount of the subcontract; estimated started and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the Contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any).

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)

1. As used in these specifications:
 - a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;
 - b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;
 - c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department form 941;
 - d. "Minority" includes:

- (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of the North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
2. Whenever the Contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.
3. If the contractor, is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors for Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a. through p. of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical areas where the work is being performed. Goals are published periodically in the Federal Register in notice form and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specific.
5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant, thereto.

6. In order for the non working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as expensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation, coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, when possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organization's responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment sources or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources complied under 7b above.

- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
- i. Direct its recruitment, efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing prior to the date for the acceptance of applications for apprenticeship or the openings, screening procedures, and tests to be used in the selection process.
- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on site and in other areas of a Contractor's work force.
- k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
- l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
- m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

- n. Ensure that all facilities and company activities are non segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitation to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7 a through p.). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7 a through p. of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program and reflected in the Contractor's minority and female work force participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions take on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, specific minority group of women is underutilized.)
10. The Contractor shall not use the goals and timetables or affirmative action even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if standards to discriminate against any person because of race, color, religion, sex, or national origin.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementation regulations by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.6.
14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g. mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and location at which the work was performed. Records be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

End of GOALS FOR EMPLOYMENT OF FEMALES AND MINORITIES
Federally Required Contract Document

D. Section '**D Disadvantaged Business Enterprise (DBE) Requirements**' is removed in its entirety. The DBE material is in:

Section 105.10 EQUAL OPPORTUNITY AND CIVIL RIGHTS.

SECTION 3 - OTHER FEDERAL REQUIREMENTS

Unless expressly otherwise provided in the Bid Documents, the provisions contained in this Section 3 of this "Federal Contract Provisions Supplement" are hereby incorporated into the Bid Documents and Contract.

A. Buy America

If the cost of products purchased for permanent use in this project which are manufactured of steel, iron or the application of any coating to products of these materials exceeds 0.1 percent of the contract amount, or \$2,500.00, whichever is greater, the products shall have been manufactured and the coating applied in the United States. The coating materials are not subject to this clause, only the application of the coating. In computing that amount, only the cost of the product and coating application cost will be included.

Ore, for the manufacture of steel or iron, may be from outside the United States; however, all other manufacturing processes of steel or iron must be in the United States to qualify as having been manufactured in the United States.

United States includes the 50 United States and any place subject to the jurisdiction thereof.

Products of steel include, but are not limited to, such products as structural steel, piles, guardrail, steel culverts, reinforcing steel, structural plate and steel supports for signs, luminaries and signals.

Products of iron include, but are not limited to, such products as cast iron grates.

Application of coatings include, but are not limited to, such applications as epoxy, galvanized and paint.

To assure compliance with this section, the Contractor shall submit a certification letter on its letterhead to the Department stating the following:

“This is to certify that products made of steel, iron or the application of any coating to products of these materials whose costs are in excess of \$2,500.00 or 0.1 percent of the original contract amount, whichever is greater, were manufactured and the coating, if one was required, was applied in the United States.”

B. Materials

a. Convict Produced Materials References: 23 U.S.C. 114(b)(2), 23 CFR 635.417

Applicability: FHWA's prohibition against the use of convict material only applies to Federal-aid highways. Materials produced after July 1, 1991, by convict labor may only be incorporated in a Federal-aid highway construction project if: 1) such materials have been produced by convicts who are on parole, supervised release, or probation from a prison; or 2) such material has been produced in a qualified prison facility, e.g., prison industry, with the amount produced during any 12-month period, for use in Federal-aid projects, not exceeding the amount produced, for such use, during the 12-month period ending July 1, 1987.

Materials obtained from prison facilities (e.g., prison industries) are subject to the same requirements for Federal-aid participation that are imposed upon materials acquired from other sources. Materials manufactured or produced by convict labor will be given no preferential treatment.

The preferred method of obtaining materials for a project is through normal contracting procedures which require the contractor to furnish all materials to be incorporated in the work. The contractor selects the source, public or private, from which the materials are to be obtained (23 CFR 635.407). Prison industries are prohibited from bidding on projects directly (23 CFR 635.112e), but may act as material supplier to construction contractors.

Prison materials may also be approved as State-furnished material. However, since public agencies may not bid in competition with private firms, direct acquisition of materials from a

prison industry for use as State-furnished material is subject to a public interest finding with the Division Administrator's concurrence (23 CFR 635.407d). Selection of materials produced by convict labor as State-furnished materials for mandatory use should be cleared prior to the submittal of the Plans Specifications & Estimates (PS&E).

b. Patented/Proprietary Products References: 23 U.S.C. 112, 23 CFR 635.411

FHWA will not participate, directly or indirectly, in payment for any premium or royalty on any patented or proprietary material, specification, or process specifically set forth in the plans and specifications for a project, unless:

- the item is purchased or obtained through competitive bidding with equally suitable unpatented items,
- the STA certifies either that the proprietary or patented item is essential for synchronization with the existing highway facilities or that no equally suitable alternative exists, or
- the item is used for research or for a special type of construction on relatively short sections of road for experimental purposes. States should follow FHWA's procedures for "Construction Projects Incorporating Experimental Features" (expmmt.htm) for the submittal of work plans and evaluations.

The primary purpose of the policy is to have competition in selection of materials and allow for development of new materials and products. The policy further permits materials and products that are judged equal may be bid under generic specifications. If only patented or proprietary products are acceptable, they shall be bid as alternatives with all, or at least a reasonable number of, acceptable materials or products listed; and the Division Administrator may approve a single source if it can be found that its utilization is in the public interest.

Trade names are generally the key to identifying patented or proprietary materials. Trade name examples include 3M, Corten, etc. Generally, products identified by their brand or trade name are not to be specified without an "or equal" phrase, and, if trade names are used, all, or at least a reasonable number of acceptable "equal" materials or products should be listed. The licensing of several suppliers to produce a product does not change the fact that it is a single product and should not be specified to the exclusion of other equally suitable products.

c. State Preference References: 23 U.S.C. 112, 23 CFR 635.409

Materials produced within Maine shall not be favored to the exclusion of comparable materials produced outside of Maine. State preference clauses give particular advantage to the designated source and thus restrict competition. Therefore, State preference provisions shall not be used on any Federal-aid construction projects.

This policy also applies to State preference actions against materials of foreign origin, except as otherwise permitted by Federal law. Thus, States cannot give preference to in-State material sources over foreign material sources. Under the Buy America provisions, the States are

permitted to expand the Buy America restrictions provided that the STA is legally authorized under State law to impose more stringent requirements.

d. State Owned/Furnished/Designated Materials References: 23 U.S.C. 112, 23 CFR 635.407

Current FHWA policy requires that the contractor must furnish all materials to be incorporated in the work, and the contractor shall be permitted to select the sources from which the materials are to be obtained. Exceptions to this requirement may be made when there is a definite finding, by MaineDOT and concurred in by Federal Highway Administration's (FHWA) Division Administrator, that it is in the public interest to require the contractor to use materials furnished by the MaineDOT or from sources designated by MaineDOT. The exception policy can best be understood by separating State-furnished materials into the categories of manufactured materials and local natural materials.

Manufactured Materials When the use of State-furnished manufactured materials is approved based on a public interest finding, such use must be made mandatory. The optional use of State-furnished manufactured materials is in violation of our policy prohibiting public agencies from competing with private firms. Manufactured materials to be furnished by MaineDOT must be acquired through competitive bidding, unless there is a public interest finding for another method, and concurred in by FHWA's Division Administrator.

Local Natural Materials When MaineDOT owns or controls a local natural materials source such as a borrow pit or a stockpile of salvaged pavement material, etc., the materials may be designated for either optional or mandatory use; however, mandatory use will require a public interest finding (PIF) and FHWA's Division Administrator's concurrence.

In order to permit prospective bidders to properly prepare their bids, the location, cost, and any conditions to be met for obtaining materials that are made available to the contractor shall be stated in the bidding documents.

Mandatory Disposal Sites Normally, the disposal site for surplus excavated materials is to be of the contractor's choosing; although, an optional site(s) may be shown in the contract provisions. A mandatory site shall be specified when there is a finding by MaineDOT, with the concurrence of the Division Administrator, that such placement is the most economical or that the environment would be substantially enhanced without excessive cost. Discussion of the mandatory use of a disposal site in the environmental document may serve as the basis for the public interest finding.

Summarizing FHWA policy for the mandatory use of borrow or disposal sites:

- mandatory use of either requires a public interest finding and FHWA's Division Administrator's concurrence,
- mandatory use of either may be based on environmental consideration where the environment will be substantially enhanced without excessive additional cost, and
- where the use is based on environmental considerations, the discussion in the environmental document may be used as the basis for the public interest finding.

Factors to justify a public interest finding should include such items as cost effectiveness, system integrity, and local shortages of material.

C. Standard FHWA Contract Provisions - FHWA 1273

Unless expressly otherwise provided in the Bid Documents, the following “Required Contract Provisions, Federal Aid Construction Contracts”, FHWA-1273, are hereby incorporated into the Bid Documents and Contract.

Cargo Preference Act : Contractor and Subcontractor Clauses. “Use of United States-flag vessels: The contractor agrees—“(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.”(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, ‘on-board’ commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.”(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.”(Reorganization Plans No. 21 of 1950 (64 Stat. 1273) and No. 7 of 1961 (75 Stat. 840) as amended by Pub. L. 91-469 (84 Stat. 1036) and Department of Commerce Organization Order 10-8 (38 FR 19707, July 23, 1973)) [42 FR 57126, Nov. 1, 1977]

The Cargo Preference Act requirements apply to materials or equipment that are acquired for a specific Federal-aid highway project. In general, the requirements are not applicable to goods or materials that come into inventories independent of an FHWA funded-contract. For example, the requirements would not apply to shipments of Portland cement, asphalt cement, or aggregates, as industry suppliers and contractors use these materials to replenish existing inventories. In general, most of the materials used for highway construction originate from existing inventories and are not acquired solely for a specific Federal-aid project. However, if materials or equipment are acquired solely for a Federal-aid project, then the Cargo Preference Act requirements apply.”

Start of FHWA 1273 REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS (As revised through May 1, 2012)

FHWA-1273 -- Revised May 1, 2012

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

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

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

I. GENERAL

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

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

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

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

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment,

termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

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

II. NONDISCRIMINATION

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.
- b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
- c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

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

The following procedures shall be followed:

- a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
- b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
- c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
- d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

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

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

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

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

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women.

Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

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

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

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

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

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

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

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

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

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

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

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

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

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

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

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

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

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

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

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

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

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

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

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

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (ii) The classification is utilized in the area by the construction industry; and
- (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

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

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

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

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act),

daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

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

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

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the “Statement of Compliance” required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a

different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

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

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

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

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

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

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

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

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

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

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

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

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

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

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

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

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

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

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

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

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

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

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

VII. SAFETY: ACCIDENT PREVENTION

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

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

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

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

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

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

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

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

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

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

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

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

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

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

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

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

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

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

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

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

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

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

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

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

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

* * * * *

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

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

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

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

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

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

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

2. Instructions for Certification - Lower Tier Participants:

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

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

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

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

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

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

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

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

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

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

* * * * *

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

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

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

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

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

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

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

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

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

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

**ATTACHMENT A - EMPLOYMENT AND MATERIALS PREFERENCE FOR
APPALACHIAN DEVELOPMENT HIGHWAY SYSTEM OR APPALACHIAN LOCAL
ACCESS ROAD CONTRACTS**

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

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

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

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

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

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

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

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

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

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

End of FHWA 1273

The United States Department of Transportation (USDOT) Standard Title VI/Non-Discrimination
Assurances

DOT Order No. 1050.2A

The **Maine Department of Transportation** (herein referred to as the "Recipient"), **HEREBY AGREES THAT**, as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation (DOT), through the **Federal Highway Administration (FHWA)**, is subject to and will comply with the following:

Statutory/Regulatory Authorities

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin);
- 49 C.F.R. Part 21 (entitled Non-discrimination In Federally-Assisted Programs Of The Department Of Transportation-Effectuation Of Title VI Of The Civil Rights Act Of 1964);
- 28 C.F.R. Section 50.3 (U.S. Department of Justice Guidelines for Enforcement of Title VI of the Civil Rights Act of 1964);

The preceding statutory and regulatory cites hereinafter are referred to as the "Acts" and "Regulations," respectively.

General Assurances

In accordance with the Acts, the Regulations, and other pertinent directives, circulars, policy, memoranda, and/or guidance, the Recipient hereby gives assurance that it will promptly take any measures necessary to ensure that:

*"No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity, "for which the Recipient receives Federal financial assistance from DOT, including the **FHWA**.*

The Civil Rights Restoration Act of 1987 clarified the original intent of Congress, with respect to Title VI and other Non-discrimination requirements (The Age Discrimination Act of 1975, and Section 504 of the Rehabilitation Act of 1973), by restoring the broad, institutional-wide scope and coverage of these non-discrimination statutes and requirements to include all programs and activities of the Recipient, so long as any portion of the program is Federally assisted.

Specific Assurances

More specifically, and without limiting the above general Assurance, the Recipient agrees with and gives the following Assurances with respect to its Federally assisted **Highway Program**:

1. The Recipient agrees that each "activity," "facility," or "program," as defined in §§ 21.23(b) and 21.23(e) of 49 C.F.R. § 21 will be (with regard to an "activity") facilitated, or will be (with regard

to a "facility") operated, or will be (with regard to a "program") conducted in compliance with all requirements imposed by, or pursuant to the Acts and the Regulations.

2. The Recipient will insert the following notification in all solicitations for bids, Requests For Proposals for work, or material subject to the Acts and the Regulations made in connection with all ***Federal-Aid Highway Program activities*** and, in adapted form, in all proposals for negotiated agreements regardless of funding source:

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

3. The Recipient will insert the clauses of Appendix A and E of this Assurance in every contract or agreement subject to the Acts and the Regulations.
4. The Recipient will insert the clauses of Appendix B of this Assurance, as a covenant running with the land, in any deed from the United States effecting or recording a transfer of real property, structures, use, or improvements thereon or interest therein to a Recipient.
5. That where the Recipient receives Federal financial assistance to construct a facility, or part of a facility, the Assurance will extend to the entire facility and facilities operated in connection therewith.
6. That where the Recipient receives Federal financial assistance in the form, or for the acquisition of real property or an interest in real property, the Assurance will extend to rights to space on, over, or under such property.
7. That the Recipient will include the clauses set forth in Appendix C and Appendix D of this Assurance, as a covenant running with the land, in any future deeds, leases, licenses, permits, or similar instruments entered into by the Recipient with other parties:
 - a. for the subsequent transfer of real property acquired or improved under the applicable activity, project, or program; and
 - b. for the construction or use of, or access to, space on, over, or under real property acquired or improved under the applicable activity, project, or program.
8. That this Assurance obligates the Recipient for the period during which Federal financial assistance is extended to the program, except where the Federal financial assistance is to provide, or is in the form of, personal property, or real property, or interest therein, or structures or improvements thereon, in which case the Assurance obligates the Recipient, or any transferee for the longer of the following periods:

- a. the period during which the property is used for a purpose for which the Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits; or
 - b. the period during which the Recipient retains ownership or possession of the property.
9. The Recipient will provide for such methods of administration for the program as are found by the Secretary of Transportation or the official to whom he/she delegates specific authority to give reasonable guarantee that it, other recipients, sub-recipients, sub-grantees, contractors, subcontractors, consultants, transferees, successors in interest, and other participants of Federal financial assistance under such program will comply with all requirements imposed or pursuant to the Acts, the Regulations, and this Assurance.
10. The Recipient agrees that the United States has a right to seek judicial enforcement with regard to any matter arising under the Acts, the Regulations, and this Assurance.

By signing this ASSURANCE, the **Maine Department of Transportation** also agrees to comply (and require any sub-recipients, sub-grantees, contractors, successors, transferees, and/or assignees to comply) with all applicable provisions governing the **FHWA and USDOT** access to records, accounts, documents, information, facilities, and staff. You also recognize that you must comply with any program or compliance reviews, and/or complaint investigations conducted by the **FHWA and USDOT**. You must keep records, reports, and submit the material for review upon request to **FHWA and USDOT**, or its designee in a timely, complete, and accurate way. Additionally, you must comply with all other reporting, data collection, and evaluation requirements, as prescribed by law or detailed in program guidance.

The **Maine Department of Transportation** gives this ASSURANCE in consideration of and for obtaining any Federal grants, loans, contracts, agreements, property, and/or discounts, or other Federal-aid and Federal financial assistance extended after the date hereof to the recipients by the U.S. Department of Transportation under the **Federal Aid Highway Program**. This ASSURANCE is binding on [insert State], other recipients, sub-recipients, sub-grantees, contractors, subcontractors and their subcontractors', transferees, successors in interest, and any other participants in the **Federal Aid Highway Program**. The person(s) signing below is authorized to sign this ASSURANCE on behalf of the Recipient.

MAINE DEPARTMENT OF TRANSPORTATION
(Name of Recipient)

by 
Bruce A. Van Note, Commissioner

DATED 2/13/19

APPENDIX A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration (FHWA)**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the **FHWA** to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the **FHWA**, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the **FHWA** may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the **FHWA** may direct as a means of enforcing such provisions including sanctions for

noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

APPENDIX B

CLAUSES FOR DEEDS TRANSFERRING UNITED STATES PROPERTY

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4:

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the **Maine Department of Transportation** will accept title to the lands and maintain the project constructed thereon in accordance with **23 U.S. Code § 107**, the Regulations for the Administration of **the Federal Aid Highway Program**, and the policies and procedures prescribed by the **FHWA** of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the **Maine Department of Transportation** all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto **Maine Department of Transportation** and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the **Maine Department of Transportation**, its successors and assigns.

The **Maine Department of Transportation**, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* (2) that the **Maine Department of Transportation** will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended [, and (3) that in the event of breach of any of the above-mentioned non-discrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

APPENDIX C

CLAUSES FOR TRANSFER OF REAL PROPERTY ACQUIRED OR IMPROVED UNDER THE ACTIVITY, FACILITY, OR PROGRAM

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the **Maine Department of Transportation** pursuant to the provisions of Assurance 7(a):

- A. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:
 - 1. In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
- B. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Non-discrimination covenants, **Maine Department of Transportation** will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued.*
- C. With respect to a deed, in the event of breach of any of the above Non-discrimination covenants, the **Maine Department of Transportation** will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the **Maine Department of Transportation** and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX D

CLAUSES FOR CONSTRUCTION/USE/ACCESS TO REAL PROPERTY ACQUIRED UNDER THE ACTIVITY, FACILITY OR PROGRAM

The following clauses will be included in deeds, licenses, permits, or similar instruments/agreements entered into by the **Maine Department of Transportation** pursuant to the provisions of Assurance 7(b):

- A. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
- B. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non discrimination covenants, the **Maine Department of Transportation** will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued.*
- C. With respect to deeds, in the event of breach of any of the above Non-discrimination covenants, the **Maine Department of Transportation** will there upon revert to and vest in and become the absolute property of the **Maine Department of Transportation** and its assigns.*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

APPENDIX E

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

Pertinent Non-Discrimination Authorities:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq.).



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

MAINE GENERAL PERMIT (GP)
AUTHORIZATION LETTER AND SCREENING SUMMARY

ENVIRONMENTAL OFFICE
MAINE DEPARTMENT OF TRANSPORTATION
16 STATE HOUSE STATION
AUGUSTA, MAINE 04333

CORPS PERMIT # NAE-2020-00108
CORPS GP ID# 20-10
STATE ID# PBR

DESCRIPTION OF WORK:

Place temporary and permanent fill below the high tide line in Casco Bay and in adjacent tidal wetlands at Portland, Maine in order to replace the I-295 overpass of Veranda Street and by association, replace two existing stormwater outfalls along Route 1/88. This work will result in approximately 398 s.f. of permanent and 800 s.f. of temporary impact to intertidal substrate and 125 s.f. of tidal wetland impact from hydraulic scour. This work is shown on the attached plans entitled "INTERSTATE 295 OVER VERANDA STREET, PORTLAND, CUMBERLAND COUNTY" in four sheets dated "12/19". DOT WIN: 21745.00

LAT/LONG COORDINATES : 43.685699° N -70.252182° W USGS QUAD: PORTLAND WEST, ME

I. CORPS DETERMINATION:

Based on our review of the information you provided, we have determined that your project will have only minimal individual and cumulative impacts on waters and wetlands of the United States. Your work is therefore authorized by the U.S. Army Corps of Engineers under the Federal Permit, the Maine General Permit (GP). http://www.nae.usace.army.mil/Portals/74/docs/regulatory/StateGeneralPermits/ME/Maine_General_Permit_2015.pdf

You must perform the activity authorized herein in compliance with all the terms and conditions of the GP [including any attached Additional Conditions and any conditions placed on the State 401 Water Quality Certification including any required mitigation]. Please review the enclosed GP carefully, including the GP conditions beginning on page 5, to familiarize yourself with its contents. You are responsible for complying with all of the GP requirements; therefore you should be certain that whoever does the work fully understands all of the conditions. You may wish to discuss the conditions of this authorization with your contractor to ensure the contractor can accomplish the work in a manner that conforms to all requirements.

If you change the plans or construction methods for work within our jurisdiction, please contact us immediately to discuss modification of this authorization. This office must approve any changes before you undertake them.

Condition 38 of the GP (page 16) provides one year for completion of work that has commenced or is under contract to commence prior to the expiration of the GP on October 13, 2020. You will need to apply for reauthorization for any work within Corps jurisdiction that is not completed by October 13, 2021.

This authorization presumes the work shown on your plans noted above is in waters of the U.S. Should you desire to appeal our jurisdiction, please submit a request for an approved jurisdictional determination in writing to the undersigned.

No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained. This includes but is not limited to a Flood Hazard Development Permit issued by the town if necessary.

II. STATE ACTIONS: PENDING [X], ISSUED [], DENIED [] DATE _____

APPLICATION TYPE: PBR: X, TIER 1: _____, TIER 2: _____, TIER 3: _____, LURC: _____, DMR LEASE: _____, NA: _____

III. FEDERAL ACTIONS:

JOINT PROCESSING MEETING: 1/9/20 LEVEL OF REVIEW: CATEGORY 1: _____ CATEGORY 2: X

AUTHORITY (Based on a review of plans and/or State/Federal applications): SEC 10 _____, 404 _____, 10/404 X, 103 _____

EXCLUSIONS: The exclusionary criteria identified in the general permit do not apply to this project.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA NO _____, USF&WS NO _____, NMFS NO _____

If you have any questions on this matter, please contact my staff at 207-623-8367 at our Augusta, Maine Project Office. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0

Jay L. Clement
JAY L. CLEMENT
SENIOR PROJECT MANAGER
MAINE PROJECT OFFICE

FRANK J. DELGIUDICE
CHIEF, PERMITS & ENFORCEMENT BRANCH
REGULATORY DIVISION
DATE 2-26-2020



**US Army Corps
of Engineers®**
New England District

**PLEASE NOTE THE FOLLOWING CONDITIONS FOR
DEPARTMENT OF THE ARMY
GENERAL PERMIT
NO. NAE-2020-00108**

1. This authorization requires you to 1) notify us before beginning work so we may inspect the project, and 2) submit a Compliance Certification Form. You must complete and return the enclosed Work Start Notification Form(s) to this office at least two weeks before the anticipated starting date. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation (but not mitigation monitoring, which requires separate submittals).
2. The permittee shall assure that a copy of this permit is at the work site whenever work is being performed and that all personnel performing work at the site of the work authorized by this permit are fully aware of the terms and conditions of the permit. This permit, including its drawings and any appendices and other attachments, shall be made a part of any and all contracts and sub-contracts for work which affects areas of Corps of Engineers' jurisdiction at the site of the work authorized by this permit. This shall be done by including the entire permit in the specifications for the work. If the permit is issued after construction specifications but before receipt of bids or quotes, the entire permit shall be included as an addendum to the specifications. The term "entire permit" includes permit amendments. 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 of the entire permit, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps of Engineers jurisdiction.
3. The permittee and his contractor(s) shall minimize the potential for effects to salmon and both sturgeon species by conducting all construction activities for the project in accordance with the Maine DOT - approved Soil Erosion and Water Pollution Control Plan. Instream turbidity will be visually monitored and all erosion controls will be inspected daily to ensure that the measures taken are adequate. If inspection shows that the erosion controls are ineffective, immediate action will be taken to repair, replace, or reinforce controls as necessary.
4. All exposed soils resulting from the construction will be promptly seeded and mulched in order to achieve vegetative stabilization.
5. All areas of temporary fill shall be restored to their original contour and character upon completion of the work.
6. All intertidal construction will be performed in the dry at MLLW in order to minimize potential impacts to fisheries and essential fish habitat.
7. Mitigation shall consist of payment of \$1,075.00 to the Natural Resource Mitigation Fund. The completed ILF Project Data Worksheet which must be mailed with a cashier's check or bank draft, made out to "Treasurer, State of Maine", with the permit number noted on the check. The check and worksheet should be mailed to: ME DEP, Attn: ILF Program Administrator, State House Station 17, Augusta, ME 04333. No project construction may begin until the permittee provides the Corps with a copy of the check, with the permit number noted on the check. The ILF amount is only valid for a period of one year from the date on the authorization letter. After that time, the project would need to be reevaluated and a new amount determined.

MAINE IN-LIEU-FEE (ILF) PROJECT IMPACT WORKSHEET

DEP Invoice # _____ *Filled in by ILF Administrator in Augusta*

Project name: _____ Maine Department of Transportation; Portland; Veranda Street Overpass Reconstruction; WIN 21745.00

Permittee(s): _____ Maine Dept. of Transportation

DEP/Corps permit #: _____ /NAE-2020-00108 *Attach a copy of the permit*

DEP/Corps Project Manager: _____ R. Green/J. Clement

ILF Fee Amount: _____ 125 s.f. x [\$3.61 (enhancement & restoration cost) + \$0.69 (ave. assessed land value)] = \$1,075.00

Check Date: _____ *Filled in by ILF Administrator in Augusta*

Project address: _____ Veranda Street & I-295; Portland, Maine *Attach a locus map*

Biophysical region - Section: _____ Southern Maine

Biophysical region - Subsection: _____ Gulf of Maine Coastal Lowland

Total impact area subject to compensation: _____ 125 SF (0.002 acres)

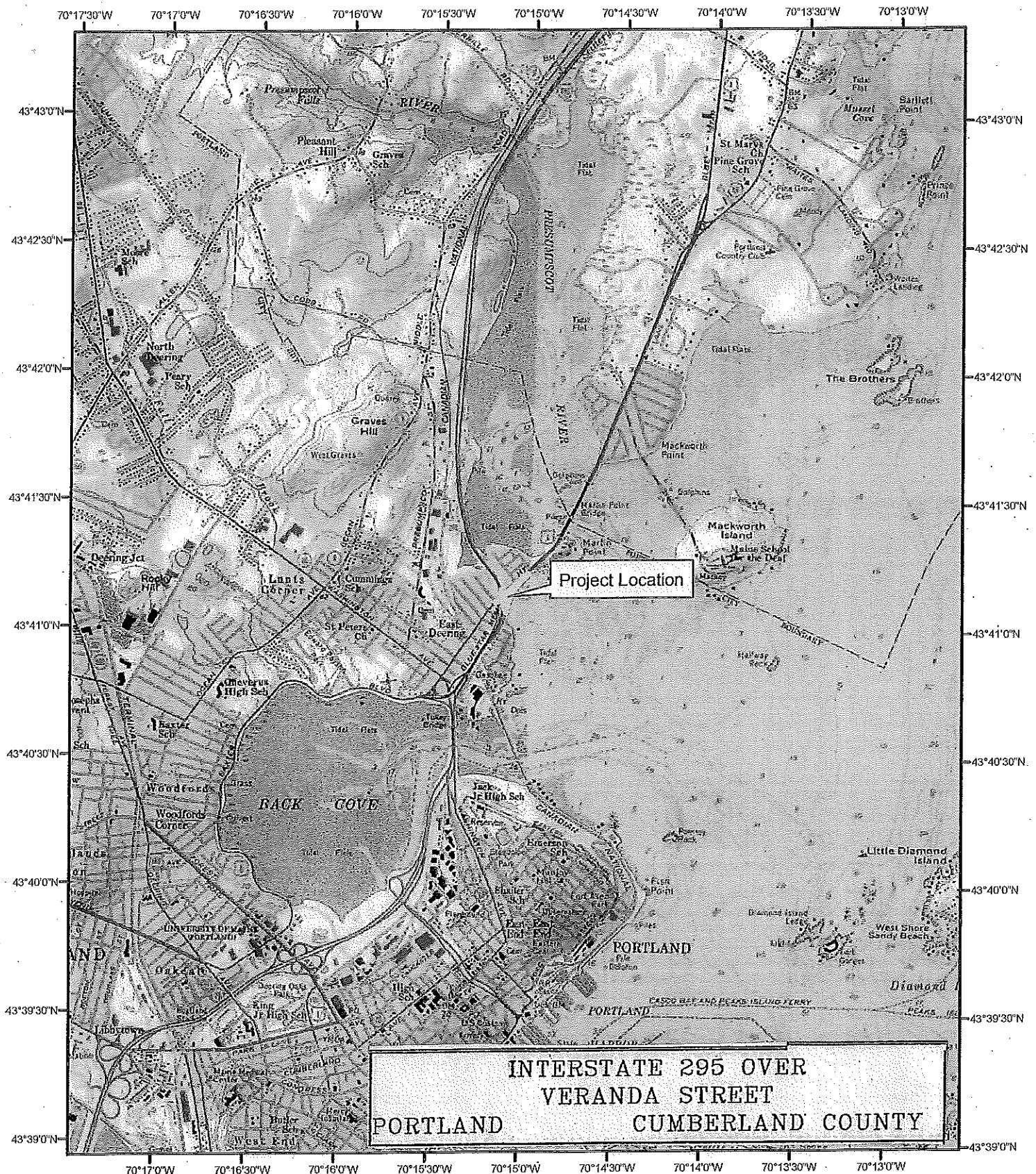
Resource(s) impacted:

Resource Types (list all that apply)	Functions & Values (for wetland impacts) (list all that apply, by resource type)	Types of Impacts (list all that apply, by resource type)	SF Impacted (by resource type)	Linear FT of Streams Impacted (for Corps use)
E2EM	WH, FF, STR, NR, PE, SS	Filling/Scour	125	NA
Total impacts:			125	0

Resource Types: Wetlands by NWI Type (PEM, PFO, PSS, PUB, M1, M2, E1, E2, etc), significant vernal pool depression (SVP), significant vernal pool critical terrestrial habitat (VPCTH), shorebird feeding & staging habitat (shorebird), inland waterfowl & wading bird habitat (IWWH), Tidal waterfowl & wading bird habitat (TWWH), lake or pond (L1, L2), river/stream/brook (RSB)

Wetland Functions & Values: Groundwater recharge/discharge (GWR); floodflow alteration (FF); fish & shellfish habitat (FSH); sediment toxicant retention (STR); nutrient removal (NR); production export (PE); sediment/shoreline stabilization (SS); recreation (R); education/scientific value (ESV); uniqueness/heritage (UH); and visual quality/aesthetics (VQ); wildlife habitat (WH)

Types of Impacts: May include: filling, dredging, vegetation conversion (e.g. forested to shrub/scrub), excavation with associated discharge, etc.



Portland - WIN 021745.00

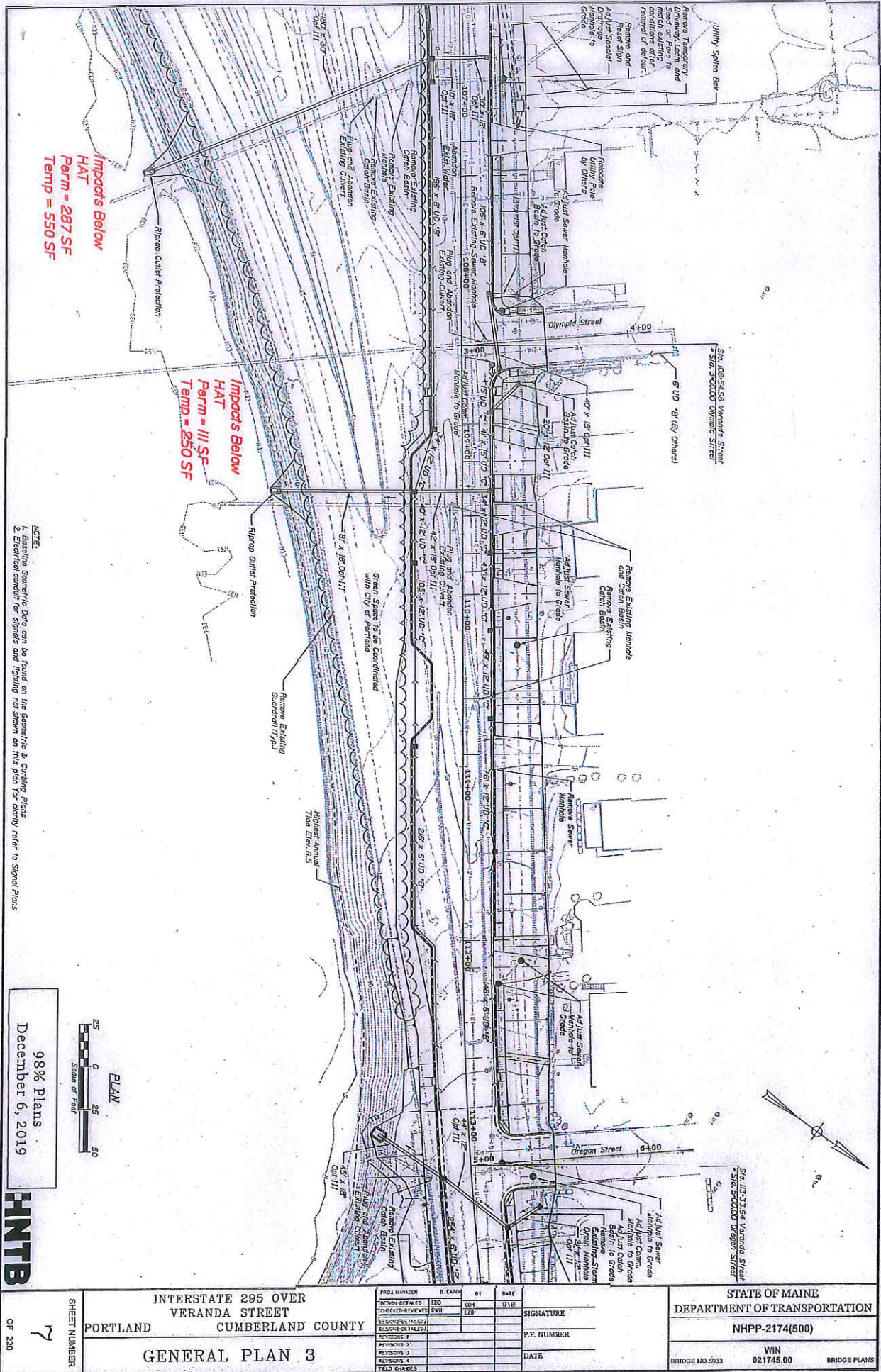
Bridge Replacement / Ramps & Intersection Improvements

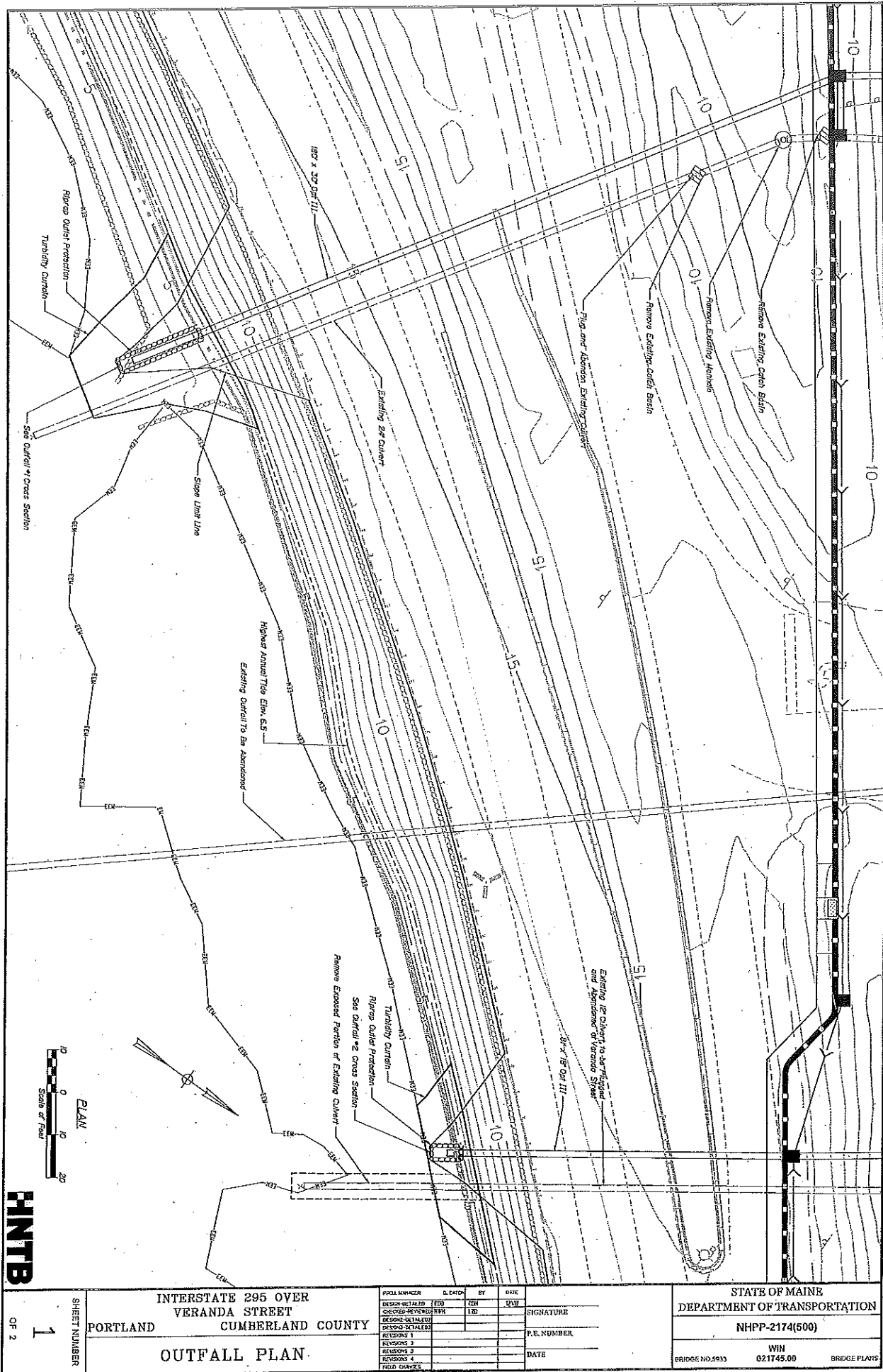
I-295 Bridge #5993 over Veranda Street

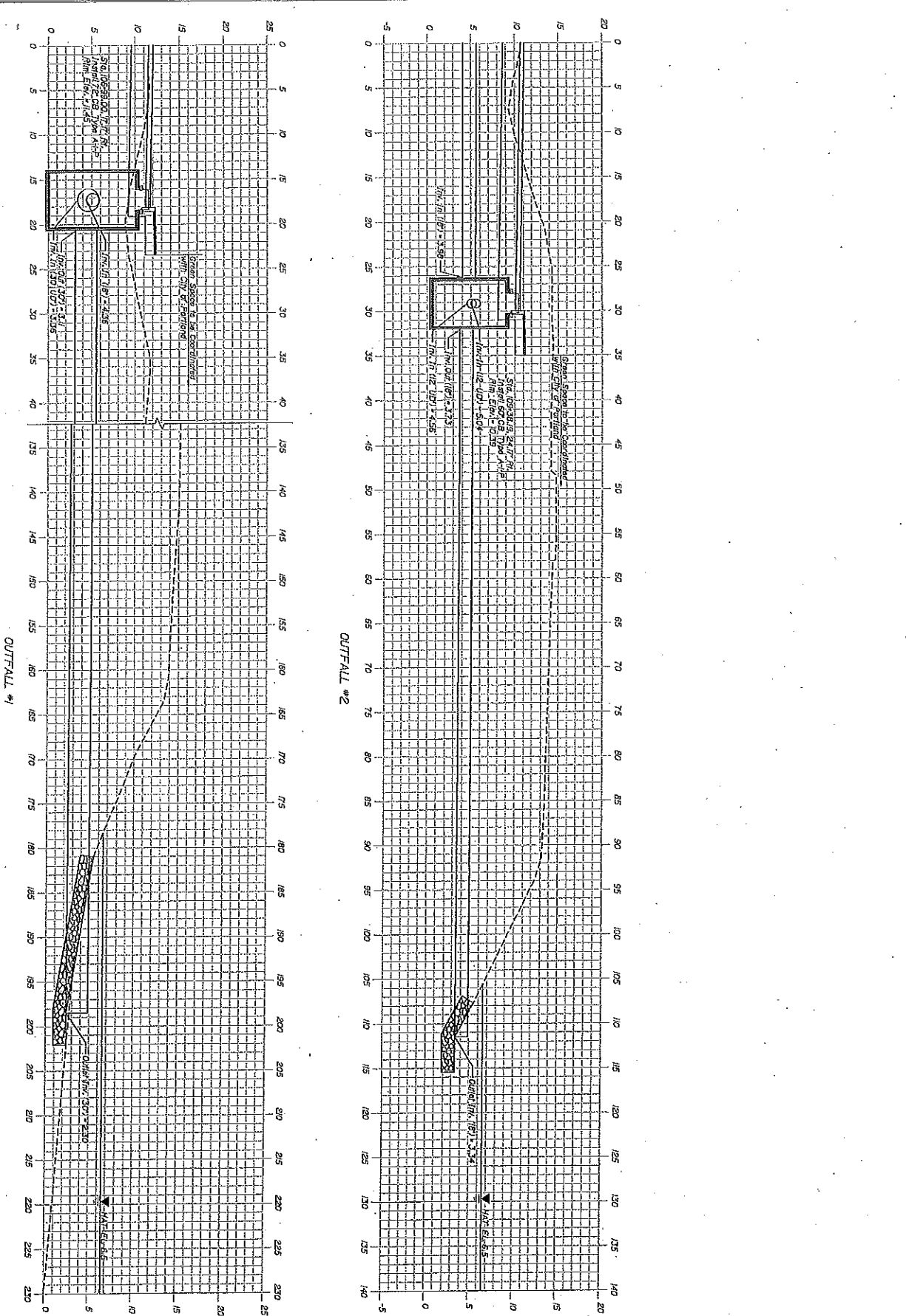
2018 USGS Portland, ME Quad 24K

43.685699, -70.252182









Sta. 106+85.15 to Sta. 107+28.74

OF 2

2

SHEET NUMBER

PORTLAND
VERANDA STREET
OUTFALL CROSS SECTIONS

PROJ. NUMBER	D. DATE	BY	DATE
DESIGN-DETAILED	ED	DB	RUB
DESIGN-REVIEWED	BN	LB	
DESIGN-DETAILED			
DESIGN-DETAILED			
REVISION 1			
REVISION 2			
REVISION 3			
REVISION 4			
FIELD CHANGES			

SIGNATURE	
P.E. NUMBER	
DATE	

STATE OF MAINE DEPARTMENT OF TRANSPORTATION
NHPP-2174(500)
WIN 021745.00
HIGHWAY PLANS



**US Army Corps
of Engineers®**
New England District

(Minimum Notice: Permittee must sign and return notification
within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

Permit Number: NAE-2020-00108

MaineDOT WIN 21745.00

Project Manager Clement

Name of Permittee: Maine Dept. of Transportation

Permit Issuance Date: 2/26/20

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Permits and Enforcement Branch C *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

Printed Name

Date of Work Completion

() _____
Telephone Number

() _____
Telephone Number



**US Army Corps
of Engineers®**
New England District

WORK-START NOTIFICATION FORM
(Minimum Notice: Two weeks before work begins)

EMAIL TO: jay.l.clement@usace.army.mil

or

MAIL TO:

Jay Clement
US Army Corps of Engineers
Maine Project Office
442 Civic Center Drive
Augusta, Maine 04330

Corps of Engineers Permit No. NAE-2020-00108 was issued to the Maine Dept. of Transportation. This work is located in Casco Bay and in adjacent tidal wetlands at Portland, Maine and authorized the permittee to place temporary and permanent fill below the high tide line in order to replace the I-295 overpass of Veranda Street and by association, replace two existing stormwater outfalls along Route 1/88. This work will result in approximately 398 s.f. of permanent and 800 s.f. of temporary impact to intertidal substrate and 125 s.f. of tidal wetland impact from hydraulic scour. MaineDOT WIN 21745.00

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

Business Address: _____

Phone & email: () _____ () _____

Proposed Work Dates: **Start:** _____ **Finish:** _____

Permittee/Agent Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Date Permit Issued: 2/26/20 **Date Permit Expires:** _____

FOR USE BY THE CORPS OF ENGINEERS

PM: Clement **Submittals Required:** No

Inspection Recommendation: Inspect as convenient

**DEPARTMENT OF THE ARMY
GENERAL PERMIT FOR
THE STATE OF MAINE**

The New England District of the U.S. Army Corps of Engineers (Corps) hereby issues a General Permit (GP) for activities subject to Corps jurisdiction in waters of the U.S. within the boundaries of the State of Maine. This GP is issued in accordance with Corps regulations at 33 CFR 320 - 332 [see 33 CFR 325.2(e)(2)]. This GP authorizes activity-specific categories of work that are similar in nature and cause no more than minimal individual and cumulative adverse environmental impacts. Refer to Page 2 for the list of activities and Appendix A for activity specific conditions of eligibility in inland and tidal waters.

I. GENERAL CRITERIA

1. In order for activities to qualify for this GP, they must meet the GP's terms and eligibility criteria (Pages 1–4), General Conditions (GC) (Pages 5 – 20), and Appendix A - Definition of Categories.
2. Under this GP, projects may qualify for the following:
 - Category 1: Category 1 Self-Verification Notification Form is required (SVNF – see Appendix B).
 - Category 2: Application to and written approval from the Corps is required (Pre-Construction Notification (PCN)). No work may proceed until written approval from the Corps is received.

If your project is ineligible for Category 1, it may qualify for Category 2 or an Individual Permit and you must submit an application (see Page 3). The thresholds for activities eligible for Categories 1 and 2 are defined in Appendix A. This GP does not affect the Corps Individual Permit review process or activities exempt from Corps regulation.

3. Prospective permittees need to read:
 - a. Section II to determine if the activity requires Corps authorization.
 - b. Sections III and IV to determine if the activity may be eligible for authorization under this GP, specifically whether it is eligible for Self-Verification (SV) or whether Pre-Construction Notification (PCN) is required.
4. Permittees must ensure compliance with all applicable General Conditions in Section IV. The Corps will consider unauthorized any activity requiring Corps authorization if that activity is under construction or completed and does not comply with all of the terms and conditions.
5. Project proponents are encouraged to contact the Corps with questions at any time. Pre-application meetings (see 33 CFR 325.1(b)), whether arranged by the Corps or requested by permit applicants, are encouraged to facilitate the review of projects. Pre-application meetings and/or site visits can help streamline the permit process by alerting the applicant to potentially time-consuming concerns that are likely to arise during the evaluation of their project (e.g., avoidance, minimization and compensatory mitigation requirements, historic properties, endangered species, essential fish habitat, and dredging contaminated sediments).

II. CORPS JURISDICTION/ACTIVITIES COVERED

1. Permits are required from the Corps of Engineers for the following work:

a. The construction of any structure in, over or under any navigable water of the United States (U.S.)¹, the excavating or dredging from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters. The Corps regulates these activities under Section 10 of the Rivers and Harbors Act of 1899. See 33 CFR 322;

b. The discharge of dredged or fill material and certain discharges associated with excavation into waters of the U.S. (e.g. sidecasting). The Corps regulates these activities under Section 404 of the Clean Water Act (CWA). See 33 CFR 323; and

c. The transportation of dredged material for the purpose of disposal in the ocean. The Corps regulates these activities under Section 103 of the Marine Protection, Research and Sanctuaries Act. See 33 CFR 324.

2. Related laws:

33 CFR 320.3 includes a list of related laws, including: Section 401 of the CWA, Section 402 of the CWA, Section 307(c) of the Coastal Zone Management (CZM) Act of 1972, The National Historic Preservation Act of 1966, the Endangered Species Act, the Fish and Wildlife Act of 1956, the Marine Mammal Protection Act of 1972, Magnuson-Stevens Act, and Section 7(a) of the Wild and Scenic Rivers Act.

3. An activity listed below may be authorized by this GP only if that activity and the permittee satisfy all of the GP's terms and conditions. Any activity not specifically listed below may still be eligible for the GP; applicants are advised to contact the Corps for a specific eligibility determination. Category 1 and Category 2 eligibility criteria for each activity in both Inland and Tidal waters can be found in Appendix A.

1. Repair, Replacement, Expansion, and Maintenance of Authorized Structures and Fills
2. Moorings
3. Structures, Floats and Lifts
4. Aids to Navigation, and Temporary Recreational Structures
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation
6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges
7. Bank and Shoreline Stabilization
8. Residential, Commercial, Industrial, and Institutional Developments, and Recreational Facilities
9. Utility Line Activities
10. Linear Transportation Projects
11. Mining Activities
12. Boat Ramps and Marine Railways
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects
14. Reshaping Existing Drainage Ditches and Mosquito Management
15. Oil Spill and Hazardous Material Cleanup
16. Cleanup of Hazardous and Toxic Waste
17. Scientific Measurement Devices
18. Survey Activities
19. Agricultural Activities
20. Fish and Wildlife Harvesting, Enhancement, and Attraction Devices
21. Habitat Restoration, Establishment and Enhancement Activities
22. Previously Authorized Activities
23. Stream & Wetland Crossings
24. Aquaculture

Note: Multiple activities may be authorized in the same GP, e.g. a recreational pier (#3) with an associated mooring (#2) or a windpower facility (#13) with an associated transmission line (#9).

¹ Defined in Appendix F, Definitions and at 33 CFR 328.

III. PROCEDURES

1. State Approvals. Applicants are responsible for applying for and obtaining any of the required state or local approvals. Federal and state jurisdictions may differ in some instances. State permits may be required for specific projects regardless of the general permit category.

In order for authorizations under this GP to be valid, when any of the following state approvals or statutorily-required reviews is also required, the approvals must be obtained prior to the commencement of work in Corps jurisdiction.

- Maine Department of Environmental Protection (DEP): Natural Resources Protection Act (NRPA) permit, including permit-by-rule (PBR) and general permit authorizations; Site Location of Development Act permit; Maine Waterway Development and Conservation Act permit; and Maine Hazardous Waste, Septage, and Solid Waste Management Act license.
- Maine Department of Conservation, Agriculture & Forestry: Land Use Planning Commission (LUPC) permit.
- Maine Department of Marine Resources: Aquaculture Leases.
- Maine Department of Conservation, Bureau of Parks and Lands, Submerged Lands: Submerged Lands Lease.

NOTE: This GP may also be used to authorize projects that are not regulated by the State of Maine (e.g., certain seasonal floats or moorings).

2. How to Obtain/Apply for Authorization.

a. Category 1 (Self-Verification): Self-Verification Notification Form (SVNF) required. The SVNF is required for all SV eligible work in Maine unless otherwise stated in Appendix A. Activities that are eligible for SV are authorized under this GP and may commence without written verification from the Corps provided the prospective permittee has:

i. Confirmed that the activity will meet the terms and conditions of Category 1. Consultation with the Corps and/or other relevant federal and state agencies may be necessary to ensure compliance with the applicable general conditions (GCs) and related federal laws such as the National Historic Preservation Act (see GC 6), the Endangered Species Act (GC 8) and the Wild and Scenic Rivers Act (GC 9). Prospective permittees are encouraged to contact the Corps with SV eligibility questions. Activities not meeting the SV criteria must submit a PCN to the Corps.

ii. Submitted the SVNF (see GC 27 and Appendix B) to the Corps. **NOTE: A copy of a state permit application form may be an acceptable surrogate for the SVNF. Whichever form chosen needs to include a location map, plans, and an Official Species List for federally listed threatened or endangered species (Reference Appendix D).**

b. Category 2 (Pre-Construction Notification (PCN)): Application to and written verification from the Corps is required before work can proceed. For activities that do not qualify for SV or where otherwise required by the terms of the GP, the permittee must submit a PCN and obtain a written permit before starting work in Corps jurisdiction.

i. The Corps will coordinate review of all activities requiring PCN with federal and state agencies and federally recognized tribes, as appropriate. To be eligible and subsequently authorized, an activity must result in no more than minimal individual and cumulative effects on the aquatic environment as determined by the Corps in accordance with the criteria listed within this GP. This may require project modifications involving avoidance, minimization, or compensatory mitigation for unavoidable impacts to ensure that the net adverse effects of a project are no more than minimal.

ii. The Corps will attempt to issue a written eligibility determination within the state's review period. Regardless, work eligible for Category 2 may not proceed before Corps written approval is received.

c. All applicants for Category 2 projects must:

- i. Apply directly to the Corps using the state application form or the Corps application form (ENG Form 4345²), and apply directly to the state (DEP, LUPC, BPL or DMR) as applicable using the appropriate state form, if the work is regulated by the Corps and the state; or
- ii. Apply directly to the Corps using the Corps application form (ENG Form 4345²) if the work is regulated by the Corps but not the state (DEP, LUPC, BPL or DMR).
- iii. Provide application information (see “Information Typically Required” in Appendix C) to help ensure the application is complete and to speed project review.
- iv. Obtain an Official Species List of federally threatened or endangered species in the project area (GC 8).
- v. Submit a copy of their application materials to the Maine Historic Preservation Commission (MHPC) and all five Indian tribes listed at Appendix E, at the same time, or before, they apply to the Corps, to be reviewed for the presence of historic, archaeological or tribal resources in the permit area that the proposed work may affect. Submittals to the Corps shall include information to indicate that this has been done (a copy of the applicant’s cover letter to MHPC and tribes or a copy of the MHPC and tribal response letters is acceptable).

d. Work that is not regulated by the State of Maine, but is subject to Corps jurisdiction, may still be eligible for authorization under this GP.

e. **Emergency Situations:** 33 CFR 325.2(e)4 states that an “emergency” is a situation 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 permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures.” Emergency work is subject to the same terms and conditions of this GP as non-emergency work, and similarly, must qualify for authorization under the GP; otherwise an IP is required. The Corps will work with all applicable agencies to expedite verification according to established procedures in emergency situations.

3. Individual Permits. Projects that are not authorized by this GP require an Individual Permit (IP) (33 CFR 325.5) and proponents must submit an application directly to the Corps. This GP does not affect the Corps IP review process or activities exempt from Corps regulation. For general information and application form, see the Corps website or contact the Corps (see Appendix E). The Corps encourages applicants to apply concurrently for a Corps IP and applicable state permits.

The Corps retains discretionary authority on a case-by-case basis to elevate a GP eligible project to an IP based on concerns for the aquatic environment or for any other factor of the public interest [33 CFR 320.4(a)]. Whenever the Corps notifies an applicant that an IP is required, no work in Corps jurisdiction may be conducted until the Corps issues the required authorization in writing indicating that work may proceed.

4. Enforcement/Non-Compliance. Work performed without the required Corps of Engineers permits is subject to administrative, civil, and criminal penalties. The Corps will evaluate unauthorized activities for enforcement action under 33 CFR 326.

The Corps will consider unauthorized any activity requiring Corps authorization if that activity is under construction or completed and does not comply with all of the terms and conditions of a GP or an IP. The Corps may elect to suspend enforcement proceedings if the permittee modifies his project to comply with a GP.

After considering whether a violation was knowing or intentional, and other indications of the need for a penalty, the Corps can elect to terminate an enforcement proceeding with an after-the- fact authorization under a GP, if all terms and conditions of the GP have been satisfied, either before or after the activity has been accomplished.

² Located at www.nae.usace.army.mil/missions/regulatory under “Forms & Publications.”
Section III

IV. GENERAL CONDITIONS

To qualify for GP authorization, the prospective permittee must comply with the following general conditions, as applicable.

1. Other Permits
2. Federal Jurisdictional Boundaries
3. Minimal Direct, Secondary, and Cumulative Impacts
4. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)
5. Single and Complete Projects
6. Historic Properties
7. Corps Projects and Property
8. Federal Threatened and Endangered Species
9. Wild and Scenic Rivers
10. Navigation
11. Federal Liability
12. Utility Line Installation and Removal
13. Heavy Equipment in Wetlands or Mudflats
14. Temporary Fill
15. Restoration of Special Aquatic Sites (including wetland areas).
16. Soil Erosion, Sediment and Turbidity Controls
17. Time of Year Windows/Restrictions.
18. Aquatic Life Movements & Management of Water Flows
19. Water Quality and Coastal Zone Management
20. Floodplains and Floodways
21. Storage of Seasonal Structures
22. Spawning, Breeding, and Migratory Areas
23. Vernal Pools
24. Invasive and Other Unacceptable Species
25. Programmatic Agreements
26. Permit On-Site
27. Self-Verification Notification Form (SVNF)
28. Inspections
29. Maintenance
30. Property Rights
31. Transfer of GP Verifications
32. Modification, Suspension, and Revocation
33. Special Conditions
34. False or Incomplete Information
35. Abandonment
36. Enforcement Cases
37. Duration of Authorization
38. Previously Authorized Activities
39. Discretionary Authority
40. St. John/St. Croix Rivers.
41. National Lands
42. Essential Fish Habitat (EFH)
43. Work Site Restoration
44. Bank Stabilization
45. Stream Work & Crossings and Wetland Crossings

1. Other Permits. Permittees must obtain other federal, state, or local authorizations required by law. Applicants are responsible for applying for and obtaining all required state or local approvals. This includes, but is not limited to, the project proponent obtaining a Flood Hazard Development Permit issued by the town, if necessary. Inquiries may be directed to the municipality or to the Maine Floodplain Management Coordinator at (207) 287-8063. See <http://www.maine.gov/dacf/flood/>

2. Federal Jurisdictional Boundaries

a. Applicability of this GP shall be evaluated with reference to federal jurisdictional boundaries. Applicants are responsible for ensuring that the boundaries used satisfy the federal criteria defined at 33 CFR 328 “Waters of the U.S.” and 33 CFR 329 “Navigable Waters of the U.S.”

NOTE: Waters of the U.S. include the subcategories “navigable waters of the U.S.” and “wetlands.”

b. For Category 1 projects, proponents are not required to delineate the waters of the U.S. that they plan to impact, but must approximate the square footage of impacts in order to determine the review category (1 or 2 or Individual Permit). For projects filling <15,000 square feet (SF) of waters of the U.S. that do not qualify for Category 1 (e.g., vernal pool, secondary or endangered species impacts, etc.) and therefore require an application to the Corps (PCN), and for those filling ≥15,000 SF, applicants shall delineate all waters of the U.S. that will be filled (direct impacts) in accordance with the Corps of Engineers Wetlands Delineation Manual and the most recent regional supplement (see Appendix C). In addition, applicants shall approximately identify all waters of the U.S. on the property and *known* waters adjacent to the property in order for the Corps to evaluate secondary impacts. The waters of the U.S. shall be clearly shown on the project plans submitted with the application. This includes all waters of the U.S. in areas under DEP or LUPC jurisdiction regardless of whether they’re shown on LUPC zoning maps.

c. On a case-by-case basis, the Corps may modify/refine the above delineation and identification requirements for waters of the U.S. See www.nae.usace.army.mil/missions/regulatory >> Jurisdictional Limits and Wetlands for more information on delineating jurisdictional areas.

3. Minimal Direct, Secondary, and Cumulative Effects³

a. Projects authorized by this GP shall have no more than minimal direct, secondary and cumulative adverse environmental impacts. Category 2 applicants should provide information on secondary and cumulative impacts as stated in Appendix C. Compensatory mitigation may be required to offset unavoidable impacts (see GC 4) and to ensure that they are no more than minimal. Compensatory mitigation requirements will be determined on a case-by-case basis.

b. Secondary impacts to waterway and/or wetland areas, (e.g., areas drained, flooded, cleared, excavated or fragmented) shall be added to the total fill area when determining whether the project qualifies for Category 1 or 2. Direct, secondary and cumulative impacts are defined at Appendix A, Endnote 2 and Appendix F.

c. Site clearing, grading and construction activities in the upland habitat surrounding vernal pools (“Vernal Pool Management Areas”) are secondary impacts. See GC 23 for avoidance and minimization requirements and recommendations.

d. Bank stabilization activities in tidal waters are provided at Appendix A, Page 30. Direct impacts in tidal waters from contiguous bank stabilization projects in excess of 200 linear feet (Applicant or Applicant + Abutters combined) must undergo Category 2 review.

4. Mitigation (Avoidance, Minimization, and Compensatory Mitigation)

a. Discharges of dredged or fill material into waters of the U.S., including wetlands, shall be avoided and minimized to the maximum extent practicable through consideration of alternatives. The Corps may require compensatory mitigation of unavoidable direct and secondary impacts associated with Category 2 projects on a case-by-case basis.

b. Applicants proposing work in jurisdictional waters should consider riparian/forested buffers for stormwater management and low impact development (LID) best management practices (BMPs) to reduce

³ Direct, secondary and cumulative effects are defined at Appendix F, Definitions and Acronyms.
Section IV

impervious cover and manage stormwater to minimize secondary impacts to aquatic resources to the maximum extent practicable.⁴

c. Compensatory mitigation⁵ for effects to waters of the U.S., including direct, secondary and temporal⁶, may be required for permanent impacts that exceed the SV area limits, and may be required for temporary impacts that exceed the SV area limits, 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 lasting secondary effects may generally be excluded from this requirement. Refer to Appendix G.

5. Single and Complete Projects⁷

a. This GP shall not be used to piecemeal work and shall be applied to single and complete projects. When determining the review category in Appendix A (Category 1 or 2) for a single and complete project, proponents must include any permanent historic fill placed since October 1995 that is associated with that project and all currently proposed temporary and permanent impact areas.

b. A single and complete project must have independent utility⁷.

c. Unless the Corps determines the activity has independent utility:

i. This GP shall not be used for any activity that is part of an overall project for which an Individual Permit is required.

ii. 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 treated together as constituting one single and complete project.

d. For linear projects, such as power lines or pipelines with multiple crossings, the 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 Category 2 activity, then the entire linear project shall be reviewed as one project under Category 2.

6. Historic Properties

a. No undertaking shall cause effects (defined at 33 CFR 325 Appendix C and 36 CFR 800) on properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places⁸, including previously unknown historic properties within the permit area, unless the Corps or another Federal action agency has satisfied the consultation requirements of Section 106 of the National Historic Preservation Act (NHPA). The State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO) and the National Register of Historic Places can assist with locating information on: i) previously identified historic properties; and ii) areas with potential for the presence of historic resources, which may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and the SHPO and/or THPO(s).

⁴ See: www.nae.usace.army.mil/missions/regulatory >> State General Permit >> Permit Resources >> Mitigation for this additional information: a) "Wetland BMP Manual - Techniques for Avoidance & Minimization," b) riparian/forested buffer BMPs, and c) LID BMPs. LID BMPs include, but are not limited to: replacing curbs and gutters with swales; using an open space design for subdivisions; using permeable, pervious or porous pavements; constructing bio-retention systems; and/or, adding a green roof or rain garden.

⁵ Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR 332. See also the New England District Compensatory Mitigation Guidance at www.nae.usace.army.mil/regulatory >> Mitigation.

⁶ 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).

⁷ Single and Complete Project and Independent Utility are defined in Appendix F - Definitions.

⁸ The majority of historic properties are not listed on the National Register of Historic Places and may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and the SHPO and/or THPO(s).

b. For activities eligible for SV, proponents must ensure and document that the activity will not cause effects as stated in 6(a). Proponents must submit a PCN if the authorized activity may cause effects as stated in 6(a) as soon as possible to ensure that the Corps is aware of any potential effects of the permitted activity on any historic property to ensure all Section 106 requirements are met.

c. All PCNs shall: i) show notification to the SHPO and applicable THPO(s)⁹ for their identification of historic properties, ii) state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties, and iii) include any available documentation from the SHPO or THPO(s) indicating that there are or are not historic properties affected. Starting consultation early in project planning can save proponents time and money.

d. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

7. Corps Projects and Property

a. In addition to any authorization under this GP, proponents must contact the Corps Real Estate Division at (978) 318-8585 for work occurring on or potentially affecting Corps properties and/or Corps-controlled easements to initiate reviews and determine what real estate instruments are necessary to perform work. Permittees may not commence work on Corps properties and/or Corps-controlled easements until they have received any required Corps real estate documents evidencing site-specific permission to work.

b. Any proposed temporary or permanent alteration, or modification or use, including occupation, 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 but not necessarily owned by the United States), which would obstruct or impair the usefulness of the federal project in any manner, and/or would involve changes to the authorized federal project's scope, purpose, and/or functioning that go beyond minor modifications required for normal operations and maintenance, is not eligible for SV and requires review and approval by the Corps pursuant to 33 USC 408. Where Section 408 is applicable, a decision on a Department of the Army general permit application will not be rendered prior to the decision on a Section 408 request.

c. Any structure or work within any Corps Federal Navigation Project (FNP) or its buffer zone¹⁰, shall be subject to removal at the owner's expense prior to any future Corps dredging or the performance of periodic hydrographic surveys. See GC 10 for more requirements related to FNPs.

8. Federal Threatened and Endangered Species

a. No activity is authorized which: i) 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 the critical habitat of such species; ii) "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed; or iii) violates the ESA.

b. **All applicants must request an Official Species List from the US Fish & Wildlife Service and must include the list in the Corps permit application. To request an Official Species List, refer to the instructions in Appendix D.**

c. **For federally listed species in tidal waters, applicants should contact the National Marine Fisheries Service at: <http://www.greateratlantic.fisheries.noaa.gov/protected/section7/>**

⁹ Appendix E, 3(a)&(b). Historic Resources, provides contact information and each tribe's "area of concern."

¹⁰ See Appendix H for a list of FNPs. The buffer zone is equal to three times the authorized depth of the FNP.
Section IV

d. A PCN is required if a threatened or endangered species, a species proposed for listing as threatened or endangered, or designated or proposed critical habitat (all hereinafter referred to as “listed species or habitat”), as identified under the ESA, is present in the action area¹¹.

e. Federal agencies should follow their own procedures for complying with the requirements of the ESA but should coordinate that consultation with the Corps as well.

9. Wild and Scenic Rivers.¹² Any activity that occurs in the designated main stem of, within 0.25 mile up or downstream of the designated main stem of, or in tributaries within .25 miles of the designated main stem of a National Wild and Scenic River, or in “bordering and contiguous wetlands” (see Appendix A, Endnote 1) that are adjacent to the designated main stem of a National Wild and Scenic River, or that has the potential to alter flows within a river within the National Wild and Scenic River System, is not eligible for Category 1 regardless of size of the impacts. This condition applies to both designated Wild and Scenic Rivers and rivers officially designated by Congress as study rivers for possible inclusion while such rivers are in an official study status. National Wild and Scenic Rivers System segments for Maine as of October 2015 include: Allagash River beginning at Telos Dam continuing to Allagash checkpoint at Eliza Hole Rapids, approximately 3 miles upstream of the confluence with the St. John River (length = 92 miles); and 11.25 miles of the York River, in the State of Maine, from its headwaters at York Pond to the mouth of the river at York Harbor, plus its tributaries (currently under study).

10. Navigation

a. Any structure or work that extends closer to the horizontal limits of any Corps Federal Navigation Project (see Appendix H) than a distance of three times the project’s authorized depth shall be subject to removal at the owner’s expense prior to any future Corps dredging or the performance of periodic hydrographic surveys. This is applicable to Category 1 and 2. Reference Appendix A, Page 28 (Mooring) and Page 29 (Structures, Floats & Lifts).

b. 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.

c. 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 the Corps, 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.

d. A PCN is required for all work in, over or under an FNP or its buffer zone unless otherwise indicated in Appendix A. (Reference Appendix A, Endnote 13, Page 36)

11. Federal Liability. In issuing this permit, 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 this permit; (d) design or construction deficiencies associated with the permitted work; (e) damage claims associated with any future modification, suspension, or revocation of this permit.

12. Utility Line Installation and Removal

a. Subsurface utility lines shall remain subsurface. If it is necessary to discharge dredged or filled material not previously authorized in order to keep such utility lines buried or restore them to their original subsurface condition, a PCN and written verification from the Corps may be required (e.g., in the case of side

¹¹ The “Endangered Species Consultation Handbook – Procedures for Conducting Consultation and Conference Activities Under Section 7 of the ESA,” defines action area as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action. [50 CFR 402.02].”

¹² Additional information can be found at: <http://www.rivers.gov>.

casting into wetlands from utility trenches). Certain repair, replacement or maintenance activities may be eligible for Category 1 – refer to Appendix A.

b. 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. In accordance with Corps New England District Regulation NEDER 1110-1-9 (www.nae.usace.army.mil/missions/regulatory >> [Useful Links and Documents](#)), as an absolute minimum, the bottom cover associated with the initial installation of utility lines under navigable waters and navigation channels shall be 48 inches in soil or 24 inches in rock excavation in competent rock unless specified in a written determination. These minimum bottom cover requirements for pipelines and cables shall be measured from the maximum depth of dredging to the top of the utility. The maximum depth of dredging, in waterways having existing FNPs, is generally considered to be the authorized project depth plus any allowance for advanced maintenance and the allowable overdepth for dredging tolerances. In waterways that do not have existing FNPs, this depth should be taken as two feet below the existing bottom or maximum depth of proposed dredging, as applicable.

c. Aerial utility lines that cross navigable waters must meet minimum clearances. See 33CFR322.5(i).

d. For horizontal directional drilling work, returns of drilling fluids to the surface (i.e., frac-outs) are not authorized and require restoration to the maximum extent practicable in accordance with the terms and conditions of this GP. The permittee and its contractor shall have onsite and shall implement the procedures detailed in a frac-out contingency plan for monitoring drilling operations and for the immediate containment, control and recovery/removal of drilling fluids released into the environment should a discharge of material occur during drilling operations.

e. Within the context of any new installations, any abandoned or inactive utility lines should be removed and faulty lines (e.g., leaking hazardous substances, petroleum products, etc.) should be removed or repaired to the extent practicable. A PCN and written verification from the Corps is required if they are to remain in place, e.g., to protect sensitive areas or ensure safety.

f. No work shall drain a water of the U.S. by providing a conduit for water on or below the surface. Trench plugs installed along pipelines may be effective.

13. Heavy Equipment in Wetlands or Mudflats. Operating heavy equipment other than fixed 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 either have low ground pressure (typically <3 psi), or it shall be placed on swamp/construction/timber mats (herein referred to as “construction mats” and defined at Appendix A, Endnote 4) that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation. Construction mats are to be placed in the wetland from the upland or from equipment positioned on swamp 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 Corps authorization (Category 2 authorization or Individual Permit). Similarly, the permittee may request written authorization from the Corps to waive use of mats during frozen, dry or other conditions. An adequate supply of spill containment equipment shall be maintained on site. Construction mats should be managed in accordance with the Construction Mat BMPs at www.nae.usace.army.mil/missions/regulatory >> State General Permits >> Permit Resources.

14. Temporary Fill. Temporary fill that qualifies for Category 1 (e.g., <15,000 SF of combined temporary and permanent fill associated with the single and complete project) or is authorized in writing under Category 2, shall adhere to the following:

a. All temporary fill and disturbed soils shall be stabilized to prevent its 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, typically within three calendar days after disturbance. Accelerated stabilization (the providing of temporary or permanent cover by the end of the work day to prevent erosion) shall be employed as necessary. Temporary fill must be placed in a manner that will prevent it from being eroded by expected high flows.

b. Unconfined temporary fill authorized for discharge into waters of the U.S. (e.g., temporary stream crossings) shall consist of material that minimizes impacts to water quality (e.g. washed stone, stone, etc.).

c. 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. Place materials 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.

d. Temporary fill, construction mats and corduroy roads shall be entirely removed as soon as they are no longer needed to construct the authorized work. Temporary fill shall be placed in its original location or disposed of at an upland site and suitably contained to prevent its subsequent erosion into waters of the U.S. To qualify for Category 1, temporary fill placed during the: i.) growing season must be removed before the beginning of the next growing season; and ii.) non-growing season may remain throughout the following growing season, but must be removed before the beginning of the next growing season.

e. Temporary fill, construction mats and corduroy roads are considered temporary only if they are removed as soon as they are no longer needed to construct the authorized work.

f. Construction debris and/or deteriorated materials shall not be located in waters of the U.S.

15. Restoration of Special Aquatic Sites (Including Wetland Areas)

a. Temporary fills must be removed in their entirety and the affected areas restored to their pre-construction condition, function and elevation. Restoration shall typically commence no later than the completion of construction.

b. For excavated areas, "restored to pre-construction condition, function and elevation" means careful removal of existing soil and vegetation, separate topsoil and subsoil stockpiling, soil protection, and replacement back to the original location such that the original soil layering and vegetation schemes are approximately the same, unless otherwise authorized. Plan for natural settling that will occur (the initial post-restoration elevation of the backfilled areas should be above the desired final grade as topsoil may settle by 33% to 50%), minimize compaction, and ensure that topsoil is void of gravel and subsoil. A minimum of 4 inches of topsoil should be at the surface after the soil has settled. Wetland areas temporarily disturbed shall be stabilized (e.g., seeded or planted). Seed mixes and vegetation shall include only plant species native to New England and shall not include any species listed as "Invasive and Other Unacceptable Plant Species" in the "New England District Compensatory Mitigation Guidance" (see GC 24 and refer to Appendix G). This list may be updated periodically.

c. Limit compaction to the minimum needed to promote a successful seedbed; avoid a 'fluffy' seedbed, which is susceptible to erosion until the plants get established, and a compacted topsoil layer, which is counter-productive and will lead to greater erosion susceptibility down the road. Test soils for compaction. A soil probe, auger, or shovel should be able to retrieve samples of post-restoration profile. Equipment refusal shall be considered a failure of restoration, in which case the soil should be restored through deep-ripping and/or de-compaction, or other appropriate methods, and wetland hydrology must be maintained. See the BMPs at [>> State General Permits >> Permit Resources >> Restoration](http://www.nae.usace.army.mil/missions/regulatory).

d. In areas of authorized temporary disturbance, cut woody vegetation (trees, shrubs, etc.) shall be cut at or above ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.

e. Trenches shall be constructed or backfilled so that the trench does not drain waters of the U.S. (e.g., materials or methods that create a French drain effect).

16. Soil Erosion, Sediment and Turbidity Controls

a. Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, installation of sediment control barriers (i.e. silt fence, vegetated filter strips, geotextile silt fences, erosion control mixes, hay bales or other devices) downhill of all exposed areas, retention of existing vegetated buffers, application of temporary mulching during construction, and permanent seeding and stabilization shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. They shall be capable of preventing erosion; of collecting sediment, suspended and floating materials; and of filtering fine sediment.

- b. Temporary sediment control barriers shall be removed upon completion of work, but not until all disturbed areas are permanently stabilized. The sediment collected by these sediment barriers shall be removed and placed at an upland location and stabilized to prevent its later erosion into a waterway or wetland.
- c. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date .

17. Time of Year Work Windows/Restrictions. For activities where work is authorized in streams and tidal waters that causes turbidity or sediment re-suspension or other construction related disturbances, work must be conducted during the following TOY work windows (not during the TOY restrictions) unless otherwise authorized by the Corps under Category 2 review:

	<u>TOY Restriction (no work)</u>	<u>TOY Work Window (work allowed)</u>
Non-tidal waters	Oct. 01 through Jul. 14	Jul. 15 through Sep. 30
Tidal waters	Apr. 10 through Nov. 07	Nov. 08 through Apr. 09

Alternate windows authorized under Category 2 may include species specific windows recommended by the Maine Dept. of Marine Resources and/or Maine Dept. of Inland Fisheries & Wildlife.

18. Aquatic Life Movements & 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. Unless otherwise stated, activities impounding water in a stream require a PCN to ensure impacts to aquatic life species are avoided and minimized. All permanent and temporary crossings of waterbodies (e.g., streams, wetlands) shall be:
 - i. Suitably culverted, bridged, 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 culvert. Permanent and temporary crossings of wetlands shall be suitably culverted, spanned or bridged in such a manner as to preserve hydraulic and ecological connectivity between the wetlands on either side of the road.
- b. To avoid adverse impacts on aquatic organisms, the low flow channel/thalweg shall remain unobstructed during periods of low flow, except when it is necessary to perform the authorized work.
- c. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities. The activity must be constructed to withstand expected high flows. The activity must 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 preconstruction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

19. Water Quality and Coastal Zone Management

- a. Applicants must satisfy any conditions imposed by the state and EPA, where applicable, in their CWA § 401 Water Quality Certifications (WQC) for this GP, or in any Individual § 401 WQC. See Appendix E for state-specific contact information and to determine if any action is required to obtain a 401 WQC. The Corps may require additional water quality management measures to ensure that the authorized activity does not cause or contribute to a violation of water quality standards. All projects authorized by this GP shall be designed, constructed and operated to minimize or eliminate the discharge of pollutants.
- b. Applicants must satisfy any additional conditions imposed by the state in their Coastal Zone Management (CZM) Act consistency concurrences for this GP, or in any Individual CZM consistency concurrences. The Corps may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

20. Floodplains and Floodways

- a. Appropriate measures must be taken to minimize flooding to the maximum extent practicable.
- b. Activities within 100-Year Floodplains must comply with applicable Federal Emergency Management Agency (FEMA)-approved state and/or local floodplain management permitting requirements. Proponents may need to coordinate with FEMA and apply for a formal change to the flood insurance study products or forward a set of project plans and relevant technical documentation in a digital format to the Risk

Analysis Branch Chief, Mitigation Division, FEMA, Region 1, 99 High Street, Boston, Massachusetts 02110. Applicants should provide a copy of any documentation to the Corps along with the PCN.

c. Proponents may have to obtain a Flood Hazard Development Permit issued by the town. Inquiries may be directed to the municipality or to the Maine Floodplain Management Coordinator at (207) 287-8063. See <http://www.maine.gov/dacf/flood/>

21. Storage of Seasonal Structures. Seasonal or recreational structures such as pier sections, floats, aquaculture structures, 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 landward of mean high water (MHW) or ordinary high water (OHW) and not in wetlands, tidal wetlands, their substrate or on mudflats. These seasonal structures may be stored on the fixed, pile-supported portion of the structure that is waterward of MHW or OHW. Seasonal storage of structures in navigable waters, e.g., in a protected cove on a mooring, requires Corps approval and local harbormaster approval.

22. Spawning, Breeding, and Migratory Areas

a. Jurisdictional activities and impacts such as excavations, discharges of dredged or fill material, and/or suspended sediment producing activities in jurisdictional waters that provide value as fish migratory areas, fish and shellfish spawning or nursery areas, or amphibian and migratory bird breeding areas, during spawning or breeding seasons shall be avoided and minimized to the maximum extent practicable.

b. Jurisdictional activities in waters of the United States that provide value as breeding areas for migratory birds must be avoided to the maximum extent practicable. The permittee 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 permittee should contact the appropriate local office of the USFWS to determine if such “take” permits are required for a particular activity (See Appendix E).

23. Vernal Pools

a. Only vernal pools that meet the current definition of waters of the U.S. are regulated by the Corps.

b. Direct and indirect adverse effects to all vernal pools (VPs), including their envelopes and critical terrestrial habitats (VP Management Areas¹³), shall be avoided and minimized to the maximum extent practicable. Site clearing, grading, and construction activities associated with a regulated activity in the VP Management Area may cause these adverse effects to the VP.

c. The State of Maine has specific protections for vernal pools.¹⁴

d. When any regulated activities occur within 750 feet of a vernal pool, the following management practices must be followed for all work within any VP Management Area (750’ of a VP’s edge) *in order to qualify for Category I*:

i. No disturbance within the VP Depression or VP Envelope (area within 100 feet of the VP Depression’s edge)¹⁵;

ii. Maintain a minimum of 75% of the Critical Terrestrial Habitat (area within 100-750 feet of the VP Depression’s edge) as unfragmented forest with at least a partly-closed canopy of overstory trees to provide shade, deep litter and woody debris;

iii. Maintain or restore forest corridors connecting wetlands and significant vernal pools;

iv. Minimize forest floor disturbance; and

v. Maintain native understory vegetation and downed woody debris.

¹³ The Corps VP Management Area, which includes the VP and a 750’ radius from the VP’s edge, is defined at Appendix A, Endnote 5.

¹⁴ Appendix G, 10(a)-(d) provides links to the state’s Significant Wildlife Habitat regulations and references that provide impact minimization measures to reference when designing projects.

¹⁵ The no disturbance requirement in the VP envelope [see (b)(i)(1)], and (b)(i)(2), do not apply to temporary impacts associated with construction mats in previously disturbed areas of existing utility project (e.g., transmission lines, gas pipelines) or linear transportation project (e.g., roads, highways, railways, trails, airport runways and taxiways) right-of-ways provided there is a Vegetation Management Plan that avoids, minimizes and mitigates impacts to aquatic resources.

vi. Cape Cod style-curbings or no curbings options shall be used on new roads to facilitate amphibian passage. (Reference Appendix G)

e. A PCN is required for any regulated activity within 750' of a vernal pool when all work within the VP Management Area does not comply with the Category 1 requirements in (d) above. Information on directional buffers in accordance with the VP Directional Buffer Guidance document may be provided in order to demonstrate minimal impact and avoid compensation requirements (Reference Appendix G). Conservation of the un-impacted area within the VP Management Area will often be required.

f. GC 2 requires applicants to delineate or approximately identify on the project plans all waters of the U.S., which contain vernal pools.

g. GC 23(b-d) do not apply to projects that are within a municipality and meet the provisions of a Corps-approved VP Special Area Management Plan (VP SAMP) and are otherwise eligible for self-verification.

24. Invasive and Other Unacceptable Species¹⁶

a. The introduction or spread of invasive or other unacceptable plant or animal species on the project site or areas adjacent to the project site caused by the site work shall be avoided to the maximum extent practicable. For example, construction mats and equipment shall be thoroughly cleaned and free of vegetation and soil before and after use. The introduction or spread of invasive plant or animal species on the project site caused by the site work shall be controlled.

b. No cultivars, invasive or other unacceptable plant species may be used for any mitigation, bioengineering, vegetative bank stabilization or any other work authorized by this GP. However, non-native species and cultivars may be used when it is appropriate and specified in a written verification, such as using *Secale cereale* (Annual Rye) to quickly stabilize a site. All PCNs should explain the reason for using non-native species or cultivars.

25. Programmatic Consultations or Agreements. The Corps requirements to comply with Section 106 of the NHPA, Section 7 of the Endangered Species Act or Essential Fish Habitat conservation under the Magnuson-Stevens Act may be satisfied by a Programmatic Agreement with the Corps, New England District or another federal action agency. Any Corps, New England District Programmatic Agreements will be available on our website.

26. Permit On Site. The permittee shall ensure that a copy of this GP and any accompanying authorization letter with attached plans are at the site of the work authorized by this GP whenever work is being performed and that all construction personnel performing work which may affect waters of the U.S. are aware of its terms and conditions. The entire permit authorization shall be made a part of any and all contracts and subcontracts for work that affects areas of Corps jurisdiction at the site of the work authorized by this GP. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means this entire GP and the authorization letter (including its drawings, plans, appendices and other attachments) and also includes 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 subcontract. Although the permittee may assign various aspects of the work to different contractors or subcontractors, all contractors and subcontractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire GP authorization, and no contract or subcontract shall require or allow unauthorized work in areas of Corps jurisdiction.

¹⁶ For the purposes of this GP, plant species that are considered invasive and unacceptable are provided in Appendix G "Invasive and other Unacceptable Plant Species" of our document "Compensatory Mitigation Guidance" at www.nae.usace.army.mil/missions/regulatory >> Mitigation. Chapter 4(e) Planting is also particularly relevant. The June 2009 "Corps of Engineers Invasive Species Policy" provides policy, goals and objectives and is located at www.nae.usace.army.mil/missions/regulatory >> Invasive Species. Additional information can be found at: www.eddmaps.org/ipane.

27. Self-Verification Notification Form (SVNF). Permittees must complete and submit the SVNF provided at Appendix B to the Corps for work authorized by this GP unless otherwise noted in Appendix A. **NOTE: A copy of a state permit application form may be an acceptable surrogate for the SVNF provided either form used also include plans and an Official Species List of federally listed threatened or endangered species.**

28. Inspections. The permittee shall allow the Corps to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of this GP and any written verification. The Corps may also require post-construction engineering drawings for completed work, post-dredging survey drawings for any dredging work, or other post-construction reports. To facilitate these inspections, the permittee shall complete and return to the Corps the following forms:

- For Category 1/Self-Verification: The SVNF (see Appendix B).
- For Category 2/PCN: The a) Work-Start Notification Form and b) Compliance Certification Form, when either is provided with the authorization letter.

29. Maintenance

a. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable general conditions and activity-specific conditions to a written verification.

b. The requirement in (a) above does not include maintenance of dredging projects. Each maintenance dredging event exceeding the self-verification limits requires a new PCN unless an unexpired, written PCN or other Corps authorization specifies that the permittee may “dredge and maintain” an area for a particular time period. Self-verification or PCN maintenance dredging includes only those areas and depths previously authorized and actually dredged. Maintenance dredging with ocean or open water disposal will always require a PCN and at least Category 2 review.

c. Some maintenance activities may not be subject to regulation under Section 404 in accordance with 33 CFR 323.4(a)(2). Refer to Appendix A, Endnote 7.

30. Property Rights. This GP does not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations.

31. Transfer of GP Verifications. When the structures or work authorized by this GP are still in existence at the time the property is transferred, the terms and conditions of this GP, 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 verification, the permittee may transfer the GP verification to the new owner by submitting a letter to the Corps (see Appendix E for address) to validate the transfer. A copy of the GP verification must be attached to the letter, and *the letter must contain the new owner's contact information and the following statement and signature:*

“When the structures or work authorized by this GP are still in existence at the time the property is transferred, the terms and conditions of this GP, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this GP and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

32. Modification, Suspension, and Revocation. Any work authorized under this GP by self-verification or PCN may be either modified, suspended, or revoked, in whole or in part, pursuant to the policies and procedures of 33 CFR 325.7. Any such action shall not be the basis for any claim for damages against the U.S.

33. Special Conditions. The Corps may independently, or at the request of the federal resource agencies, impose other special conditions on a project authorized pursuant to this GP 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 terms and conditions of the authorization, including special conditions, constitutes a permit violation and may subject the permittee to criminal, civil or administrative penalties and/or an ordered restoration.

34. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under this GP and subsequently discovers that it has relied on false, incomplete or inaccurate information provided by the permittee, the Corps may determine that the GP authorization is not valid; modify, suspend or revoke the authorization; and the U.S. Government may institute legal proceedings.

35. Abandonment. If the permittee decides to abandon the activity authorized under this GP, unless such abandonment is merely the transfer of property to a third party, he/she may be required to restore the area to the satisfaction of the Corps.

36. Enforcement cases. This GP does not apply to any existing or proposed activity in Corps jurisdiction associated with an ongoing Corps or EPA enforcement action, until such time as the enforcement action is resolved or the Corps or EPA, as appropriate, determines that the activity may proceed independently without compromising the enforcement action.

37. Duration of Authorization. This GP expires on October 12, 2020. Activities authorized under this GP that have commenced (i.e., are under construction) or are under contract to commence before this GP expires will have until October 12, 2021 to complete the activity under the terms and conditions of the current GP.

38. Previously Authorized Activities.

a. Projects that have received authorization (Category 1 or 2) from the Corps and that were completed under the previous PGPs, nationwide permits, regional general permits or letters of permission, shall remain authorized.

b. Activities authorized pursuant to 33 CFR Part 330.3 ("Activities occurring before certain dates") are not affected by this GP.

c. Any work not commenced nor completed that was authorized in a written letter from the Corps under the GP in effect between October 12, 2010 and October 12, 2015 remains authorized subject to the terms and general conditions of this GP along with any special conditions in the authorizing written letter. Exception – if previously authorized work is not commenced and a new federally listed threatened or endangered species could be affected, the Corps must consult with the Service(s) prior to re-authorizing the work under this GP. Requests for re-authorization must include an updated Official Species list. To request an Official Species List, refer to the instructions in Appendix D.

39. Discretionary Authority. Notwithstanding compliance with the terms and conditions of this permit, the Corps retains discretionary authority to require Category 2 or Individual Permit review based on concerns for the aquatic environment or for any other factor of the public interest [33 CFR 320.4(a)]. This authority is invoked on a case-by-case basis whenever the Corps determines that the potential consequences of the proposal warrant a higher level of review based on the concerns stated above. This authority may be invoked for projects that may contribute to cumulative environmental impacts that are more than minimal or if there is a special resource or concern associated with a particular project that is not already covered by the remaining conditions of the GP and that warrants greater review. Whenever the Corps notifies an applicant that an Individual Permit may be required, the project is not authorized under this GP and no work may be conducted until an Individual Permit is obtained or until the Corps notifies the applicant that further review has demonstrated that the work may proceed under this GP.

40. St. John/St. Croix Rivers. Work within the Saint John and Saint Croix River basins that requires approval of the International Joint Commission is not eligible for Category 1 and a PCN to the Corps is required if any temporary or permanent use, obstruction or diversion of international boundary waters could affect the natural

flow or levels of waters on the Canadian side of the line; or if any construction or maintenance of remedial works, protective works, dams, or other obstructions in waters downstream from boundary waters could raise the natural level of water on the Canadian side of the boundary.

41. National Lands. Activities that impinge upon the value of any National Wildlife Refuge, National Forest, National Marine Sanctuary, National Park or any other area administered by the National Park Service, U.S. Fish and Wildlife Service (USFWS) or U.S. Forest Service are not eligible for Category 1 and require a PCN.

42. Essential Fish Habitat (EFH). Any work in the following rivers and streams, including all tributaries to the extent that they are currently or were historically accessible for salmon migration, shall not be authorized under Category 1 of the GP and must be screened for potential impacts to EFH (see Appendix G for more information).

Androscoggin River	Aroostook River	Boyden River	Dennys River
Ducktrap River	East Machias River	Hobart Stream	Kennebec River
Machias River	Narraguagus River	Orland River	Passagassawaukeag River
Patten Stream	Penobscot River	Pleasant River	Presumpscot River
Saco River	Sheepscot River	St. Croix River	Tunk Stream
			Union River

The above does not apply to the following activities which may qualify for Category 1 work:

- Exploratory drilling and borings for bridges.
- Moorings (see Appendix A, Page 28 for Category 1 thresholds and requirements)
- Structures, floats & lifts (see Appendix A, Page 29 for Category 1 thresholds and requirements)
- Other activities specified in a programmatic agreement with NMFS.

43. Work Site Restoration

a. 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.

b. Upon completion of construction, all disturbed wetland areas (the disturbance of these areas must be authorized) shall be properly stabilized. Any seed mix shall contain only plant species native to New England and shall not contain any species listed in the "Invasive and Other Unacceptable Plant Species" Appendix in the "New England District Compensatory Mitigation Guidance" (see GC 24 and refer to Appendix G). This list may be updated periodically.

c. In areas of authorized temporary disturbance, if trees are cut they shall be cut at ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.

44. Bank Stabilization

a. Projects involving construction or reconstruction/maintenance of bank stabilization structures within Corps jurisdiction shall be designed to minimize environmental effects, effects to neighboring properties, scour, etc. to the maximum extent practicable.

b. Project proponents must design and construct bank stabilization projects using this sequential minimization process: avoidance of aquatic resource impacts, diversion of overland flow, vegetative stabilization, stone-sloped surfaces, and walls/bulkheads. Vertical walls/bulkheads shall only be used in situations where reflected wave energy can be tolerated.

c. Inland Water bank stabilization activities necessary for erosion prevention must meet all of the following criteria: i) No material is placed in excess of the minimum needed for erosion protection; ii) The activity is no more than 500 feet in total length along the bank(s); iii) The activity will not exceed an average of one cubic yard per running foot placed along the bank below the plane of the ordinary high water mark; iv) Structures angled steeper than 1H:1V and any material other than angular or sub-angular stone or fiber roll, revetments require at least a Category 2 review; v) The activity does not involve discharges of dredged or fill

material into special aquatic sites; vi) No material is of the type, or is placed in any location, or in any manner, to impair surface water flow into or out of any water of the U.S.; vii) No material is placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas); and viii) The activity is not a stream channelization activity.

d. Bank stabilization activities in tidal waters are provided at Appendix A, Page 30 & 31. Direct impacts in tidal waters from contiguous bank stabilization projects in excess of 200 linear feet (Applicant or Applicant + Abutters combined) must undergo Category 2 review.

45. Stream Work and Crossings & Wetland Crossings

Notes:

a. For *Stream Work and Crossings* below, conditions (a) and (b) apply to Inland Waters and Wetlands (see Appendix A, Page 1 for definition) and Navigable Waters (see Appendix A, Page 27 for definition). Conditions (c)-(l) below only apply to Inland Waters and Wetlands that are streams. All new and replacement crossings in Navigable Waters require an application to the Corps and at least a Category 2 review.

b. In-stream work in a watershed occupied by listed Atlantic salmon, Atlantic sturgeon, or shortnose sturgeon [see GC 8(b)] and some stream work such as crossings on EFH waters (see GC 42) is not eligible for Category 1.

c. “High-Quality Stream Segments” are shown at www.maine.gov/dep/gis/datamaps and may be useful in evaluating impacts to fisheries. GIS shape files are under “Other Google Earth Interactive Maps” and PDFs by county are under “DEP GIS Maps.” See Appendix E for more state contact information.

Conditions for Stream Work and Crossings:

a. All permanent crossings of rivers, streams, brooks, etc. (hereon referred to as “streams”) shall be suitably culverted, bridged, or otherwise designed to i) withstand and to prevent the restriction of high flows to qualify for Category 1, and ii) not obstruct the movement of or not 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, beyond the actual duration of construction unless the activity’s primary purpose is to impound water to qualify for Category 1 or 2. (*NOTE: Areas of fill and/or cofferdams must be included in total waterway/wetlands impacts to determine applicability of this GP.*)

b. Any work that temporarily or permanently impacts upstream or downstream flood conditions, or permanently impacts wetlands in excess of Category 1 thresholds, must be reviewed at least under Category 2. See the documents referenced in Appendix G, 8(c) and (d) for guidance.

c. New Stream Crossings. For new stream crossings to qualify for Category 1:

i. Must ensure compliance with GC 45(a) and GC 45(b) above.

ii. Shall be designed and constructed in accordance with the Corps General Stream Crossing Standards provided on Page 19 and the stream simulation document listed at Appendix G, 8(a).

d. Replacement Stream Crossings. For replacement stream crossings to qualify for Category 1:

i. Must ensure compliance with GC 45(a) and GC 45(b) above.

ii. Shall be designed and constructed in accordance with the Corps General Stream Crossing Standards provided on Page 19 and the stream simulation document listed at Appendix G, 8(a).

e. Culvert Extensions. Culvert extensions on culverts that do not meet the Corps General Stream Crossing Standards do not qualify for Category 1 and require an application to the Corps and at least Category 2 review.

f. Temporary Stream Crossings.

Note: The General Stream Crossing Standards don’t apply to temporary stream crossings.

i. Temporary stream crossings or cofferdams shall be used for equipment access across streams [see Appendix G, 8(e)]. Note: Areas of fill and/or cofferdams must be included in total waterway/wetlands impacts to determine the review category in Appendix A.

ii. Temporary stream crossings shall be removed within 180 days to qualify for Category 1.

iii. Temporary stream crossings that are not spans¹⁷ (typically culverts) must be designed in accordance with 1-6 below to qualify for Category 1. Category 2 applications should include information demonstrating 2-6 below:

1. Installed and removed during the low flow period specified in GC 45(l) below.
2. Placed on geotextile fabric or other material where practicable to ensure restoration to the original grade. Soil may not be used to construct or stabilize these structures and rock must be large enough to allow for easy removal without disrupting the streambed.
3. Designed and maintained to withstand and pass high flows. Water height should be no higher than the top of the culvert's inlet. A minimum culvert diameter of two feet is required to pass debris. Culverts must be aligned to prevent bank erosion or streambed scour.
4. Equipped with energy dissipating devices installed downstream if necessary to prevent scour.
5. Designed and maintained to prevent soil from entering the waterbody.
6. Removed upon the completion of work. Impacts to the streambed or banks requires restoration to their original condition using stream simulation methods¹⁸.

g. Slip Lining. Work using slip lining (retrofitting an existing culvert by inserting a smaller diameter pipe), invert lining, or resulting in decreased diameter, does not qualify for Category 1, either as new work or maintenance activities.

h. Work in Flowing Waters. To qualify for Category 1, no unconfined fill [see GC 14(b)] or excavation in flowing waters is allowed. To accomplish this:

i. Bank stabilization work below ordinary high water (OHW) shall utilize erosion controls such as inflatable cofferdams, jersey barrier, silt screen, turbidity curtain, etc. where practicable to prevent sediment input to the stream and to minimize turbidity and sedimentation impacts for sensitive life stages. Bank stabilization above OHW must utilize erosion controls.

ii. Management techniques such as temporary flume pipes, culverts, cofferdams, etc. must be used to maintain normal flows within the stream boundary's confines, or water diversions may be used immediately up and downstream of the work footprint (see Appendix A, Endnote 6) or work must be performed in the dry under no flow conditions, or under very low flow conditions following the practices in GC 45(a).

i. Minimization. In order to make the Category 2 review process more efficient and result in a faster decision, new and replacement stream crossings should be designed using the least intrusive and environmentally damaging method following this sequential minimization process: 1) spans with no stream impacts, 2) spans with stream impacts, and 3) embedded culverts with stream simulation or low-slope design.

j. Maintenance Requirements. The permittee shall maintain the work authorized herein in good condition and in conformance with the terms and general conditions of this permit to facilitate aquatic life passage as stated in GC 45(a). Culverts that develop "hanging" inlets or outlets, result in bed washout, or a stream that doesn't match the characteristics of the substrate in the natural stream channel such as mobility, slope, stability confinement will require maintenance or repair to comply with this GC. This does not apply to GC 45(f) above.

k. Maintenance and Replacement Information. An existing stream crossing must be authorized and in compliance with all conditions of its authorization(s) to qualify for maintenance not subject to regulation. See Appendix A, Endnote 7. A non-serviceable crossing is not eligible for maintenance and is therefore considered as a replacement crossing [see GC 45(d)].

l. Work Window. For projects that otherwise meet the terms of Category 1, in-stream construction work shall be conducted during the low flow period July 15 – September 30 in any year. Projects that are not to be conducted during that time period are ineligible for Category 1 and shall be screened pursuant to Category 2, regardless of the waterway and wetland fill and/or impact area.

Corps General Stream Crossing Standards (required for Category 1; recommended for Category 2):

- a. Culverts must be embedded:

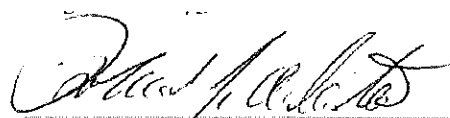
¹⁷ For the purposes of this GP, spans are bridges, three-sided box culverts, open-bottom culverts or arches that span the stream with footings landward of bankfull width.

¹⁸ Design and construction shall be in accordance with the stream simulation document listed at Appendix G, 8(a).

- ≥ 2 feet for box culverts and other culverts with smooth internal walls,
 - ≥ 1 foot for corrugated pipe arches
 - ≥ 1 foot and at least 25 percent for corrugated round pipe culverts
- b. **For new crossings**, spans¹⁷ are required to avoid or cause minimal disruption to the streambed and to meet the requirements of General Condition 45(a) and 45(b). Footings and abutments must be landward of 1.2 times bankfull width. To the greatest extent practicable, work in the stream shall be minimized, and design and construction shall allow the streambed's natural structure and integrity to remain intact. Any fill or excavation of the streambed below bankfull width other than footings, support pilings, or work specified in 45(h)ii requires Category 2 review and, unless demonstrated otherwise, stream simulation¹⁸ to establish substrate and banks in the span structure and work area as specified in (d) and (e) below.
- c. **For replacement crossings**, spans¹⁷ are required to meet the requirements of General Condition 45(a) and 45(b). Footings and abutments shall be landward of 1.2 times bankfull width. Unless demonstrated otherwise, stream simulation¹⁸ is required to establish substrate and banks in the span structure and work area as specified in (d) and (e) below.
- d. Crossings must have a natural bottom substrate within the structure matching the characteristics of the substrate in the natural stream channel and the banks (mobility, slope, stability, confinement, grain and rock size) at the time of construction and over time as the structure has had the opportunity to pass significant flood events. To allow terrestrial passage for wildlife and prevent undermining the footings, crossings shall have a bank on both sides of the stream matching the horizontal profile of the existing stream and banks¹⁸. Note: Installation of substrate material within smaller culverts may not be safe or practicable. In these cases, it may be necessary to allow for natural deposition and bed development unless alternative methods are identified.
- e. Crossings must be designed and constructed¹⁸ with appropriate bed forms and streambed characteristics so that water depths and velocities are comparable to those found in the natural channel at a variety of flows. In order to provide appropriate water depths and velocities at a variety of flows and especially low flows, it is usually necessary to reconstruct the streambed or preserve the natural channel within the structure. Otherwise, the width of the structure needed to accommodate higher flows will create conditions that are too shallow at low flows. The grain and rock size, and arrangement of streambed materials within the structure should be in accordance with (d) above. Flows could go subsurface within the structure if only large material is used without smaller material filling the voids.

Conditions for Wetland Crossings:

- a. All temporary and permanent crossings of wetlands shall be suitably culverted, bridged, or otherwise designed to: i) Withstand and prevent the restriction of high flows, ii) Not obstruct the movement of or not substantially disrupt the necessary life-cycle movements of those species of aquatic life indigenous to the wetland, including those species that normally migrate through the area, beyond the actual duration of construction unless the activity's primary purpose is to impound water. See Appendix E for the Maine DEP's crossing standards.
- b. To qualify for Category 1, new and replacement wetland crossings that are permanent shall be culverted, spanned or bridged in such a manner as to preserve hydraulic and ecological connectivity, at its present level, between the wetlands on either side of the road. To meet this requirement, we recommend that culverts, spans or bridges be placed at least every 50 feet with an opening at least 2 feet high and 3 feet wide at ground level where practicable. Closed bottom culverts shall be embedded at least 6 inches with a natural bottom.
- c. In the case of non-compliance, the permittee shall take necessary measures to correct wetland damage due to lack of hydraulic and ecological connectivity.
- d. Any work that results in flooding, results in impacts to wetlands on either side of the wetland crossing in excess of Category 1 thresholds, or impacts wetland drainage from the upgradient side of the wetland crossing does not qualify for Category 1.



Robert J. Desista
Deputy Chief, Regulatory Division
For DISTRICT ENGINEER

DATE

10/13/15

APPENDIX A: DEFINITION OF CATEGORIES

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A. INLAND WATERS AND WETLANDS	Inland Waters and Wetlands: Waters that are regulated under Section 404 of the Clean Water Act, including rivers, streams, lakes, ponds and wetlands, and <i>excluding Section 10 Navigable Waters of the U.S. (tidal and freshwater)</i> . The jurisdictional limits are the ordinary high water (OHW) mark in the absence of adjacent wetlands, beyond the OHW mark to the limit of adjacent wetlands when adjacent wetlands are present, and the wetland limit when only wetlands are present. For the purposes of this GP and designated activities, fill placed in the area between the mean high water (MHW) and the high tide line (HTL), and in the bordering and contiguous wetlands ¹ to tidal waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on page 27 below.) Projects not meeting Category 1 require an application for review as a Category 2 or Individual Permit project. All Category 1 and 2 projects must comply with all of this GP's applicable terms (Pages 1 – 4) and General Conditions (Pages 5–20).	
ACTIVITY	CATEGORY 1 Self-Verification Eligible (SVNF Required)	CATEGORY 2 (PCN Required)
1. Repair, Replacement, Expansion, and Maintenance of Authorized Structures and Fills	Repair or maintenance of existing, currently serviceable, authorized fills with no expansion or change in use: • Conditions of the original authorization apply. • Minor deviations in fill design allowed.⁷ • The repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events is authorized, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. • No effect on federally listed endangered or threatened species or critical habitat.	Replacement of non-serviceable fills, or repair/maintenance of serviceable fill, with expansion <3 acres, or with a change in use.
2. Moorings	NA – moorings in non-navigable inland waters are not subject to Corps jurisdiction. Note: Moorings placed in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on Page 28 below.)	NA
3. Structures, Floats & Lifts	For solid fill or crib supported structures on inland waters, <15,000 square feet (SF) of waterway and/or wetland fill, associated secondary impacts ² , and temporary fills. • No effect on federally listed endangered or threatened species or critical habitat. • Note: Temporary or permanent structures placed in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on page 29 below.	1. Work not eligible for Category 1 2. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated).
4. Aids to Navigation and Temporary Recreational Structures	NA - this activity in non-navigable inland waters is not subject to Corps jurisdiction. Note: Aids to Navigation and other structures placed in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on page 30 below.)	NA

5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation	1. For regulated discharges associated with excavation, and disposal <15,000 SF inland waterway and/or wetland impacts. 2. The activity does not occur in navigable waters of the U.S. 3. Stream channelization, relocation or loss of streambed including impoundments or discharge of tailings into streams does not occur. 4. No effect on federally listed endangered or threatened species or critical habitat.	1. Work not eligible for Category 1 2. ≥15,000 SF to <3 acres of inland waters.
6. Discharges of Dredged or Fill Material Incident to the Construction of Bridges	NA - For discharges incidental to the construction of bridges in inland waters of the U.S. refer to Activity 23 (Stream and Wetland Crossings) and GC 45. Note: Discharges of Dredged or Fill Material Incident to the Construction of Bridges in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters on page 30 below.)	NA
7. Bank and Shoreline Stabilization	Inland bank stabilization <500 FT long and ≤1 CY of fill per linear foot below OHW, provided: • ≤1 cubic yard of fill per linear foot placed along the bank waterward of ordinary high water. • Work complies with the GCs (GC 44 in particular), including: ◦ No structures angled steeper than 1H:1V allowed. Only rough-faced stone or fiber roll revetments allowed. ◦ No in-stream work involving fill or excavation in flowing waters (see GC 45(h)). • In-water work limited to Jul 15 – Sep 30. • No work in vernal pools⁵ or SAS³. • No effect on federally listed endangered or threatened species or critical habitat.	Work not eligible for Category 1
8. Residential, Commercial, Industrial, and Institutional Developments, and Recreational Facilities	1. <15,000 SF of inland waterway and/or wetland fill and associated secondary impacts² (e.g., areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill, and regulated discharges associated with excavation. Construction mats are considered as fill. [See GC 14] <u>Provided:</u> • Historic fill + proposed impact area <15,000 SF complies with GC 5, Single and Complete Projects. • No work in special aquatic sites (SAS)⁴ other than wetlands. • No effect on federally listed endangered or threatened species or critical habitat. 2. For work in Vernal Pool (VP) Management Areas (includes VPs)⁵:	1. Work not eligible for Category 1. 2. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation. 3. <i>Mechanical clearing without grubbing or other soil disturbance >3 acres as a secondary impact may still be eligible for Category 2 at the discretion of the Corps.</i> See GC 2 and Appendix C for wetland delineation

	• See GC 23 and Appendix C for VP delineation requirements. • See GC 23 to determine if work qualifies for Category 1 or 2. • See Appendix G for VP documents providing mitigation guidance.	requirements.
9. Utility Line Activities	1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts², and temporary fills. 2. The activity does not occur in, over, or under navigable waters of the U.S. 3. Intake structures that are dry hydrants used exclusively for firefighting activities with no stream impoundments. 4. There is no permanent change in pre-construction contours in waters of the U.S. 5. Material resulting from trench excavation is temporarily side cast into waters of the U.S. for ≤ 3 months and is placed in such a manner that it is not dispersed by currents or other forces. 6. The utility line is placed within and does not run a) parallel to, or b) along a streambed. 7. Stream channelization, relocation or loss of streambed including impoundments does not occur. 8. No effect on federally listed endangered or threatened species or critical habitat. 9. There is no discharge in SAS other than non-tidal wetlands. 10. Construction mats⁴ of any area necessary to conduct activities that were previously authorized, authorized under Category 1, or not subject to regulation (see Endnote 7). Authorized construction mats must be in place for <3 months, removed immediately upon work completion, and the wetlands must be restored (see GC 43). 11. Stream crossings must comply with GC 17.	1. Work not eligible for Category 1 2. $\geq 15,000$ SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation. 3. <i>Mechanical clearing without grubbing or other soil disturbance > 3 acres as a secondary impact may still be eligible for Category 2 at the discretion of the Corps.</i>
10. Linear Transportation Projects (not including stream crossings) For stream crossings, refer to Activity 23	1. <15,000 SF of inland waterway and/or wetland fill associated secondary impacts (e.g., areas drained, flooded, fragmented, mechanically cleared or excavated). Fill area includes all temporary and permanent fill, and regulated discharges associated with excavation. Construction mats are considered fill. (See GC 14.) Provided: • Historic fill + proposed impact area <15,000 SF and complies with GC 5 single and complete projects. • No work in special aquatic sites (SAS) other than wetlands. 2. Construction mats⁴ of any area necessary to conduct activities that were previously authorized, authorized under Category 1, or not subject to regulation (see Endnote 7). Authorized construction mats must be in place for <3 months, removed immediately upon work completion, and the wetlands must be restored (see GC 43). 3. No effect on federally listed endangered or threatened species or critical habitat.	1. $\geq 15,000$ SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation. 2. <i>Mechanical clearing without grubbing or other soil disturbance > 3 acres as a secondary impact may still be eligible for Category 2 at the discretion of the Corps.</i>

11. Mining Activities	1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. The activity does not occur in navigable waters of the U.S. 3. Stream channelization, relocation or loss of streambed including impoundments or discharge of tailings into streams does not occur. 4. No effect on federally listed endangered or threatened species or critical habitat.	1. Work not eligible for Category 1. 2. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation.
12. Boat Ramps	1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. No effect on federally listed endangered or threatened species or critical habitat.	1. Work not eligible for Category 1 2. >15,000 SF and < 3 acres of impact.
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects	<i>For land-based facilities:</i> 1. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. Stream channelization, relocation or loss of streambed including impoundments does not occur. 3. No effect on federally listed endangered or threatened species or critical habitat. <i>For water-based facilities and hydropower projects:</i> No new facilities are eligible.	<i>For land-based activities:</i> 1. Work not eligible for Category 1. 2. >15,000 SF and < 3 acres impact. 3. <i>Mechanical clearing without grubbing or other soil disturbance > 3 acres as a secondary impact may still be eligible for Category 2 at the discretion of the Corps.</i> <i>For water-based facilities and hydropower projects:</i> > 3 acres of impact will require an IP.
14. Reshaping Existing Drainage Ditches & Mosquito Management	Not Applicable	Not Applicable
15. Oil Spill and Hazardous Material Cleanup	Jurisdictional activities required for the containment and cleanup of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) provided that the work is done in accordance with the Spill Control and Countermeasure Plan required by 40 CFR 112.3 or any existing state contingency plan and provided that the Regional Response Team (if one exists in the area) concurs with the proposed containment and cleanup action. SAS³ must typically be restored in place at the same elevation. <i>Note: SVN^F or a surrogate state reporting form may be submitted after the fact.</i>	Work not eligible for Category 1

16. Cleanup of Hazardous and toxic waste	Specific jurisdictional activities to effect 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. SAS should be restored in place at the same elevation. • <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. • No stream channelization, relocation or loss of streambed occurs. • The project does not involve establishing new disposal sites or expanding existing sites used for the disposal of hazardous or toxic waste. • No effect on federally listed endangered or threatened species or critical habitat.	Work not eligible for Category 1
17. Scientific Measurements Devices	1. Scientific measurement devices whose purpose is to measure and record scientific data, such as staff gages, water recording devices, water quality testing and improvement devices, and similar structures. This excludes any biological sampling devices. Structures may not restrict or concentrate movement of aquatic organisms. 2. No effect on federally listed endangered or threatened species or critical habitat.	Work not eligible for Category 1
18. Survey Activities	1. Jurisdictional survey activities, such as core sampling, seismic exploratory operations, plugging of seismic shot holes and other exploratory-type bore holes, exploratory trenching, soil surveys, sampling, and historic resources surveys (but not recovery). Exploratory trenches must be restored in accordance with GC 43. The construction of temporary pads is authorized provided the discharge doesn't exceed 25 CY. This doesn't authorize permanent structures or the drilling and the discharge of excavated material from test wells for oil and gas exploration (the plugging of such wells is authorized). 2. No effect on federally listed endangered or threatened species or critical habitat.	Work not eligible for Category 1
19. Agricultural Activities	1. For those activities subject to Corps jurisdiction¹⁶, <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. 2. No stream channelization, relocation, loss of streambed, or farm ponds in streams. 3. No effect on federally listed endangered or threatened species or critical habitat.	1. ≥15,000 SF to <3 acres of inland waterway and/or wetland fill and associated secondary impacts (e.g., areas drained, flooded, fragmented, or excavated). Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation. 2. > 3 acres of impact will require an IP.

20. Fish and Wildlife Harvesting, Enhancement and Attraction Devices and Activities	NA - this activity in non-navigable inland waters, if not involving a discharge of dredged or fill material, is not subject to Corps jurisdiction. Note: Related structures placed in freshwater navigable waters (e.g. the upper Penobscot or Kennebec Rivers) are reviewed in the Navigable Waters section. (See B. Navigable Waters on Page 33 below.)	Not Applicable
21. Habitat Restoration, Establishment and Enhancement Activities	<15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. - The activity is supported in writing by a local, state, or non-Corps Federal environmental agency. Water impoundments require PCN. - No conversion of i) a stream to wetland or vice versa, wetland to a pond or uplands, and ii) one wetland type to another. - No dam removal. - No effect on federally listed endangered or threatened species or critical habitat.	- Work not eligible for Category 1 - Aquatic habitat restoration, establishment, and enhancement of wetlands and riparian areas and the restoration and enhancement of streams and other open waters with impacts of any area $\geq$ 15,000 SF, provided those activities result in net increase in overall aquatic resource functions and services.⁸
22. Previously Authorized Activities	Any work not commenced nor completed that was authorized in a written letter from the Corps under the GP in effect between October 12, 2010 and October 12, 2015. The terms and general conditions of this GP apply along with any special conditions in the written authorization.	
23. Stream & Wetland Crossings	- River, stream and brook work and crossings: - Must comply with GC 45 in particular, including: - No slip lining [see GC 45 (g)]. - No in-stream work involving fill or excavation in flowing waters [see GC 45(h)]. - In-stream work limited to Jul 15 – Sep 30 [see GC 45 (i)]. - No work in riffles and pools³. - No stream relocations. - No dams or dikes⁶. - No effect on federally listed endangered or threatened species or critical habitat. <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. - Wetland crossings must comply with the particularly relevant GC 45.	Work not eligible for Category 1
24. Aquaculture (freshwater)	For land based installations, <15,000 SF of inland waterway and/or wetland fill, associated secondary impacts, and temporary impacts. - In-stream/in-water work limited to Jul 15 – Sep 30. - No effect on federally listed endangered or threatened species or critical habitat. Note: Related structures placed in freshwater navigable waters are reviewed in the Navigable Waters section. (See B. Navigable Waters, below.)	Work not eligible for Category 1

B. NAVIGABLE WATERS	Navigable Waters of the United States: Waters that are subject to the ebb and flow of the tide and/or the tidal and non-tidal portions of the Federally designated navigable waters (the Penobscot River, Kennebec River, and Lake Umbagog) (Section 10 Rivers and Harbors Act of 1899). The jurisdictional limits are the mean high water (MHW) line in tidal waters and the ordinary high water (OHW) mark in non-tidal portions of the federally designated navigable rivers. For the purposes of this GP, fill placed in the area between the mean high water (MHW) and the high tide line (HTL), and in the bordering and contiguous wetlands¹ to tidal waters are also reviewed in this Navigable Waters section. Projects not meeting Category 1 require an application for review as a Category 2 or Individual Permit project. All Category 1 and 2 projects must comply with all of this GP's applicable terms (Pages 1 - 4) and General Conditions (Pages 5 - 20).				
ACTIVITY 1. Repair, Replacement, Expansion, and Maintenance of Authorized (or grandfathered) Structures and Fills	<table border="1"> <thead> <tr> <th data-bbox="386 1024 938 1711"> CATEGORY 1 Self-Verification Eligible (SVNF Required) </th><th data-bbox="386 128 938 1024"> CATEGORY 2 (PCN Required) </th></tr> </thead> <tbody> <tr> <td data-bbox="938 1024 1435 1711"> 1. Repair, replacement in-kind, or maintenance⁷ of existing, currently serviceable⁷, authorized structures or fills: • All work is to be conducted in-the-dry, during low water. • Conditions of the original authorization apply. • No substantial expansion or change in use. • No new fill in SAS³. • Must be rebuilt in same footprint, however minor deviations in structure design allowed⁷. • The repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events is authorized, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. </td><td data-bbox="938 128 1435 1024"> 1. Replacement of non-serviceable structures and fills or repair/maintenance of serviceable structures or fills, with fill, replacement or expansion <1 acre, or with a change in use. 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts. Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF. 3. Standard Pile Driving Conditions. Work involving piles shall adhere to one of the four methods below: • Piles installed in-the-dry during low water or in-water between Nov. 8th - Apr. 9th, or • Must be drilled and pinned to ledge, or • Vibratory hammers used to install any size and quantity of wood, concrete or steel piles, or • Impact hammers limited to one hammer and <50 piles installed/day with the following: wood piles of any size, concrete piles ≤18-inches diameter, steel piles <12-inches diameter if the hammer is ≤3000 lbs and a wood cushion is used between the hammer and steel pile, and • For the methods above: ◦ In-water noise levels shall not exceed >187dB cSEL re 1μPa or 206dB peak re 1μPa at a distance >10m from the pile being installed, and ◦ In-water noise levels >150dB peak re 1μPa shall not exceed 12 consecutive hours on any given day and a 12 hour recovery period (i.e., in-water noise below 150dB peak re 1μPa) must be provided between work days. • Existing derelict, degraded or abandoned piles in the project area that are affected by project activities should be removed and properly disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands, their substrate or mudflats. </td></tr> </tbody> </table>	CATEGORY 1 Self-Verification Eligible (SVNF Required)	CATEGORY 2 (PCN Required)	1. Repair, replacement in-kind, or maintenance⁷ of existing, currently serviceable⁷, authorized structures or fills: • All work is to be conducted in-the-dry, during low water. • Conditions of the original authorization apply. • No substantial expansion or change in use. • No new fill in SAS³. • Must be rebuilt in same footprint, however minor deviations in structure design allowed⁷. • The repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events is authorized, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage.	1. Replacement of non-serviceable structures and fills or repair/maintenance of serviceable structures or fills, with fill, replacement or expansion <1 acre, or with a change in use. 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts. Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF. 3. Standard Pile Driving Conditions. Work involving piles shall adhere to one of the four methods below: • Piles installed in-the-dry during low water or in-water between Nov. 8th - Apr. 9th, or • Must be drilled and pinned to ledge, or • Vibratory hammers used to install any size and quantity of wood, concrete or steel piles, or • Impact hammers limited to one hammer and <50 piles installed/day with the following: wood piles of any size, concrete piles ≤18-inches diameter, steel piles <12-inches diameter if the hammer is ≤3000 lbs and a wood cushion is used between the hammer and steel pile, and • For the methods above: ◦ In-water noise levels shall not exceed >187dB cSEL re 1μPa or 206dB peak re 1μPa at a distance >10m from the pile being installed, and ◦ In-water noise levels >150dB peak re 1μPa shall not exceed 12 consecutive hours on any given day and a 12 hour recovery period (i.e., in-water noise below 150dB peak re 1μPa) must be provided between work days. • Existing derelict, degraded or abandoned piles in the project area that are affected by project activities should be removed and properly disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands, their substrate or mudflats.
CATEGORY 1 Self-Verification Eligible (SVNF Required)	CATEGORY 2 (PCN Required)				
1. Repair, replacement in-kind, or maintenance⁷ of existing, currently serviceable⁷, authorized structures or fills: • All work is to be conducted in-the-dry, during low water. • Conditions of the original authorization apply. • No substantial expansion or change in use. • No new fill in SAS³. • Must be rebuilt in same footprint, however minor deviations in structure design allowed⁷. • The repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events is authorized, provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage.	1. Replacement of non-serviceable structures and fills or repair/maintenance of serviceable structures or fills, with fill, replacement or expansion <1 acre, or with a change in use. 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts. Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF. 3. Standard Pile Driving Conditions. Work involving piles shall adhere to one of the four methods below: • Piles installed in-the-dry during low water or in-water between Nov. 8th - Apr. 9th, or • Must be drilled and pinned to ledge, or • Vibratory hammers used to install any size and quantity of wood, concrete or steel piles, or • Impact hammers limited to one hammer and <50 piles installed/day with the following: wood piles of any size, concrete piles ≤18-inches diameter, steel piles <12-inches diameter if the hammer is ≤3000 lbs and a wood cushion is used between the hammer and steel pile, and • For the methods above: ◦ In-water noise levels shall not exceed >187dB cSEL re 1μPa or 206dB peak re 1μPa at a distance >10m from the pile being installed, and ◦ In-water noise levels >150dB peak re 1μPa shall not exceed 12 consecutive hours on any given day and a 12 hour recovery period (i.e., in-water noise below 150dB peak re 1μPa) must be provided between work days. • Existing derelict, degraded or abandoned piles in the project area that are affected by project activities should be removed and properly disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands, their substrate or mudflats.				

2. Moorings	1. Private, non-commercial, non-rental, single-boat moorings, provided: • Authorized by the local harbormaster/town. • Not associated with any boating facility.¹¹ • Boat or mooring not located in a Federal Navigation Project or buffer zone¹² other than in a Federal Anchorage¹². Moorings in a Federal Anchorage not associated with a boating facility¹¹ and are not for rent. • No interference with navigation. • No new moorings located in SAS³. Prior to installation of moorings, a site-specific eelgrass survey should be conducted to document that eelgrass is not present. • When existing, authorized moorings in SAS³ are going to be replaced, they should be replaced with low impact mooring technology that prevents mooring chains from resting or dragging on the bottom substrate at all tides and helical anchors, or equivalent SAS protection systems where practicable. 2. Minor relocation of previously authorized moorings, provided: • Authorized by the local harbormaster/town. • Not located in SAS³ • No interference with navigation. • Cannot be relocated into a Federal Navigation Project¹² other than a Federal Anchorage¹² Note: Cat 1 eligible moorings do not require SVN/F.	1. Moorings associated with an existing boating facility¹¹. An eelgrass¹⁴ survey may be required. 2. Moorings that don't meet the terms in Category 1 and don't require an Individual Permit. This includes private moorings with no harbormaster or means of local approval. 3. Moorings located such that they, and/or vessels docked or moored at them, are within the buffer zone of the horizontal limits¹³ of a Federal Channel¹². (See Appendix H.) The buffer zone is equal to 3 times the authorized depth of that channel. 4. An IP is required for moorings within the horizontal limits¹¹, or with moored vessels that extend, into the horizontal limits of a Federal Navigation Project¹², except those in Federal Anchorages¹². <i>For 1-4 above, siting of new individual moorings in SAS³, including eelgrass¹⁴, should be avoided to the maximum extent practicable. If SAS³ cannot be avoided, plans should show elastic mooring systems that prevent mooring chains from resting or dragging on the bottom substrate at all tides and helical anchors, or equivalent SAS protection systems, where practicable. For moorings that appear to impact SAS, the Corps may require an eelgrass survey.</i>
3. Structures, Floats and Lifts	1. Reconfiguration of existing authorized structures shall occur in-the-dry during low water. 2. Minor relocation of <u>previously authorized</u> floats or moored floats/lobster cars, provided: • Authorized by the local harbormaster/town. • Not located in SAS³. • No interference with navigation. • Cannot be relocated into a Federal Navigation Project¹² other than a Federal Anchorage¹².	1. New structures or floats, including floatways/skidways, built to access waterway (seasonal and permanent). Includes both pile supported and crib supported structures. 2. Expansions to existing boating facilities¹¹ <u>For 1 & 2 above, compliance with the following design standards is not required but recommended:</u> • Pile-supported structures <400 SF, with attached floats totaling ≤200 SF. • Bottom anchored floats ≤200 SF. • Structures are ≤4' wide and have at least a 1:1 height-width ratio¹¹. • Floats supported a minimum of 18" above the substrate during all

		tides. • Structures & floats not located within 25' of any eelgrass⁸. • Moored vessels not positioned over SAS³. • The Corps may require a letter of no objection from the abutter if structure is to be within 25 feet of the property line. • No structure extends across >25% of the waterway width at mean low water. • Not located within the buffer zone of the horizontal limits¹³ of a Corps Federal Navigation Project (FNP) (App. F). The buffer zone is equal to three times the authorized depth of that FNP. 3. An Individual Permit is required for structures or floats, including floatways/skidways, located such that they and/or vessels docked or moored at them are within the horizontal limits¹³ of a Corps Federal Navigation Project¹² (see App. H). 4. An Individual Permit is required for structures & floats associated with a new or previously unauthorized boating facility¹¹. 5. Standard Pile Driving Conditions. Work involving piles shall adhere to one of the four methods below: • Piles installed in-the-dry during low water or in-water between Nov. 8th - Apr. 9th, or • Must be drilled and pinned to ledge, or • Vibratory hammers used to install any size and quantity of wood, concrete or steel piles, or • Impact hammers limited to one hammer and <50 piles installed/day with the following: wood piles of any size, concrete piles ≤18-inches diameter, steel piles <12-inches diameter if the hammer is ≤3000 lbs and a wood cushion is used between the hammer and steel pile, and • For the methods above: ○ In-water noise levels shall not exceed >187dB cSEL re 1μPa or 206dB peak re 1μPa at a distance >10m from the pile being installed, and ○ In-water noise levels >150dB peak re 1μPa shall not exceed 12 consecutive hours on any given day and a 12 hour recovery period (i.e., in-water noise below 150dB peak re 1μPa) must be provided between work days. • Existing derelict, degraded or abandoned piles in the project area that are affected by project activities should be removed and properly disposed of in an upland location landward of MHW or OHW and not in wetlands, tidal wetlands, their substrate or mudflats.

4. Aids to Navigation and Temporary Recreational Structures	1. Temporary buoys, markers, floats, etc. for recreational use during specific events, provided they are removed within 30 days after use is discontinued. 2. The placement of aids to navigation and regulatory markers which are approved by and installed in accordance with the requirements of the U.S. Coast Guard. (See 33 CFR 66, Chapter I, subchapter C).” <i>Note: Cat 1 eligible aids to navigation and regulatory markers do not require SVNf.</i>	Work not eligible for Category 1
5. Dredging, Disposal of Dredged Material, Beach Nourishment, and Rock Removal and Relocation	1. Maintenance dredging¹⁰ for navigational purposes <1,000 CY with upland disposal. Includes return water from upland contained disposal area, provided: • Proper siltation controls are used. • Dredging & disposal operation limited to Nov. 8 – Apr. 9. • No impact to SAS³. • No dredging in intertidal areas. • No dredging within 100’ of shellfish beds. • No dredging in areas designated as Critical Habitat for Atlantic salmon [see GC 8(b) & (c)]. • For dredging in tidal waters outside of Atlantic salmon critical habitat, applicants must contact NMFS (see GC 8) to ensure no impacts to listed species such as shortnose sturgeon, Atlantic sturgeon, and listed sturgeon critical habitat. • Project proponents must contact the USFWS for work on coastal beaches to ensure no impacts to piping plovers, roseate terns, rufa red knot, or their habitat [see GC 8(c)]. • No underwater blasting. 2. Maintenance dredging is not eligible for Category 1 if conducted in tidal portions of the Penobscot river upstream of a line extending from Turner Point in Castine to Moose Point (formerly Squaw Point) on Cape Jellison in Stockton Springs or in tidal portions of the Kennebec or Androscoggin Rivers upstream of a line extending from Doubling Point in Arrowsic to Hospital Point in West Bath.	1. Maintenance dredging¹⁰ ≥1,000 CY, new dredging <25,000 CY, or projects not meeting Category 1. Includes return water from upland contained disposal areas. Disposal includes: • Upland. • Beach nourishment (above mean high water) of any area provided the dredging’s primary purpose is navigation or the sand is from an upland source. • Open water & confined aquatic disposal, if Corps finds the material suitable. 2. Beach nourishment associated with dredging when the primary purpose is not navigation requires at least a Category 2 review. 3. Maintenance or new dredging¹⁰ and/or disposal in or affecting a SAS³ requires an Individual Permit.

6. Discharges of Dredged or Fill Material Incidental to the Construction of Bridges	1. Discharges of dredged or fill material incidental to the construction of bridges across navigable waters of the U.S., including cofferdams, abutments, foundation seals, piers, and temporary construction and access fills provided the U.S. Coast Guard authorizes such discharges as part of the bridge permit or appropriate approval. 2. Causeways and approach fills are not included in this category and require Category 2 or Individual Permit authorization.	<1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF.
7. Bank and Shoreline Stabilization	1. Bank stabilization projects <200 linear feet provided: • ≤1 cubic yard of fill per linear foot placed along the bank waterward of high tide line. No fill or equipment will occur in SAS³. • Work conducted in the intertidal zone must be conducted in-the-dry during low water. • No structures angled steeper than 1H:1V and only rough-faced stone or fiber roll revetments allowed. • No driving of piles or sheeting. 2. Bank stabilization projects in excess of 200 linear feet (Applicant or Applicant + Abutters combined) must undergo Category 2 review.	1. Work not eligible for Category 1. 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF.
8. Residential, Commercial, Industrial, and Institutional Developments, and Recreational Facilities	Not Eligible	1. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF. 2. Conversions of previously authorized pile supported buildings over navigable waters to residences, offices, or other non-water dependent uses require at least a Category 2 review. 3. Floating house boats or businesses on floats require Category 2 review.
9. Utility Line Activities	1. Repair or maintenance of existing, currently serviceable, authorized utilities with no expansion or change in use: • Conditions of the original authorization apply. • Trenching or filling is confined to the existing footprint. • In water work conducted between Nov 8 and Apr 9. • No new impact to SAS. 2. Particularly relevant is GC12. 3. New work in, over, or under navigable waters requires a PCN and Category 2 review. 4. Except for aerial utility lines, work is not eligible for Category 1 if conducted in tidal portions of the Penobscot River upstream of a line extending from Turner Point in Castine to Moose Point (formerly	1. New or replacement installations or work not otherwise eligible for Category 1. 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF. 3. Particularly relevant is GC12

	Squaw Point) on Cape Jellison in Stockton Springs or in tidal	
10. Linear Transportation Projects (Not Including Stream Crossings)	Not eligible	<1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF.
11. Mining Activities	Not Eligible	Not Eligible
12. Boat Ramps and Marine Railways	1. No new impact to SAS 2. Marine railway and boat ramp work not eligible for maintenance⁷ (i.e. not currently serviceable⁷) may be replaced "in-kind" with minor deviations⁷ provided: • Work is in the intertidal zone. • No fill expansion below high tide line. • Work conducted in-the-dry during low water. 3. No new boat ramps or marine railways.	1. Work not eligible for Category 1 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF.
13. Land and Water-Based Renewable Energy Generation Facilities and Hydropower Projects	Not Eligible	1. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF. 2. No new impoundments.
14. Reshaping Existing Drainage Ditches and Mosquito Management	1. ≤500 linear feet of drainage ditch will be modified. The reshaping of the ditch cannot increase drainage capacity beyond the original as-built capacity nor can it expand the area drained by the ditch as originally constructed (i.e., the capacity of the ditch must be the same as originally constructed and it cannot drain additional wetlands or other waters of the U.S.). 2. No new ditches or relocation of drainage ditches constructed in waters of the U.S.; the location of the centerline of the reshaped drainage ditch must be approximately the same as the location of the centerline of the original drainage ditch. 3. No effect on federally listed endangered or threatened species or critical habitat	1. Work not eligible for Category 1 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF.

15. Oil Spill and Hazardous Material Cleanup	Jurisdictional activities required for the containment and cleanup of oil and hazardous substances that are subject to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300) provided that the work is done in accordance with the Spill Control and Countermeasure Plan required by 40 CFR 112.3 and any existing state contingency plan and provided that the Regional Response Team (if one exists in the area) concurs with the proposed containment and cleanup action. SAS³ must typically be restored in place at the same elevation. <i>Note: SVN/F or a surrogate state reporting form may be submitted after the fact. No SVN/F is required for Category 1 eligible containment booms.</i>	Work not eligible for Category 1
16. Cleanup of Hazardous and Toxic Waste	Not eligible - except for booms placed for hazardous and toxic waste containment and absorption and prevention which are eligible for SV. <i>Note: No SVN/F is required for Category 1 eligible containment booms.</i>	Specific jurisdictional activities with impacts of any area required to affect the containment, stabilization, or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority. Wetlands and other SAS must typically be restored in place at the same elevation to qualify.
17. Scientific Measurement Devices	Scientific measurement devices whose purpose is to measure and record scientific data, such as staff gages, water recording devices, water quality testing and improvement devices, and similar structures. Structures may not restrict or concentrate movement of aquatic organisms; no activity results in a hazard to navigation; and no activity requiring underwater blasting.	1. Work not eligible for Category 1 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF.
18. Survey Activities	Jurisdictional survey activities such as exploratory drilling, surveying and sampling activities, excluding any biological sampling devices. Does not include any activity requiring underwater blasting, seismic exploratory operations, or oil and gas exploration and fill for roads or construction pads. No activity may result in a hazard to navigation.	1. Work not eligible for Category 1 2. <1 acre temporary or permanent fill, excavation and/or secondary impacts (e.g., areas drained, flooded, fragmented or mechanically cleared). Fill area includes all temporary and permanent waterway fills, provided: • Temporary or permanent fill in eelgrass¹⁴ <1000 SF. • Permanent fill in SAS (excluding eelgrass¹⁴) <4300 SF.
19. Agricultural Activities	Not Eligible	Not Eligible

20. Fish & Wildlife Harvesting, Enhancement and Attraction Devices and Activities (Not Aquaculture)	Fish and wildlife harvesting, enhancement, and attraction devices and activities such as pound nets, crab traps, eel pots, lobster traps, and clam and oyster digging, and small fish attraction devices such as open water fish concentrators (sea kites, etc.). This does not authorize artificial reefs or impoundments and semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster or clam racks. No activity that may result in a hazard to navigation. <i>Note: A SV/NF is not required for these Category 1 eligible devices and activities.</i>	1. Work not eligible for Category 1. 2. Impoundments or semi-impoundments of waters of the U.S. for the culture or holding of motile species such as lobster and new fish weirs with an impounded area $\leq \frac{1}{2}$ acre. For Aquaculture operations, refer to Activity 24.
21. Habitat Restoration, Establishment and Enhancement Activities	1. Culch placement in tidal waters is eligible for SV provided there are no salt marsh or vegetated shallow impacts. 2. SAS planting and transplanting ≤ 100 SF in tidal waters; 3. No artificial or living reefs. 4. The activity is authorized in writing by a local, state, or non-Corps federal environmental agency. Water impoundments require PCN. 5. No conversion of i) a stream to wetland or vice versa, wetland to a pond or uplands, and ii) one wetland type to another. 6. No dam removal. 7. Shellfish habitat enhancement such as brushing the flats is eligible for Category 1, <i>but not the use of netting which requires Category 2 review.</i>	1. Work not eligible for Category 1. 2. Aquatic habitat restoration, establishment and enhancement provided those activities are proactive and result in net increases in aquatic resource functions and services.⁸
22. Previously Authorized Activities	Any work not commenced nor completed that was authorized in a written letter from the Corps under the GP in effect between October 12, 2010 and October 12, 2015. The terms and general conditions of this GP apply along with any special conditions in the written authorization.	
23. Stream & Wetland Crossings	Not Eligible	All temporary or permanent crossings of tidal navigable waters or adjacent tidal wetlands not eligible as maintenance require a PCN. GC 45 applies
24. Aquaculture	Not Eligible	Shellfish & finfish aquaculture (with the exception of Atlantic salmon and any other salmonid, or other federally listed endangered or threatened species), or other aquaculture facilities with no more than minimal individual and cumulative impacts to environmental resources or navigation. This is inclusive but not limited to cages, nets, bags, racks, long lines, fences, posts, poles, predator screening, etc. Aquaculture guidelines are provided at: www.maine.gov/dmr/aquaculture/index.htm.

Endnotes/Definitions

¹ **Bordering and Contiguous Wetlands:** A bordering wetland is immediately next to its adjacent waterbody and may lie at, or below, the ordinary high water mark (mean high water in navigable waters) of that waterbody and is directly influenced by its hydrologic regime. Contiguous wetlands extend landward from their adjacent waterbody to a point where a natural or manmade discontinuity exists. Contiguous wetlands include bordering wetlands as well as wetlands that are situated immediately above the ordinary high water mark and above the normal hydrologic influence of their adjacent waterbody. Note, with respect to the federally designated navigable rivers, the wetlands bordering and contiguous to the tidally influenced portions of those rivers are reviewed under "II. Navigable Waters."

² **Direct, Secondary, and Cumulative Impacts/Effects:**

Direct Impacts: The immediate loss of aquatic ecosystem within the footprint of the fill.

Secondary Impacts: These are 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 a) fluctuating water levels in all impoundment and downstream associated with the operation of a dam, b) septic tank leaching and surface runoff from residential or commercial developments on fill, and c) leachate and runoff from a sanitary landfill located in waters of the U.S. Put another way, secondary effects are those impacts outside the footprint of the fill that arise from and are associated with the discharge of dredged or fill material, including the operation of an activity or facility associated with the discharge. Examples may include habitat fragmentation; interruption of travel corridors for wildlife (for example, for amphibians that migrate to and from seasonal or vernal pools used as breeding habitat); hydrologic regime changes; and impacts from operation and maintenance activities for constructed facilities; such as noise/lighting, storm water runoff, and road kill of wetland dependent wildlife. Using the directions contained in the guidelines, we consider the circumstances of a proposed discharge and the project of which it is a part to evaluate the scope, extent, severity, and permanence of direct, secondary, and cumulative adverse effects upon the aquatic ecosystem.

Cumulative Impacts: The extent of past, present, and foreseeable developments in the area may be an important consideration in evaluating the significance of a particular project's impacts. Although the impacts associated with a particular discharge may be minor, the cumulative effect of numerous similar discharges can result in a large impact. Cumulative impacts should be estimated only to the extent that they are reasonable and practical.

³ **Special Aquatic Sites:** Includes wetlands and saltmarsh, mudflats, riffles and pools, and vegetated shallows (predominantly comprised of eelgrass in Maine).

⁴ **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're installed temporarily or permanently.

⁵ **Vernal Pools:** A vernal pool, also referred to as a seasonal forest pool, is a temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet or outlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species. A vernal pool intentionally created for the purposes of compensatory mitigation is included in this definition. For the purposes of this GP, the presence of any of the following species in any life stage in any abundance level/quantity would designate the waterbody as a vernal pool: fairy shrimp, blue spotted salamanders, spotted salamanders or wood frogs. The Corps may determine during a Category 2 review that a waterbody should not be regulated as a VP based on available evidence. For the purposes of this GP, the VP Management Areas are the: Vernal Pool Depression (includes the vernal pool depression up to the spring or fall high water mark, and includes any vegetation growing within the depression), Vernal Pool Envelope (area within 100 FT of the VP Depression's edge) and Critical Terrestrial Habitat (area within 100-750 FT of the Vernal Pool Depression's edge). [*Note: Critical Terrestrial Habitat is defined as 100 -750 FT on page 243 of the document "Science and Conservation of Vernal Pools in Northeastern North America," Calhoun and deMaynadier, 2008, which is referenced in Appendix G, page 3, Paragraph 10(b).

⁶ **Water Diversions:** Water diversions are activities such as bypass pumping 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.

⁷ **Maintenance:** a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 320.3 – "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 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.
- No seaward expansion for bulkheads or any other fill activity is considered Category 1 maintenance.
- 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), or in accordance with the Category 1 or 2 thresholds in Appendix A.

b) The state's maintenance provisions may differ from the Corps and may require reporting and written authorization from the state.

c) Contact the Corps to determine whether stream crossing replacements require a written application to the Corps for at least a Category 2 review.

d) Exempted Maintenance. 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."

⁸ **Aquatic Habitat Restoration, Establishment and Enhancement:** The Corps will decide if a project qualifies and must determine in consultation with federal and state agencies that the net effects are beneficial. The Corps may refer to Nationwide Permit 27 published in the 3/12/07 Federal Register. Activities authorized here may include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels and drainage ditches; the removal of existing drainage structures; the construction of small nesting islands in inland waters; the construction of open water areas; the construction of native shellfish species habitat over unvegetated bottom for the purpose of habitat protection or restoration in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species should be planted at the site.

⁹ **Brushing the Flats:** The placement of tree boughs, wooden lath structure, or small-mesh fencing on mudflats to enhance recruitment of soft-shell clams (*Mya arenaria*).

¹⁰ **Maintenance Dredging:** This includes only those areas and depths previously authorized by the Corps and dredged. The Corps may require proof of authorization. Maintenance dredging typically refers to the routine removal of sediment to maintain the design depths of serviceable navigation channels, harbors, basins, marinas, boat launches, and port facilities. Maintenance dredging is conducted for navigational purposes and does not include any expansion of the previously dredged area or depth. The Corps may review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS, shellfish, etc.

¹¹ **Boating Facilities:** Facilities that provide for a fee, rent, or sell mooring space, such as marinas, yacht clubs, boat clubs, boat yards, town facilities, dockominiums, etc.

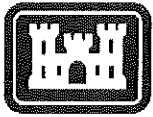
¹² **Federal Navigation Projects (FNPs):** FNPs are comprised of Federal Channels and Federal Anchorages. See Appendix F for their location and contact the Corps for more information. "Horizontal Limits" is the outer edge of an FNP. "Buffer Zone" is equal to three times the authorized depth of that channel.

¹³ **Horizontal Limits:** The outer edge of a Federal Navigation Project (FNP). See Appendix F and contact the Corps for information on FNP's.

¹⁴ **Eelgrass (*Zostera marina*):** A type of rooted aquatic vegetation that exists in intertidal and shallow subtidal areas known as vegetated shallows. See www.nero.noaa.gov/hcd/ for eelgrass survey guidance. Note: Eelgrass surveys should be conducted between May and October unless otherwise directed.

¹⁵ **Structures:** 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.

¹⁶ **Agricultural Activities:** The Clean Water Act exempts certain discharges associated with normal farming, ranching, and forestry activities such as plowing, cultivating, minor drainage, and harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices (Section 404(f)(1)(A)). Applicants are strongly advised to contact the Corps for a determination of whether their activity is exempt or requires a permit.



Appendix B: Self-Verification Notification Form
(for all tidal and non-tidal projects in Maine subject to Corps jurisdiction)

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New England District

At least two weeks before work commences, complete **all** fields (write "none" if applicable) below or use the fillable form at www.nae.usace.army.mil/missions/regulatory.aspx. Send this form, a location map, any project plans, and an Official Species List (See GC 8) to the address noted below; fax to (207) 623-8206; or email to jay.l.clement@usace.army.mil. The two-week lead time is not required for emergency situations (see page 4 for definition). Please call (207) 623-8367 with questions.

Maine Project Office
U.S. Army Corps of Engineers
New England District
675 Western Avenue #3
Manchester, Maine 04351

State Permit Number: _____
Date of State Permit: _____
State Project Manager: _____

Permittee: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Contractor: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Consultant/Engineer/Designer: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Wetland/Vernal Pool Consultant: _____
Address, City, State & Zip: _____
Phone(s) and Email: _____

Project Location/Description: _____
Address, City, State & Zip: _____
Latitude/Longitude Coordinates: _____ Tax Map/Lot: _____
Waterway Name: _____
Work Description: _____

Provide any prior Corps permit numbers: _____
Proposed Work Dates: Start: _____ Finish: _____

Area of wetland impact: _____ SF (leave blank if work involves structures & no fill in Navigable Waters)
Area of waterway impact: _____ SF (leave blank if work involves structures & no fill in Navigable Waters)
Area of compensatory mitigation provided: _____ SF

Work will be done under the following Appendix A categories (circle all that apply):

- I. Inland Waters and wetlands: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
II. Navigable Waters: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Your name/signature below, as permittee, indicates that you accept and agree to comply with the terms, eligibility criteria, and general conditions of Category I of the Maine General Permit.

Permittee Printed Name: _____

Permittee Signature: _____ Date: _____



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Appendix C: Content of Pre-Construction Notification

In addition to the following required information, the applicant must provide additional information as the Corps deems essential to make a public interest determination including, where applicable, a determination of compliance with the Section 404(b)(1) guidelines or ocean dumping criteria. Such additional information may include environmental data and information on alternate methods and sites as may be necessary for the preparation of the required environmental documentation. For a more comprehensive checklist, go to www.nae.usace.army.mil/missions/regulatory >> Forms >> Application and Plan Guideline Checklist. Please check with the Corps for project-specific requirements.

Information required for all projects:

- ☐ Corps application form (ENG Form 4345) or appropriate state application form (see Appendix E). Forms may need to be supplemented to include the information noted below.
- ☐ Proof of notification to the SHPO and the appropriate THPOs (see Appendix E).
- ☐ Official Species List for any federally listed endangered or threatened species (Instructions at Appendix D)
- ☐ Drawings, sketches, or plans (detailed engineering plans and specifications are not required) that are legible, reproducible (color is encouraged, but features must be distinguishable in black and white), no larger than 11"x17", with bar scale. Wetland area impact sheets should have the highest resolution possible to show work within Corps jurisdiction (do not just reduce project overview or cut large-scale plan into quadrant sheets). Provide locus map and a plan overview of the entire property with a key index to the individual impact sheets. A locus map on a section of color USGS topographic map is encouraged. Digital submissions are encouraged.
- ☐ Include:
 - ☐ All direct, secondary, permanent and temporary effects the project would cause, including the anticipated amount of impacts to waters of the U.S. expected to result from the activity, in acres, linear feet, or other appropriate unit of measure.
 - ☐ Any historic permanent fill associated with each single and complete project.
 - ☐ Cross-section views of all wetland and waterway fill areas and wetland replication areas.
 - ☐ Delineation of all wetlands, other special aquatic sites (vegetated shallows, saltmarsh, mudflats, riffles and pools, coral reefs, and sanctuaries and refuges), and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Use Federal delineation methods and include Corps wetland delineation data sheets (see GC 2).
 - ☐ MLW and MHW elevations in tidal waters. Show the HTL elevations when fill is involved. Show OHW elevation in lakes and non-tidal streams.
 - ☐ Existing and proposed conditions.
 - ☐ For vegetated shallow and eelgrass survey guidance, see www.nae.usace.army.mil/missions/regulatory >> Jurisdictional Limits and Wetlands >> Submerged Aquatic Vegetation Survey Guidance for the New England Region.
 - ☐ Show all known VPs on the project site. See GC 23 for vernal pool identification requirements.
- ☐ Volume, type, and source of fill material to be discharged into waters and wetlands, including the area(s) (in square feet or acres) of fill in wetlands, below OHW in inland waters and below the HTL in coastal waters.

- ☐ An Official Species List of federally “listed species or critical habitat” present in the action area (see GC 8).
- ☐ A restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions (see GC 43).

Information that may be required:

- ☐ Photographs of wetland/waterway to be impacted. Photos at low tide are preferred for work in tidal waters.
- ☐ For drawings, sketches, or plans:
 - ☐ The vertical datum for all coastal projects must be in U.S. survey feet and referenced to MLLW and current tidal epochs, with a reference chart showing conversion factor to NAVD88; do not use local datum. See [>> Forms and Publications >> Vertical Datum - FEMA \(Jul 2007\)](http://www.nae.usace.army.mil/missions/regulatory);
 - ☐ The horizontal state plane coordinates shall be in U.S. survey feet and based on the appropriate state plane coordinate system.
- ☐ For the construction of a filled area or pile or float-supported platform, the use of, and specific structures to be erected on, the fill or platform.
- ☐ For the discharge of dredged or fill material into waters of the U.S. or the transportation of dredged material for the purpose of disposing of it in ocean waters, the source of the material; the purpose of the discharge, a description of the type, composition and quantity of the material; the method of transportation and disposal of the material; and the location of the disposal site.
- ☐ For the discharge of dredged or fill material into waters of the U.S., include a statement describing how impacts to waters of the U.S. are to be avoided and minimized. Include either a statement describing how impacts to waters of the U.S. are to be compensated for or a statement explaining why compensatory mitigation should not be required for the proposed impacts.
- ☐ Purpose and need for the proposed activity;
- ☐ Limits and coordinates of any Federal Navigation Project in the vicinity of the project area.
- ☐ Limits and coordinates of any proposed mooring field, reconfiguration zone or aquaculture activity. Provide coordinates for all corners;
- ☐ Schedule of construction/activity;
- ☐ Names and addresses of adjoining property owners;
- ☐ Location and dimensions of adjacent structures;
- ☐ List of authorizations required by other Federal, interstate, state, or local agencies for the work, including all approvals received or denials already made.
- ☐ Identification and description of potential impacts to Essential Fish Habitat (defined at VI. Definitions and Acronyms).
- ☐ Identification of potential discharges of pollutants to waters, including potential impacts to impaired waters, in the project area (see GC 19).
- ☐ Invasive Species Control Plan (see GC 24). For sample control plans, see [>> Invasive Species](http://www.nae.usace.army.mil/missions/regulatory).
- ☐ Wildlife Action Plan (WAP) maps. Contact Maine Inland Fisheries & Wildlife (Appendix E) or on line at http://www.maine.gov/ifw/wildlife/conservation/action_plan.html

Information for dredging projects that may be required:

- ☐ Sediment testing, including physical (e.g., grain-size analysis), chemical and biological testing. For projects proposing open water disposal, applicants are encouraged to contact the Corps as early as possible regarding sampling and testing protocols. Sampling and testing of sediments without such contact should not occur and if done, would be at the applicant’s risk.
- ☐ The area in square feet and volume of material to be dredged below mean high water.

- ☐ Existing and proposed water depths.
- ☐ Type of dredging equipment to be used.
- ☐ Nature of material (e.g., silty sand).
- ☐ Any existing sediment grain size and bulk sediment chemistry data for the proposed or any nearby projects.
- ☐ Information on the location and nature of municipal or industrial discharges and occurrence of any contaminant spills in or near the project area.
- ☐ Shellfish survey.
- ☐ Location of the disposal site (include locus sheet).
- ☐ Identification and description of any potential impacts to Essential Fish Habitat.
- ☐ Delineation of submerged aquatic vegetation (e.g., eelgrass beds).

Information for aquaculture projects that may be required:

- ☐ Maine Aquaculture guidelines and joint Corps/Maine DMR applications may be found at: www.maine.gov/dmr/aquaculture/index.htm.
- ☐ In addition to the information required above, applications must also include:
 - ☐ Whether canopy predator nets are being used.

Appendix D: Instruction for USFWS IPaC Project Builder/Official Species List

NOTE: These instructions are subject to change by the USFWS. Users should check this GP's Corps webpage for the latest instructions or click [here](#).

In your internet browser go to <http://ecos.fws.gov/ipac/>

1. Click on get started.
2. Click on enter project location.
3. Search or zoom to your project location. (You can enter an address and then zoom in with your mouse).
4. Define your area. (Select the polygon tool and click around the boundary of your project.) or (Use the draw a line tool for linear projects)

Note: You can change/select the map from Streets to Satellite or Topo in the lower left corner of the map.

5. Click finished drawing then click confirm and select continue.
6. On the next page under Tasks (lower left), select Request an official species list. The pane will open. Select "request official species list" again.
7. A new page will open. Fill in the project information blanks with the project name, brief description, project type, lead agency, and contact information. Be sure to check the box to verify this is a legitimate project. Click on Submit Official Species List Request.
8. You will be sent an e-mail with instructions to complete the request by clicking on the link provided.
9. The site will open Official Species List Request Completed. Under the Maine Ecological Services Field Office address you will see "Official Species List Document". Click on that link and your document will open. Save and or print a copy and **include the entire report with your application.**

Note, you will receive a second e-mail with the same information. You can save the link in the event you need to return to the IPaC site for an updated list.

If a period of time has passed since your initial "Official Species List" identifier number was generated, you may choose to generate an "UPDATED SPECIES LIST". To do this, return to the IPaC homepage at <http://ecos.fws.gov/ipac> site. In the middle of the page, click the purple "Need an updated species list" link.

On the request an "Updated Official Species List" page, complete the information in the boxes provided. You will need the project specific official consultation code generated and stated on the original official list as well as the email address entered with the original submission.

Click "Request Updated Species List". Print, or save.

Appendix E: Contacts and Tribal Areas of Interest

1. Federal

U.S. Army Corps of Engineers
Maine Project Office
675 Western Avenue #3
Manchester, ME 04351
(207) 623-8367 (phone); (207) 623-8206 (fax)

Federal Emergency Management Agency
99 High St.
Boston, MA 02110
(877) 336-2734 (phone)
(Flood Plain Management)

U.S. Environmental Protection Agency
5 Post Office Square
Suite 100 (OEP05-2)
Boston, MA 02109-3912
(617) 918-1589 (phone)

National Marine Fisheries Service
55 Great Republic Drive
Gloucester, MA 01930
(978) 281-9102 (phone); (978) 281-9301 (fax)
(Federal endangered species & EFH)

U.S. Fish and Wildlife Service
Maine Field Office
17 Godfrey Drive, Suite 2
Orono, ME 04473
(207) 866-3344 (phone); (207) 866-3351 (fax)
(Federal endangered species)

National Park Service
North Atlantic Region
15 State Street
Boston, MA 02109
(617) 223-5203 (phone)
(Wild and Scenic Rivers)

National Marine Fisheries Service
Maine Field Office
17 Godfrey Drive Suite 1
Orono, ME 04473
(207) 866-7379 (phone); (207) 866-7342 (fax)
(Federal endangered species)

Commander (dpb)
First Coast Guard District
One South Street - Battery Bldg
New York, NY 10004-1466
(212) 668-7021 (phone); (212) 668-7967 (fax)
(bridge permits)

2. State of Maine

a. Department of Environmental Protection *(State permits & Water Quality Certifications)*

Division of Land Resource Regulation
Bureau of Land and Water Quality
17 State House Station
Augusta, Maine 04333
(207) 287-7688 (phone)

Eastern Maine Regional Office
106 Hogan Road
Bangor, Maine 04401
(207) 941-4570 (phone)

Southern Maine Regional Office
312 Canco Road
Portland, Maine 04103
(201) 822-6300 (phone)

Northern Maine Regional Office
1235 Central Drive - Skyway Park
Presque Isle, Maine 04769
(207) 764-0477 (phone)

b. Department of Agriculture, Conservation and Forestry

i. Maine Land Use Planning Commission (LUPC) (*State permits & Water Quality Certifications in the unorganized areas of the State*)

Augusta Office
22 State House Station
Augusta, Maine 04333-0022
(207) 287-2631 (phone); (207) 287-7439 (fax)

Greenville Regional Office
43 Lakeview Drive
P.O. Box 1107
Greenville, Maine 04441
(207) 695-2466 (phone); (207) 695-2380 (fax)

Rangeley Regional Office
133 Fyfe Road
PO Box 307
West Farmington, ME 04992
(207) 670-7493 (phone); (207) 287-7439 (fax)

Downeast Regional Office
106 Hogan Rd, Suite 8
Dorothea Dix Complex
Bangor, Maine 04401
(207) 941-4052 (phone); (207) 941-4222 (fax)

Ashland Regional Office
45 Radar Road
Ashland, ME 04732-3600
(207) 435-7963 (phone); (207) 435-7184 (fax)

East Millinocket Regional Office
191 Main Street
East Millinocket, ME 04430
(207) 746-2244 (phone); (207) 746-2243 (fax)

ii. Maine Coastal Program

Department of Agriculture, Conservation and Forestry
Bureau of Resource Information and Land Use Planning
17 Elkins Lane {physical address}
State House Station 93
Augusta, Maine 04333-0038
(207) 287-2801 (phone); (207) 287-2353 (fax)
(*CZM consistency determinations*)

iii. Division of Parks and Public Lands

22 State House Station
Augusta, Maine 04333
(207) 287-3061 (phone); (207) 287-6170 (fax)
(*submerged lands leases*)

c. Department of Marine Resources

P.O. Box 8
West Boothbay Harbor, Maine 04575
(207) 633-9500 (phone); (207) 624-6024 (fax)
(*aquaculture leases*)

3. Historic Properties

a. State Historic Preservation Officer (SHPO)

Mr. Kirk F. Mohnney, Director

Maine Historic Preservation Commission (MHPC)
65 State House Station
Augusta, Maine 04333-0065
(207) 287-2132 (phone); (207) 287-2335 (fax)
Area of concern: The entire State of Maine

b. Tribal Historic Preservation Officers (THPOs)

Note: The area of concern for each tribe is the entire State of Maine

THPO & Environmental Planner
Houlton Band of Maliseet Indians
88 Bell Road
Littleton, Maine 04730
(207) 532-4273, x215 (phone)
(207) 532-6883 (fax)
envplanner@maliseets.com
ogs1@maliseets.com

THPO
Aroostook Band of Micmacs
7 Northern Road
Presque Isle, Maine 04769
(207) 764-1972 (phone); (207) 764-7667 (fax)
jpictou@micmac-nsn.gov

THPO
Passamaquoddy Tribe of Indians
Pleasant Point Reservation
P.O. Box 343
Perry, Maine 04667
(207) 853-2600 (phone); (207) 853-6039 (fax)
soctomah@gmail.com

THPO
Penobscot Nation
Cultural and Historic Preservation Dept.
12 Wabanaki Way
Indian Island, Maine 04468
(207) 817-7471 (phone)
chris.sockalexis@penobscotnation.org

THPO
Passamaquoddy Tribe of Indians
Indian Township Reservation
P.O. Box 301
Princeton, Maine 04668
(207) 796-2301 (phone)
(207) 796-5256 (fax); soctomah@gmail.com

4. **Organizational Websites (Note – Subject to Change):**

U.S. Army Corps of Engineers, N.E. District
U.S. Army Corps of Engineers, Headquarters
U.S. Environmental Protection Agency
National Marine Fisheries Service
U.S. Fish and Wildlife Service
National Park Service
Maine Department of Environmental Protection
Maine Department of Agriculture,
Conservation and Forestry
Maine Land Use Planning Commission
Maine Department of Marine Resources
State of Maine - Aquaculture Guidelines

www.nae.usace.army.mil/missions/regulatory.aspx
See above link>>>Useful Links>>>Federal Agency Links
www.epa.gov/owow/wetlands
www.nmfs.noaa.gov
www.fws.gov/mainefieldoffice
www.nps.gov/rivers/index.html
www.maine.gov/dep
www.maine.gov/acf/index.shtml
www.maine.gov/doc/lupc/commission/offices.shtml
www.maine.gov/dmr/index.htm
www.maine.gov/dmr/aquaculture/index.htm

Appendix F: Definitions

Definitions

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. 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.

Boating facilities: These provide, rent or sell mooring space, such as marinas, yacht clubs, boat yards, dockminiums, town facilities, land/home owners, etc. Not classified as boating facilities are piers shared between two abutting properties or town mooring fields that charge an equitable user fee based on the actual costs incurred.

Brushing the Flats: The placement of tree boughs, wooden lath structure, or small-mesh fencing on mudflats, or any bottom disturbance (e.g., discing, plowing, raking, etc.), to enhance recruitment of shellfish.

Buffer Zone: The buffer zone of an FNP is equal to three times the authorized depth of the FNP.

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 effects: See “Direct, secondary, and cumulative effects.”

Direct, secondary, and cumulative effects:

Direct Effects: The loss of aquatic ecosystem within the footprint of the discharge of dredged or fill material. Direct effects are caused by the action and occur at the same time and place.

Secondary Effects: These are 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 a) aquatic areas drained, flooded, fragmented, or mechanically cleared, b) fluctuating water levels in all impoundment and downstream associated with the operation of a dam, c) septic tank leaching and surface runoff from residential or commercial developments on fill, and d) leachate and runoff from a sanitary landfill located in waters of the U.S. See 40 CFR 230.11(h).

Cumulative Effects: The changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual 1) discharges of dredged or fill material, or 2) structures. 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(g).

Dredging:

Maintenance Dredging: Includes areas and depths previously authorized by the Corps and dredged. The Corps may require proof of authorization. Maintenance dredging typically refers to the routine removal of accumulated sediment from channel beds to maintain the design depths of navigation channels, harbors, marinas, boat launches and port facilities. Routine maintenance dredging is conducted regularly for navigational purposes (typically at least once every ten years) and does not include any expansion of the previously dredged area or depth. The Corps may review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS,

shellfish, etc. The main characteristics of maintenance dredging projects are variable quantities of material; soft, uncompacted soil; contaminant content possible; thin layers of material; occurring in navigation channels and harbors; repetitive activity

New Dredging: Dredging of an area or to a depth that has never been authorized by the Corps or dredged.

Dredged material & discharge of dredged material: These are defined at 323.2(c) and (d). The term dredged material means material that is excavated or dredged from waters of the U.S.

Essential Fish Habitat (EFH): This is broadly defined to include those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

Fill material & discharge of fill material: These are defined at 323.2(e) and (f). The term fill material is defined as 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.

Federal anchorages, Federal channels and Federal turning basin: Refer to Appendix H for those in Maine

Federal navigation projects (FNPs): These areas are maintained by the Corps; authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms; and are comprised of Federal Anchorages, Federal Channels and Federal Turning Basins. The buffer zone is equal to three times the authorized depth of a FNP. More information on the following FNPs is provided at www.nae.usace.army.mil/missions/navigation.aspx >> Navigation Projects.

Flume: An open artificial water channel, in the form of a gravity chute, that leads water from a diversion dam or weir completely aside a natural flow. A flume can be used to measure the rate of flow.

Frac out: During normal drilling 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.

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps 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.

Maintenance: Regulations on maintenance are provided at 33 CFR 323.4. The following definitions are applicable:

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.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Marina reconfiguration zone: A Corps-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.

Navigable waters of the U.S.: See Waters of the U.S. below.

Overall project: See "single and complete linear project" below.

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. Temporary impacts include waters of the U.S. that are temporarily filled, flooded, excavated, drained or mechanically cleared because of the regulated activity.

Pre-construction notification (PCN): A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by this GP. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction 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 project proponent wants confirmation that the activity is authorized under this GP.

Secondary effects: See “Direct, secondary, and cumulative effects.”

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 this GP. 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.

The overall project, for purposes of this GP, includes all regulated activities that are reasonably related and necessary to accomplish the project purpose.

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. For non-linear projects, the single and complete project must have independent utility (see definition).

Special aquatic sites: 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 Subpart E.

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 United States.

Temporary impacts: See permanent impacts above.

Utility line: Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and 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 and widgeon grass (*Rupia maritima*) in marine systems (doesn’t include salt marsh) as well as a number of freshwater species in rivers and lakes. Note: These areas are also commonly referred to as submerged aquatic vegetation (SAV).

Vernal pools (VPs): For the purposes of this GP, VPs are depressional wetland basins that typically go dry 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). Pools usually

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.

VP areas are:

- Depression (includes the VP depression up to the spring or fall high water mark, and includes any vegetation growing within the depression),
- Envelope (area within 100 feet of the VP depression's edge), and
- Critical terrestrial habitat (area within 100-750 feet of the VP depression's edge).

Note: See footnote to GC 23. The Corps may determine during the PCN review that a waterbody should not be designated as a VP based on available evidence.

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.

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 (not unlike a dam) and allows water to flow over the top. Weirs are commonly used to alter the flow regime of the river, prevent flooding, measure discharge and help render a river navigable.

Waters of the U.S. & Waters of the United States (U.S.): The term waters of the U.S. and all other terms relating to the geographic scope of jurisdiction are defined at 33 CFR 328. Also see Section 502(7) of the Federal CWA [33 USC 1352(7)]. Waters of the U.S. include jurisdictional wetlands. Not all waters and wetlands are jurisdictional. Contact the Corps with any questions regarding jurisdiction.

Navigable waters: Refer to 33 CFR 329. These waters include the following federally designated navigable waters in New England. This list represents only those waterbodies for which affirmative determinations have been made; absence from this list should not be taken as an indication that the waterbody is not navigable:

ME: All tidal waters; Kennebec River to Moosehead Lake; Penobscot River to the confluence of the East and West Branch at Medway, Maine; Lake Umbagog within the State of Maine.

Appendix G: Additional References

1. GC 2: Federal Jurisdictional Boundaries.

(a) Corps Wetlands Delineation Manual, regional supplements, and Corps Wetland Delineation Data Sheets: www.nae.usace.army.mil/missions/regulatory and then “Wetlands and Jurisdictional Limits.”

(b) The USFWS publishes the 1988 National List of Plant Species that Occur in Wetlands (www.nwi.fws.gov).

The Natural Resources Conservation Service (NRCS) publishes the current hydric soil definition, criteria and lists: <http://soils.usda.gov/use/hydric>. For the Field Indicators for Identifying Hydric Soils in N.E., see www.neiwpcc.org/hydricsoils.asp.

2. GC 5: Single and Complete Project.

Single and complete project means the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. For example, if construction of a residential development affects several different areas of a headwater or isolated water, or several different headwaters or isolated waters, the cumulative total of all filled areas should be the basis for deciding whether or not the project will be covered by Category 1 or 2.

The *Independent utility* test is used to determine what constitutes a single and complete project in the Corps 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.

3. GC 8: Threatened and Endangered Species.

(a) The following NMFS site must be referenced to ensure that listed species or critical habitat are not present in the action area [GC 8(b)] or to provide information on federally-listed species or habitat [GC 8(e)]: www.nero.noaa.gov/prot_res/esp/ListE&Tspec.pdf. Contact the USFWS for information to check for the presence of listed species (see Appendix D for contact information & procedures).

(b) The Endangered Species Act Consultation Handbook – Procedures for Conducting Section 7 Consultations and Conferences, defines action area as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. [50 CFR 402.02].”

4. GC 42: Essential Fish Habitat.

As part of the GP screening process, the Corps may coordinate with NMFS in accordance with the 1996 amendments to the Magnuson-Stevens Fishery Conservation and Management Act to protect and conserve the habitat of marine, estuarine and anadromous finfish, mollusks, and crustaceans. This habitat is termed “Essential Fish Habitat (EFH)”, and is broadly defined to include “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” There are EFH waters throughout inland and coastal waters in Maine. For additional information, see the EFH regulations 50 CFR 600 at www.nero.noaa.gov/hcd including the “Guide for EFH Descriptions” at www.nero.noaa.gov/hcd/list.htm. Additional information on the location of EFH can be obtained from NMFS (see Appendix D for contact information).

5. GC 4: Avoidance, Minimization and Compensatory Mitigation.

(a) See www.nae.usace.army.mil/missions/regulatory and then “Mitigation” to view the April 10, 2008 “Final Compensatory Mitigation Rule” (33 CFR 332) and related documents. The Q&A document states: “In order to reduce risk and uncertainty and help ensure that the required compensation is provided, the rule establishes a preference hierarchy for mitigation options. The most preferred option

is mitigation bank credits, which are usually in place before the activity is permitted. In-lieu fee program credits are second in the preference hierarchy, because they may involve larger, more ecologically valuable compensatory mitigation projects as compared to permittee-responsible mitigation. Permittee-responsible mitigation is the third option, with three possible circumstances: (1) conducted under a watershed approach, (2) on-site and in kind, and (3) off-site/out-of-kind.

(b) Compensatory mitigation may take the form of wetland preservation, restoration, enhancement, creation, and/or in lieu fee (ILF) for inclusion into the Natural Resources Mitigation Fund for projects in DEP and LURC territories. Avoidance of wetland impacts will reduce the ILF dollar total for applicants. The ILF compensation program was established to provide applicants with a flexible compensation option over and above traditional permittee responsible compensation projects. See the Maine ILF Agreement at www.nae.usace.army.mil/missions/regulatory, “Mitigation” and then “Maine,” or www.maine.gov/dep/blwq/docstand/nrpa/ILF_and_NRCP/index.htm.

6. GCs 24, 15, and 43: Invasive Species.

(a) Information on what are considered “invasive species” is provided in our “Compensatory Mitigation Guidance” document at www.nae.usace.army.mil/missions/regulatory under “Mitigation.” The “Invasive Species” section has a reference to our “Invasive Species Control Plan (ISCP) Guidance” document, located at www.nae.usace.army.mil/missions/regulatory under “Invasive Species,” which provides information on preparing an ISCP.

(b) The June 2009 “Corps of Engineers Invasive Species Policy” is at www.nae.usace.army.mil/missions/regulatory under “Invasive Species” and provides policy, goals and objectives.

7. GC 44: Bank Stabilization.

This generally eliminates bodies of water where the reflected wave energy may interfere with or impact on harbors, marinas, or other developed shore areas. A revetment is sloped and is typically employed to absorb the direct impact of waves more effectively than a vertical seawall. It typically has a less adverse effect on the beach in front of it, abutting properties and wildlife. See the Corps Coastal Engineering Manual EM 1110-2-1100 at www.nae.usace.army.mil/missions/regulatory under “Useful Links and Documents” for design and construction guidance.

8. GC 45: Stream and Wetland Crossings.

(a) Projects should be designed and constructed to ensure long-term success using the most recent manual located at www.nae.usace.army.mil/missions/regulatory under “Stream and River Continuity,” currently “Stream Simulation: An Ecological Approach to Providing Passage for Aquatic Organisms at Road-Stream Crossings, by the U.S. Forest Service.” Section 5.3.3 is of particular importance. Sections 7.5.2.3 Construction Methods and 8.2.11 Stream-Simulation Bed Material Placement both show important steps in the project construction.

(b) For more information on High-Quality Stream Segments and their components see:

i. High-Quality Stream Segments are shown at www.maine.gov/dep/gis/datamaps.

ii. Class A Waters or Class AA Waters:

www.mainelegislature.org/legis/statutes/38/title38sec465.html, and
www.mainelegislature.org/legis/statutes/38/title38sec467.html.

iii. Outstanding river segments www.mainelegislature.org/legis/statutes/38/title38sec480-P.html.

(c) The Massachusetts Dam Removal and the Wetland Regulations offer guidance to evaluate the positive and negative impacts of culvert replacement, including the loss of upstream wetlands, which may be offset by the overall benefits of the river restoration. See www.nae.usace.army.mil/missions/regulatory and then “Stream and River Continuity.”

(d) The ME DOT's document "Waterway and Wildlife Crossing Policy and Design Guide for Aquatic Organism, Wildlife Habitat, and Hydrologic Connectivity," 3rd Edition, July 2008, may be used as guidance to evaluate impacts to aquatic, wildlife and surface water resources when designing, constructing, repairing and maintaining stream crossings. Note: Adherence to this DOT document does not ensure compliance with this GP. Projects must comply with the requirements of this GP including GC 45 and the Corps General Stream Crossing Standards contained therein.

www.maine.gov/mdot/environmental-office-homepage/fishpassage/3rd%20edition%20-%20merged%20final%20version%207-01-08a1.pdf.

(e) GC 45(f): The Skidder Bridge Fact Sheet at www.nae.usace.army.mil/missions/regulatory under "Stream and River Continuity" may be a useful temporary span construction method.

9. GC 45: Wetland Crossings. The Maine DEP's crossing standards are at 06-096 DEP, Chapter 305: Permits by Rule, 9 & 10) Crossings (utility lines, pipes and cables).
www.maine.gov/dep/blwq/rules/NRPA/2009/305/305_effective_2009.pdf

10. GC 23: Protection of Vernal Pools.

(a) The state's Significant Wildlife Habitat rules (Chapter 335, Section 9(C) "Habitat management standards for significant vernal pool habitat") are located at www.maine.gov/dep/blwq/docstand/nrpapage.htm#rule under "Rules."

(b) The following documents provide conservation recommendations:

i. Best Development Practices: Conserving pool-breeding amphibians in residential and commercial development in the northeastern U.S., Calhoun and Klemens, 2002. Chapter III, Management Goals and Recommendations, Pages 15 – 26, is particularly relevant. (Available for purchase at www.maineaudubon.org/resource/index.shtml and on Corps website*.)

ii. Science and Conservation of Vernal Pools in Northeastern North America, Calhoun and deMaynadier, 2008. Chapter 12, Conservation Recommendations section, Page 241, is particularly relevant. (Available for purchase via the internet. Chapter 12 is available on Corps website*.)

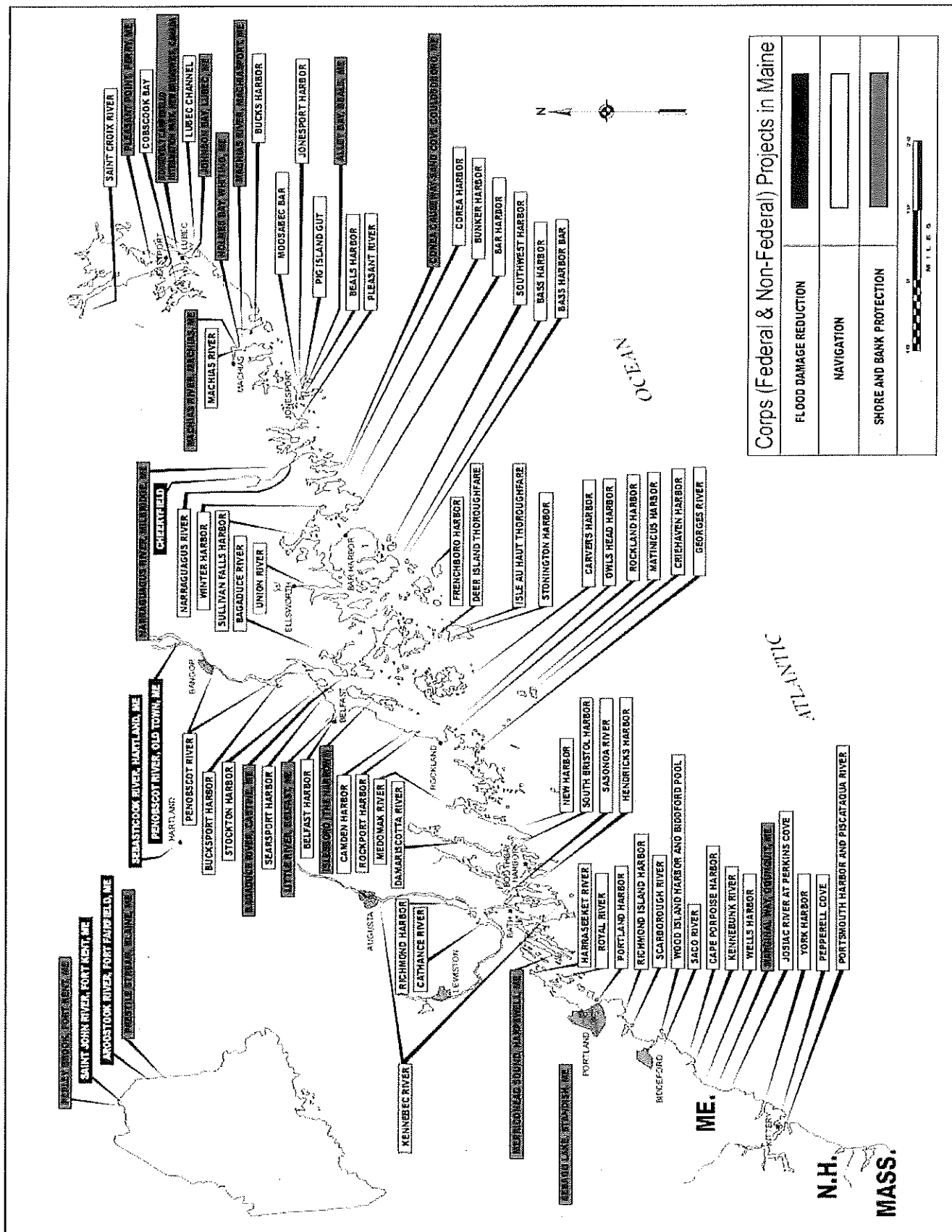
* www.nae.usace.army.mil/reg under "Vernal Pools."

(c) Cape Cod Curbing: For smaller roads and driveways, the most important design feature to consider is curbing. Granite curbs and some traditional curbing can act as a barrier to amphibian and hatchling turtle movements. Large numbers of salamanders have been intercepted in their migrations by curbs and catch basins. Use of Cape Cod curbs rather than traditional curbing may be one solution. Alternatively, where storm water management systems require more traditional curbing, it may be possible to design in escape ramps on either side of each catch basin. Cape Cod curbing is shown on Page 35 of the document cited in 10.b.i above. Bituminous material is not required; other materials such as granite are acceptable.

(d) The VP Directional Buffer Guidance document is located at www.nae.usace.army.mil/missions/regulatory under: 1) "State General Permits" and then "Maine," and 2) "Vernal Pools."

11. GC 29: Maintenance. River restoration projects that are designed to accommodate the natural dynamic tendencies of the fluvial system are maintained in accordance with the project's design objectives (Category 1) or the Corps authorization letter (Category 2). These projects are generally designed to support and implement channel assessment and management practices that recognize a stream's natural dynamic tendencies.

Appendix H: Federal Navigation Projects in Maine



DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMIT BY RULE NOTIFICATION FORM
 (For use with DEP Regulation, Natural Resources Protection Act- Permit by Rule Standards, Chapter 305)
 PLEASE TYPE OR PRINT IN **BLACK INK ONLY**

APPLICANT INFORMATION (Owner)				AGENT INFORMATION (If Applying on Behalf of Owner)			
Name:	MaineDOT			Name:			
Mailing Address:	16 State House Station			Mailing Address:			
Town:	Augusta			Town:			
State and Zip Code:	ME, 04333-0016			State and Zip Code:			
Daytime Phone #:	207-592-0523			Daytime Phone #:			
Email Address:	andrea.f.brady@maine.gov			Email Address:			
PROJECT INFORMATION							
Part of a larger project? (check one):	☐ Yes ☒ No	After the Fact? (check one):	☐ Yes ☒ No	Project involves work below mean low water? (check one):	☐ Yes ☒ No	Name of waterbody:	Casco Bay
Project Town:	Portland		Town Email Address:			Map and Lot Number:	
Brief Project Description:	Replace stormwater drainpipes and outfalls, including riprap protection at new outfalls below the HAT line (400 sf permanent; 800 sf temporary).						
Project Location & Brief Directions to Site:	Interstate 295 over Veranda St; Latitude: 43° 41' 09" N, Longitude: 70° 15' 08" W (associated area of roadway reconstruction - see attached figure).						

PERMIT BY RULE (PBR) SECTIONS (Check at least one): I am filing notice of my intent to carry out work which meets the requirements for Permit By Rule (PBR) under DEP Rules, Chapter 305. I and my agents, if any, have read and will comply with all of the standards in the Sections checked below.

☐ Sec. (2) Act. Adj. to Protected Natural Res.	☐ Sec. (10) Stream Crossing	☐ Sec. (17) Transfers/Permit Extension
☐ Sec. (3) Intake Pipes	☒ Sec. (11) State Transportation Facil.	☐ Sec. (18) Maintenance Dredging
☐ Sec. (4) Replacement of Structures	☐ Sec. (12) Restoration of Natural Areas	☐ Sec. (19) Activities in/on/over significant vernal pool habitat
☐ Sec. (5) REPEALED	☐ Sec. (13) F&W Creation/Enhance/Water Quality Improvement	☐ Sec. (20) Activities located in/on/over high or moderate value inland waterfowl & wading bird habitat or shorebird feeding & roosting areas
☐ Sec. (6) Movement of Rocks or Vegetation	☐ Sec. (14) REPEALED	
☐ Sec. (7) Outfall Pipes	☐ Sec. (15) Public Boat Ramps	
☐ Sec. (8) Shoreline stabilization	☐ Sec. (16) Coastal Sand Dune Projects	
☐ Sec. (9) Utility Crossing		

NOTE: Municipal permits *may* also be required. Contact your local code enforcement office for more information. Federal permits may be required for stream crossings and for projects involving wetland fill. Contact the Army Corps of Engineers at the Maine Project Office for more information.

NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS

- ☒ **Attach** all required submissions for the PBR Section(s) checked above. The required submissions for each PBR Section are outlined in Chapter 305 and may differ depending on the Section you are submitting under.
 - ☒ **Attach** a check for the correct fee made payable to: "Treasurer, State of Maine". The current fee for NRPA PBR Notifications can be found at the Department's website: <http://www.maine.gov/dep/feeschedule.pdf>
 - ☒ **Attach** a location map that clearly identifies the site (U.S.G.S. topo map, Maine Atlas & Gazetteer, or similar).
 - ☐ **Attach Proof of Legal Name** if applicant is a corporation, LLC, or other legal entity. Provide a copy of Secretary of State's registration information (available at <http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x>)
- Individuals and municipalities are not required to provide any proof of identity.

I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules.

I also understand that this PBR becomes effective 14 calendar days after receipt by the Department *unless the Department approves or denies the PBR prior to that date.*

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in the rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant:	<i>Andrew F. Brady</i>	Date:	1/7/2020

Keep a copy as a record of permit. Send the form with attachments via certified mail or hand deliver to the Maine Dept. of Environmental Protection at the appropriate regional office listed below. The DEP will send a copy to the Town Office as evidence of the DEP's receipt of notification. No further authorization by DEP will be issued after receipt of notice. Permits are valid for two years. **Work carried out in violation of any standard is subject to enforcement action.**

AUGUSTA DEP
17 STATE HOUSE STATION
AUGUSTA, ME 04333-0017
(207)287-7688

PORTLAND DEP
312 CANCO ROAD
PORTLAND, ME 04103
(207)822-6300

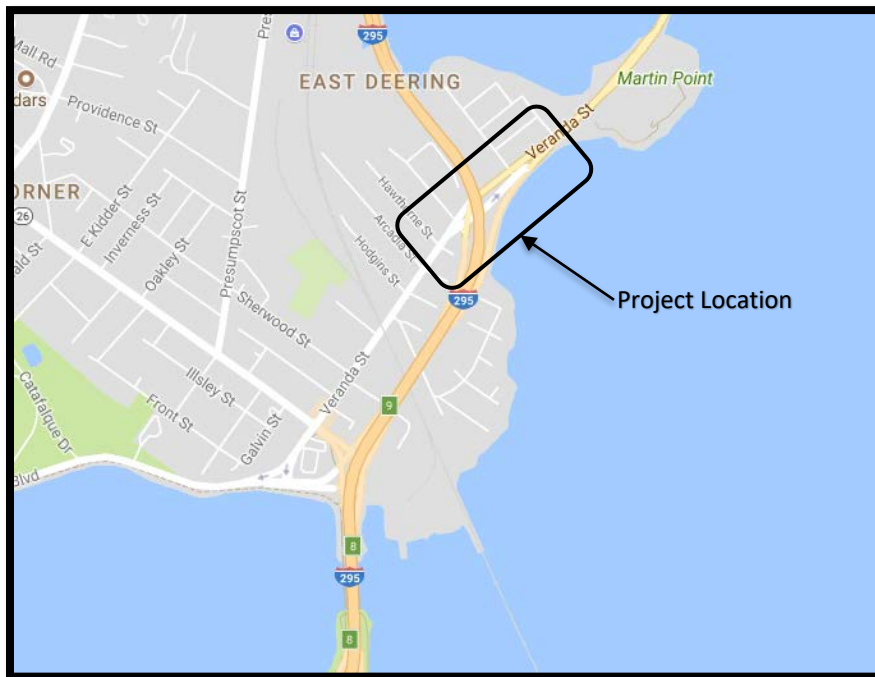
BANGOR DEP
106 HOGAN ROAD
BANGOR, ME 04401
(207)941-4570

PRESQUE ISLE DEP
1235 CENTRAL DRIVE
PRESQUE ISLE, ME 04769
(207)764-0477

OFFICE USE ONLY	Ck.#		Staff	Staff	
PBR #	FP	Date	Acc. Date	Def. Date	After Photos

LOCATION MAP

Portland, Interstate 295 #5933, WIN 21745.00
I-295 over Veranda Street



Latitude: 43° 41' 09" N, Longitude: 70° 15' 08" W

11. State transportation facilities

A. Applicability

- (1) This section applies to the maintenance, repair, reconstruction, rehabilitation, replacement or minor construction of a State Transportation Facility carried out by, or under the authority of, the Maine Department of Transportation (MaineDOT) or the Maine Turnpike Authority, including any testing or preconstruction engineering, and associated technical support services.
- (2) This section does not apply to an activity within a coastal sand dune system.

NOTE: The construction of a transportation facility other than roads and associated facilities may be subject to the Storm Water Management Law, 38 M.R.S.A. Section 420-D.

B. Standards

- (1) Photographs of the area to be altered by the activity must be taken before work on the site begins. The photographs must be kept on file and be made available at the request of the DEP.
- (2) The activity must be reviewed by the Department of Inland Fisheries and Wildlife and the Department of Marine Resources, as applicable. The applicant must coordinate with the reviewing agencies and incorporate any recommendations from those agencies into the performance of the activity.
- (3) All construction activities undertaken must be detailed in a site-specific Soil Erosion and Water Pollution Control Plan and conducted in accordance with MaineDOT's Best Management Practices for Erosion and Sediment Control, dated January 2000, and Standard Specifications, dated December 2002.
- (4) Alignment changes may not exceed a distance of 200 feet between the old and new center lines in any natural resource.
- (5) The activity may not alter more than 300 feet of shoreline (both shores added together) within a mile stretch of any river, stream or brook, including any bridge width or length of culvert.
- (6) The activity may not alter more than 150 feet of shoreline (both shores added together) within a mile stretch of any outstanding river segment identified in 38 M.R.S.A. 480-P, including any bridge width or length of culvert.
- (7) The activity must minimize wetland intrusion. The activity is exempt from the provisions of Chapter 310, the Wetland and Waterbodies Protection Rules, if the activity alters less than 15,000 square feet of natural resources per mile of roadway (centerline measurement) provided that the following impacts are not exceeded within the 15,000 square foot area:
 - (a) 1,000 square feet of coastal wetland consisting of salt tolerant vegetation or shellfish habitat; or

(b) 5,000 square feet of coastal wetland not containing salt tolerant vegetation or shellfish habitat; or

(c) 1,000 square feet of a great pond.

All other activities must be performed in compliance with all sections of Chapter 310, the Wetland Protection Rules, except 310.2(C), 5(A), 9(A), 9(B) and 9(C).

- (8) The activity may not permanently block any fish passage in any watercourse containing fish. The applicant must coordinate with the reviewing agencies listed in paragraph 2 above to improve fish passage and incorporate any recommendations from those agencies into the performance of the activity.

NOTE: For guidance on meeting the design objectives for fish passage, including peak flow, maximum velocity, mining depth and gradient, see the MaineDOT Waterbody and Wildlife Crossing Policy and Design Guide (July 2008), developed in conjunction with state and federal resource and regulatory agencies.

- (9) Rocks may not be removed from below the normal high water line of any coastal wetland, freshwater wetland, great pond, river, stream or brook except to the minimum extent necessary for completion of work within the limits of construction.
- (10) If work is performed in a river, stream or brook that is less than three feet deep at the time and location of the activity, the applicant must isolate the work area from the resource and divert stream flows around the work area, maintaining downstream flows while work is in progress.
- (11) Wheeled or tracked equipment may not operate in the water. Equipment operating on the shore may reach into the water with a bucket or similar extension. Equipment may cross streams on rock, gravel or ledge bottom. If avoiding the operation of wheeled or tracked equipment in the water is not possible, the applicant must explain the need to operate in the water. Approval from the DEP to operate in the water must be in writing, and any recommendations from the DEP must be incorporated into the performance of the activity.
- (12) All wheeled or tracked equipment that must travel or work in a vegetated wetland area must travel and work on mats or platforms.
- (13) Any debris or excavated material must be stockpiled either outside the wetland or on mats or platforms. Erosion and sediment control best management practices must be used, where necessary, to prevent sedimentation. Any debris generated during the activity must be prevented from washing downstream and must be removed from the wetland or water body. Disposal of debris must be in conformance with the Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Section 1301 *et seq.*
- (14) Work below the normal high water line of a great pond, river, stream or brook must be done at low water except for emergency work or work agreed to by the resource agencies listed in paragraph 2 above.
- (15) Perimeter controls must be installed before the work starts. Disturbance of natural resources beyond the construction limits shown on the plans is not allowed under this rule.

NOTE: Guidance on the location of construction limits can be obtained from the on site Construction Manager.

- (16) The use of untreated lumber is preferred. Lumber pressure treated with chromated copper arsenate (CCA) may be used only if necessary and only if use is allowed under federal law and not prohibited from sale under 38 M.R.S.A. 1682, and provided it is cured on dry land in a manner that exposes all surfaces to the air for a period of at least 21 days prior to construction. Wood treated with creosote or pentachlorophenol may not be used where it will contact water.
- (17) A temporary road for equipment access must be constructed of crushed stone, blasted ledge, or similar materials that will not cause sedimentation or restrict fish passage. Such roads must be completely removed at the completion of the activity. In addition, any such temporary roads which are in rivers, streams or brooks, must allow for a passage of stormwater flows associated with a 10-year storm.
- (18) Non-native species may not be planted in restored areas.
- (19) Disposal of debris must be in conformance with Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Sections 1301 *et seq.*
- (20) Disturbance of vegetation must be avoided, if possible. Where vegetation is disturbed outside of the area covered by any road or structure construction, it must be reestablished immediately upon completion of the activity and must be maintained.
- (21) A vegetated area at least 25 feet wide must be established and maintained between any new stormwater outfall structure and the high water line of any open water body. A velocity reducing structure must be constructed at the outlet of the stormwater outfall that will create sheet flow of stormwater, and prevent erosion of soil within the vegetated buffer. If the 25 foot vegetated buffer is not practicable, the applicant must explain the reason for a lesser setback in writing. Approval from the DEP must be in writing and any recommendations must be incorporated into the activity.

C. Definitions. The following terms, as used in this chapter, have the following meanings, unless the context indicates otherwise:

- (1) Diversion. The rerouting of a river, stream or brook around a construction site and then back to the downstream channel.
- (2) Fill. a. (verb) To put into or upon, supply to, or allow to enter a water body or wetland any earth, rock, gravel, sand, silt, clay, peat, or debris; b. (noun) Material, other than structures, placed in or immediately adjacent to a wetland or water body.
- (3) Floodplain wetlands. Freshwater wetlands that are inundated with flood water during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Agency or other site specific information.
- (4) Riprap. Heavy, irregularly shaped rocks that are fit into place, without mortar, on a slope as defined in the MaineDOT Standard Specifications, dated **November 2014**.



Environmental Summary Sheet

WIN: 21745.00
 Town: Portland
 CPD Team Leader: Andrea Brady
 ENV Field Contact: Val Derosier

Date Submitted: March 17, 2020

NEPA Complete: 2/6/2020-Programmatic Categorical Exclusion

☒	Section 106 SHPO Concurrence – No effect Section 106 Resources: None
☒	Section 4(f) and 6(f) Section 4(f) Review Complete. No 4f properties Section 6(f) No Takes
☒	Maine Department of Inland Fisheries and Wildlife Essential Habitat Not Applicable Timing Window: Not Applicable
☒	Section 7 Species of Concern: Atlantic salmon, Shortnose sturgeon, Atlantic sturgeon- Not Likely to Adversely Affect Comments/References: FHWA/GARFO Programmatic Consultation with NMFS complete 1/8/20. Special Conditions apply; see Special Provision 105. Species of Concern: Northern Long-Eared Bat – Not Likely to Adversely Affect Comments/References: Streamlined 4(d) Consultation Complete
☒	Essential Fish Habitat Coastal EFH – Adverse Effect, Not Substantial. Special Conditions apply; see Special Provision 105.
☒	Maine Department of Conservation/Public Lands, Submerged Land Lease Not Applicable
☒	Maine Land Use Regulation Commission Not Applicable
☒	Maine Department of Environmental Protection PBR Section 11 submitted 1/7/2020
☒	Army Corps of Engineers, Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.

Category 2

- Work Start Notification Form and Compliance Certification Form must be completed by the Resident and/or ENV Field Contact and submitted to the Corps Maine Project Office with copy to Andrea Brady.
- Work below Highest Annual Tide elevation completed in the dry is allowed anytime.
- In-lieu fee payment for coastal wetland impacts required; Contracts must notify MaineDOT ENV Office (Kristen Chamberlain) upon intent to award to process payment.

*Applicable Standards and Permits are included with the contract

☒	Stormwater Review N/A		
☒	Special Provisions Required		
	Special Provision 105-Timing of Work Restriction	N/A ☐	Applicable ☒
	Special Provision 656-Minor Soil Disturbance	N/A ☒	Applicable ☐
	Standard Specification 656-Erosion Control Plan	N/A ☐	Applicable ☒
	Special Provision 203-Dredge Spec	N/A ☒	Applicable ☐
	General Note for Hazardous Waste	N/A ☐	Applicable ☒
	Special Provision 203-Hazardous Waste	N/A ☒	Applicable ☐
	Special Provision 105.9	N/A ☒	Applicable ☐

*All permits and approvals based on plans/scope as of: 2/7/20



Environmental Summary Sheet

WIN: 23545.00

Date Submitted: January 6, 2020

Town: Portland

CPD Team Leader: Andrea Brady

ENV Field Contact: Valerie Derosier

NEPA Complete: 12/10/19 Programmatic Categorical Exclusion

☒ **Section 106**
SHPO Concurrence – Programmatic Agreement - D
Section 106 Resources: None

☒ **Section 4(f) and 6(f)**
Section 4(f)
Review Complete. No Use
Section 6(f)
No Takes

☒ **Maine Department of Inland Fisheries and Wildlife Essential Habitat**
Not Applicable

☒ **Section 7**
Species of Concern: Northern Long-Eared Bat
Comments/References: No effect

☒ **Essential Fish Habitat**
Not applicable

☒ **Maine Department of Conservation/Public Lands, Submerged Land Lease**
Not Applicable

☒ **Maine Land Use Regulation Commission**
Not Applicable

☒ **Maine Department of Environmental Protection**
Exempt from Permitting 38 M.R.S.A. Section 480-Q2d

☒ **Army Corps of Engineers, Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.**
No jurisdiction – no wetland resources; bridge is over a railroad.

☒ **Stormwater Review**
MS4 Less than 1 acre disturbed; no further action required

☒ Special Provisions Required		
Special Provision 105-Timing of Work Restriction	N/A ☒	Applicable ☐
Special Provision 656-Minor Soil Disturbance	N/A ☒	Applicable ☐
Standard Specification 656-Erosion Control Plan	N/A ☐	Applicable ☒
Special Provision 203-Dredge Spec	N/A ☒	Applicable ☐
General Note for Hazardous Waste	N/A ☒	Applicable ☐
Special Provision 203-Hazardous Waste	N/A ☒	Applicable ☐
Special Provision 105.9	N/A ☒	Applicable ☐

**All permits and approvals based on plans/scope as of: 8/2/19*



Environmental Summary Sheet

WIN: 23615.03
Town: Portland I-295 S
CPD Team Leader: Andrea Brady
ENV Field Contact: Valerie Derosier

Date Submitted: 1/7/2020

NEPA Complete: 02/25/2019 Programmatic Categorical Exclusion

☒	Section 106 PA- E Section 106 Resources: None		
☒	Section 4(f) and 6(f) <u>Section 4(f)</u> Review Complete - No Use <u>Section 6(f)</u> Not Applicable - No Takes		
☒	Maine Department of Inland Fisheries and Wildlife Essential Habitat Not Applicable Timing Window:		
☒	Section 7 No Effect Species of Concern: Northern long-eared bat Comments/References: No tree clearing		
☒	Essential Fish Habitat Not applicable (no in-water work proposed)		
☒	Maine Department of Conservation/Public Lands, Submerged Land Lease Not Applicable		
☒	Maine Land Use Planning Commission No LUPC Permit Required <i>*Applicable Standards and Permits are included with the contract</i>		
☒	Maine Department of Environmental Protection No DEP Permit Required <i>*Applicable Standards and Permits are included with the contract</i>		
☒	Army Corps of Engineers, Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. No ACOE Permit Required <i>*Applicable Standards and Permits are included with the contract</i>		
☒	Stormwater Review Not applicable		
☒	Special Provisions Required		
	Special Provision 105-Timing of Work Restriction	N/A ☒	Applicable ☐
	Special Provision 656-Minor Soil Disturbance	N/A ☒	Applicable ☐
	Standard Specification 656-Erosion Control Plan	N/A ☐	Applicable ☒
	Special Provision 203-Dredge Spec	N/A ☒	Applicable ☐
	General Note for Hazardous Waste	N/A ☒	Applicable ☐
	Special Provision 203-Hazardous Waste	N/A ☒	Applicable ☐
	Special Provision 105.9	N/A ☒	Applicable ☐

*All permits and approvals based on plans/scope as of: 12/27/2019