

Updated 04/28/17

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:

- 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, November 2014 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 <http://www.maine.gov/mdot/civilrights/dbe.htm>

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

FHWA DBE GOAL NOTICE FFY 2016-18
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 has established a DBE Program for disadvantaged business participation in the federal-aid highway and bridge construction program; MaineDOT contracts covered by the program include consulting, construction, supplies, manufacturing, and service contracts.

For FFY 2016-18 (October 1, 2015 through September 30, 2018) MaineDOT has established an annual DBE participation goal of **2.0%** 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, 2018. 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 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 2.0% goal without the need to impose contract goals. DBE firms are listed on the MaineDOT website at:

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

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>**

Rev. 05/13

Maine Department of Transportation Civil Rights Office

Directory of Certified Disadvantaged Business Enterprises

Listing can be found at:

<http://www.maine.gov/mdot/civilrights/dbe.htm>

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 Bridge Replacement Projects, Multi-Use Trail, Bridge Construction, and Traffic Signal Improvements in the city of **GARDINER**" will be received from contractors at the Reception Desk, Maine DOT Building, Capitol Street, Augusta, Maine, until 11:00 o'clock A.M. (prevailing time) on December 12, 2018 and at that time and place publicly opened and read. Bids will be accepted from all bidders. The lowest responsive bidder must have completed, or successfully complete, a bridge, or project specific prequalification to be considered for the award of this contract. **We now accept electronic bids for those 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: WIN 018735.00 Maine Federal Aid Project No. STP-1873(500), WIN 018736.00 STP-1873(600) WIN 018736.10 1873610, WIN 022684.00 STP-2268(400)

Location: In Kennebec County, Route 201 Bridge Street Bridge (WIN 018735.00) over Cobbossee Stream approximately 0.04 of a mile northerly of Water Street. Route 24 Main Avenue Bridge (WIN 018736.00) over Cobbossee Stream approximately 0.20 of a mile southerly of Route 27. Multi-use path construction Beginning at the Kennebec River Rail Trail and extending southerly 0.12 of a mile to Arcade Street (WIN 018736.10), then beginning at Arcade Street and extending westerly 0.16 of a mile to the Bridge Street Bridge on Route 201. Replace traffic signals at Route 126 and at Route 27 (WIN 022684.00).

Scope of Work: Bridge Street bridge replacement, Main Avenue bridge replacement, multi-use path construction, and replacement of traffic signals plus other incidental work.

The basis of award will be Section 1 combined with chosen Alternate 1 (Section 2), or Section 1 combined with chosen Alternate 2 (Section 3).

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 Leanne Timberlake** 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 Maine DOT Building in Augusta. 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 \$196.00 (\$206.00 by mail). Half size plans \$98.00 (\$102.50 by mail), Bid Book \$10 (\$13 by mail), Single Sheets \$2, payment in advance, all non-refundable.

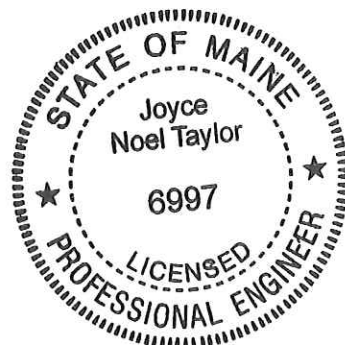
Each Bid must be made upon blank forms provided by the Department and must be accompanied by a bid bond at 5% of the bid amount or an official bank check, cashier's check, certified check, certificate of deposit, or United States postal money order in the amount of \$325,000.00 payable to Treasurer, 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, November 2014 Edition", price \$10 [\$15 by mail], and Standard Details, November 2014 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 Maine DOT to reject any or all bids.

Augusta, Maine
November 14, 2018




JOYCE NOEL TAYLOR P.E.
CHIEF ENGINEER

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)

10/30/2018

Maine Department of Transportation

Proposal Schedule of Items

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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	2.000 EA				
0020	201.24 REMOVING STUMP	4.000 EA				
0030	202.08 REMOVING BUILDING NO.: 1	LUMP SUM		LUMP SUM		
0040	202.08 REMOVING BUILDING NO.: 2	LUMP SUM		LUMP SUM		
0050	202.08 REMOVING BUILDING NO.: 3	LUMP SUM		LUMP SUM		
0060	202.15 REMOVING MANHOLE OR CATCH BASIN	6.000 EA				
0070	202.19 REMOVING EXISTING BRIDGE	LUMP SUM		LUMP SUM		
0080	202.202 REMOVING PAVEMENT SURFACE	4,980.000 SY				
0090	203.20 COMMON EXCAVATION	5,020.000 CY				
0100	203.2312 HEALTH AND SAFETY PLAN	LUMP SUM		LUMP SUM		
0110	203.2318 DISPOSAL OF SPECIAL WASTE	150.000 T				
0120	203.2333 DISPOSAL OF SPECIAL EXCAVATION	1,100.000 T				
0130	203.24 COMMON BORROW	77.000 CY				

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
0140	203.25 GRANULAR BORROW	2,105.000 CY	_____	 _____	_____	 _____
0150	203.33 SPECIAL FILL	150.000 CY	_____	 _____	_____	 _____
0160	206.082 STRUCTURAL EARTH EXCAVATION - MAJOR STRUCTURES	2,130.000 CY	_____	 _____	_____	 _____
0170	304.10 AGGREGATE SUBBASE COURSE - GRAVEL	4,140.000 CY	_____	 _____	_____	 _____
0180	304.14 AGGREGATE BASE COURSE - TYPE A	120.000 CY	_____	 _____	_____	 _____
0190	403.2081 12.5 MM POLYMER MODIFIED HOT MIX ASPHALT	957.000 T	_____	 _____	_____	 _____
0200	403.209 HOT MIX ASPHALT 9.5 MM (SIDEWALKS, DRIVES, INCIDENTALS)	286.000 T	_____	 _____	_____	 _____
0210	403.213 HOT MIX ASPHALT 12.5 MM BASE	485.000 T	_____	 _____	_____	 _____
0220	403.2131 12.5 MM POLYMER MODIFIED HMA BASE	931.000 T	_____	 _____	_____	 _____
0230	409.15 BITUMINOUS TACK COAT - APPLIED	739.000 G	_____	 _____	_____	 _____
0240	461.131 TEMPORARY PAVEMENT	90.000 T	_____	 _____	_____	 _____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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	501.222 MICROPILES BR ST A1 RET WALL 7- 5/8" DIA	1,100.000 LF	_____	 _____	_____	 _____
0260	501.222 MICROPILES BR ST ABUTMENTS 9- 5/8" DIA	4,160.000 LF	_____	 _____	_____	 _____
0270	501.231 DYNAMIC LOADING TEST	4.000 EA	_____	 _____	_____	 _____
0280	501.2331 VERIFICATION LOAD TEST	2.000 EA	_____	 _____	_____	 _____
0290	501.2341 MICROPILE PROOF LOAD TEST	6.000 EA	_____	 _____	_____	 _____
0300	501.25 STEEL CASING 24 INCH SCHED 40 GALV	52.000 LF	_____	 _____	_____	 _____
0310	501.54 STEEL H-BEAM PILES 117 LBS/FT, DELIVERED	710.000 LF	_____	 _____	_____	 _____
0320	501.541 STEEL H-BEAM PILES 117 LBS/FT, IN PLACE	710.000 LF	_____	 _____	_____	 _____
0330	501.804 DRILLING EQUIPMENT MOBILIZATION	LUMP SUM	LUMP SUM		_____	 _____
0340	501.807 REMOVAL OF OBSTRUCTIONS PENETRATION	80.000 HOUR	_____	 _____	_____	 _____
0350	501.90 PILE TIPS	10.000 EA	_____	 _____	_____	 _____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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	501.91 PILE SPLICES	20.000 EA				
0370	501.92 PILE DRIVING EQUIPMENT MOBILIZATION	LUMP SUM		LUMP SUM		
0380	502.219 STRUCTURAL CONCRETE, ABUTMENTS AND RETAINING WALLS	LUMP SUM		LUMP SUM		
0390	502.26 STRUCTURAL CONCRETE ROADWAY AND SIDEWALK SLABS ON STEEL BRIDGES	LUMP SUM		LUMP SUM		
0400	502.48 LOW PERMEABILITY CONCRETE	7.000 CY				
0410	502.49 STRUCTURAL CONCRETE CURBS AND SIDEWALKS	LUMP SUM		LUMP SUM		
0420	502.565 CONCRETE FILL	66.000 CY				
0430	502.77 FIBER REINFORCED POLYMER BRIDGE DRAIN - TYPE: D	5.000 EA				
0440	503.12 REINFORCING STEEL, FABRICATED AND DELIVERED	7,600.000 LB				
0450	503.13 REINFORCING STEEL, PLACING	7,600.000 LB				
0460	503.17 MECHANICAL WELDED SPLICE	207.000 EA				

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
0470	503.26 STAINLESS STEEL REINFORCEMENT - FABRICATED & DELIVERED	127,300.000 LB	_____	 _____	_____	 _____
0480	503.27 STAINLESS STEEL REINFORCEMENT - PLACING	127,300.000 LB	_____	 _____	_____	 _____
0490	504.702 STRUCTURAL STEEL FABRICATED AND DELIVERED, WELDED	LUMP SUM	LUMP	 SUM	_____	 _____
0500	504.71 STRUCTURAL STEEL ERECTION	LUMP SUM	LUMP	 SUM	_____	 _____
0510	504.96 METAL STAIRS	LUMP SUM	LUMP	 SUM	_____	 _____
0520	505.08 SHEAR CONNECTORS	LUMP SUM	LUMP	 SUM	_____	 _____
0530	506.9104 THERMAL SPRAY COATING - SHOP APPLIED	LUMP SUM	LUMP	 SUM	_____	 _____
0540	507.0834 WYOMING STEEL BRIDGE RAILING MODIFIED	LUMP SUM	LUMP	 SUM	_____	 _____
0550	508.14 HIGH PERFORMANCE WATERPROOFING MEMBRANE	LUMP SUM	LUMP	 SUM	_____	 _____
0560	511.07 COFFERDAM: ABUT NO.1	LUMP SUM	LUMP	 SUM	_____	 _____
0570	511.07 COFFERDAM: ABUT NO.1, MULTI USE PATH	LUMP SUM	LUMP	 SUM	_____	 _____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
0580	511.07 COFFERDAM: ABUT NO.2	LUMP SUM	LUMP	SUM	_____	_____
0590	511.07 COFFERDAM: ABUT NO.2, MULTI USE PATH	LUMP SUM	LUMP	SUM	_____	_____
0600	511.07 COFFERDAM: PIER NO.2 BR ST	LUMP SUM	LUMP	SUM	_____	_____
0610	511.07 COFFERDAM: PIER NO.3 BR ST	LUMP SUM	LUMP	SUM	_____	_____
0620	512.081 FRENCH DRAINS	LUMP SUM	LUMP	SUM	_____	_____
0630	514.06 CURING BOX FOR CONCRETE CYLINDERS	1.000 EA	_____	_____	_____	_____
0640	515.21 PROTECTIVE COATING FOR CONCRETE SURFACES	LUMP SUM	LUMP	SUM	_____	_____
0650	518.60 REPAIR OF VERTICAL SURFACES < 8 IN.	10.000 SF	_____	_____	_____	_____
0660	518.61 REPAIR OF VERTICAL SURFACES >= 8 IN.	4.000 CY	_____	_____	_____	_____
0670	520.232 EXPANSION DEVICE - ASPHALTIC PLUG JOINT	177.000 LF	_____	_____	_____	_____
0680	523.52 BEARING INSTALLATION	14.000 EA	_____	_____	_____	_____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
0690	523.5402 LAMINATED ELASTOMERIC BEARINGS, EXPANSION	14.000 EA				
0700	524.301 TEMPORARY STRUCTURAL SUPPORT A1 DINER	LUMP SUM	LUMP	SUM		
0710	524.301 TEMPORARY STRUCTURAL SUPPORT CONSOLIDATED COMM.	LUMP SUM	LUMP	SUM		
0720	524.301 TEMPORARY STRUCTURAL SUPPORT HORIZ SLIDE	LUMP SUM	LUMP	SUM		
0730	526.301 TEMPORARY CONCRETE BARRIER TYPE I	LUMP SUM	LUMP	SUM		
0740	526.304 TEMPORARY CONCRETE BARRIER, ANCHORED	LUMP SUM	LUMP	SUM		
0750	526.3401 PERMANENT CONCRETE TRANSITION BARRIER - MODIFIED	7.000 EA				
0760	527.34 WORK ZONE CRASH CUSHIONS	3.000 UN				
0770	530.01 STEEL PEDESTRIAN BRIDGE	LUMP SUM	LUMP	SUM		
0780	534.76 PRECAST ABUTMENT	LUMP SUM	LUMP	SUM		
0790	534.7601 PRECAST APPROACH SLAB	LUMP SUM	LUMP	SUM		

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
0800	603.155 12 INCH REINFORCED CONCRETE PIPE CLASS III	32.000 LF	_____	_____	_____	_____
0810	603.159 12 INCH CULVERT PIPE OPTION III	102.000 LF	_____	_____	_____	_____
0820	603.175 18 INCH REINFORCED CONCRETE PIPE CLASS III	40.000 LF	_____	_____	_____	_____
0830	603.179 18 INCH CULVERT PIPE OPTION III	192.000 LF	_____	_____	_____	_____
0840	603.195 24 INCH REINFORCED CONCRETE PIPE CLASS III	77.000 LF	_____	_____	_____	_____
0850	603.199 24 INCH CULVERT PIPE OPTION III	72.000 LF	_____	_____	_____	_____
0860	604.072 CATCH BASIN TYPE A1-C	11.125 EA	_____	_____	_____	_____
0870	604.092 CATCH BASIN TYPE B1-C	5.000 EA	_____	_____	_____	_____
0880	604.15 MANHOLE	2.125 EA	_____	_____	_____	_____
0890	604.154 72 INCH MANHOLE	1.000 EA	_____	_____	_____	_____
0900	604.158 UTILITY VAULT	3.000 EA	_____	_____	_____	_____
0910	604.16 ALTERING CATCH BASIN TO MANHOLES	5.000 EA	_____	_____	_____	_____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
0920	604.18 ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	28.000 EA	_____	 _____	_____	 _____
0930	604.245 CATCH BASIN TYPE F4-C	1.000 EA	_____	 _____	_____	 _____
0940	604.247 CATCH BASIN TYPE F5-C	1.000 EA	_____	 _____	_____	 _____
0950	604.252 CATCH BASIN TYPE A5-C	2.625 EA	_____	 _____	_____	 _____
0960	604.2521 60" CATCH BASIN A5-C	1.000 EA	_____	 _____	_____	 _____
0970	604.30 SPECIAL CATCH BASIN	1.000 EA	_____	 _____	_____	 _____
0980	605.09 6 INCH UNDERDRAIN TYPE B	723.000 LF	_____	 _____	_____	 _____
0990	605.11 12 INCH UNDERDRAIN TYPE C	280.000 LF	_____	 _____	_____	 _____
1000	605.12 15 INCH UNDERDRAIN TYPE C	54.000 LF	_____	 _____	_____	 _____
1010	605.13 18 INCH UNDERDRAIN TYPE C	107.000 LF	_____	 _____	_____	 _____
1020	606.1301 31" W-BM GR, MID-WAY SPLICE-SGL FACED	118.750 LF	_____	 _____	_____	 _____
1030	606.1304 31" W-BM GR, MID-WAY SPLICE-OVER 15' RAD	31.250 LF	_____	 _____	_____	 _____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
1040	606.1306 31" W-BM GR, MID-WAY SPLICE TANGENT TERMINAL	2.000 EA	_____	 _____	_____	 _____
1050	606.1307 BRIDGE TRANSITION (ASYMMETRICAL) - TYPE 1	3.000 EA	_____	 _____	_____	 _____
1060	606.1307 BRIDGE TRANSITION (ASYMMETRICAL) - TYPE 1	1.000 EA	_____	 _____	_____	 _____
1070	606.1721 BRIDGE TRANSITION - TYPE 1	2.000 EA	_____	 _____	_____	 _____
1080	606.259 ANCHORAGE ASSEMBLY	3.000 EA	_____	 _____	_____	 _____
1090	606.353 REFLECTORIZED FLEXIBLE GUARDRAIL MARKER	16.000 EA	_____	 _____	_____	 _____
1100	606.65 GUARDRAIL THRIE BEAM - SINGLE RAIL	37.500 LF	_____	 _____	_____	 _____
1110	606.66 TERMINAL END THRIE BEAM	2.000 EA	_____	 _____	_____	 _____
1120	607.22 CEDAR RAIL FENCE	550.000 LF	_____	 _____	_____	 _____
1130	608.15 BRICK SIDEWALK WITH BITUMINOUS BASE	521.000 SY	_____	 _____	_____	 _____
1140	608.171 CONCRETE SIDEWALK WITH BRICK BORDER	174.000 SY	_____	 _____	_____	 _____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
1150	608.26 CURB RAMP DETECTABLE WARNING FIELD	596.000 SF	_____	 _____	_____	 _____
1160	609.11 VERTICAL CURB TYPE 1	1,658.000 LF	_____	 _____	_____	 _____
1170	609.12 VERTICAL CURB TYPE 1 - CIRCULAR	547.000 LF	_____	 _____	_____	 _____
1180	609.234 TERMINAL CURB TYPE 1 - 4 FOOT	4.000 EA	_____	 _____	_____	 _____
1190	609.2341 TERMINAL CURB TYPE 1 - 4 FOOT - CIRCULAR	2.000 EA	_____	 _____	_____	 _____
1200	609.238 TERMINAL CURB TYPE 1 - 8 FOOT	37.000 EA	_____	 _____	_____	 _____
1210	609.2381 TERMINAL CURB TYPE 1 - 8' CIRCULAR	35.000 EA	_____	 _____	_____	 _____
1220	609.26 CURB TRANSITION SECTION B TYPE 1	1.000 EA	_____	 _____	_____	 _____
1230	609.31 CURB TYPE 3	27.000 LF	_____	 _____	_____	 _____
1240	609.34 CURB TYPE 5	640.000 LF	_____	 _____	_____	 _____
1250	609.35 CURB TYPE 5 - CIRCULAR	95.000 LF	_____	 _____	_____	 _____
1260	610.08 PLAIN RIPRAP	49.000 CY	_____	 _____	_____	 _____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 1 Main 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
1270	610.16 HEAVY RIPRAP	1,910.000 CY				
1280	613.319 EROSION CONTROL BLANKET	126.000 SY				
1290	615.07 LOAM	442.000 CY				
1300	615.085 LOAM/WOODWASTE MULCH MIX	70.000 CY				
1310	618.13 SEEDING METHOD NUMBER 1	17.000 UN				
1320	618.14 SEEDING METHOD NUMBER 2	4.000 UN				
1330	618.143 SPECIAL SEED MIX:	11.000 UN				
1340	618.146 SEEDING HYDROMULCH MEDIUM	11.000 UN				
1350	619.12 MULCH	21.000 UN				
1360	619.14 EROSION CONTROL MIX	70.000 CY				
1370	620.58 EROSION CONTROL GEOTEXTILE	1,480.000 SY				
1380	620.66 DRAINAGE GEOCOMPOSITE	87.000 SY				
1390	621.178 MEDIUM DECIDUOUS TREES (6 FOOT - 8 FOOT) GROUP A	6.000 EA				

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
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SECTION: 1 Main 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
1400	621.388 DWARF EVERGREENS (12 INCH - 15 INCH)	48.000 EA	_____	 _____	_____	 _____
1410	621.5351 DECIDUOUS SHRUBS (15 INCH - 18 INCH) GROUP A	60.000 EA	_____	 _____	_____	 _____
1420	621.54 DECIDUOUS SHRUBS (18 INCH - 24 INCH) GROUP A	12.000 EA	_____	 _____	_____	 _____
1430	621.71 HERBACEOUS PERENNIALS GROUP A	114.000 EA	_____	 _____	_____	 _____
1440	621.713 HERBACEOUS PERENNIALS & GROUND COVER	60.000 EA	_____	 _____	_____	 _____
1450	626.11 PRECAST CONCRETE JUNCTION BOX	18.000 EA	_____	 _____	_____	 _____
1460	626.21 METALLIC CONDUIT	390.000 LF	_____	 _____	_____	 _____
1470	626.22 NON-METALLIC CONDUIT	2,460.000 LF	_____	 _____	_____	 _____
1480	626.32 24 INCH FOUNDATION	17.000 EA	_____	 _____	_____	 _____
1490	626.332 30 INCH DIAMATER GREATER THAN 8 FEET LONG & 36 INCH DIAMETER, 42 INCH DIAMETER FOUNDATION	5.000 CY	_____	 _____	_____	 _____
1500	626.36 REMOVE OR MODIFY CONCRETE FOUNDATION	12.000 EA	_____	 _____	_____	 _____

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Project(s): 018735.00, 018736.00, 018736.10,
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SECTION: 1 Main 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
1510	626.38 GROUND MOUNTED CABINET FOUNDATION	1.000 EA	_____	 _____	_____	 _____
1520	627.513 TEMPORARY PAVEMENT MARKING TAPE, YELLOW OR WHITE	75.000 SF	_____	 _____	_____	 _____
1530	627.733 4" WHITE OR YELLOW PAINTED PAVEMENT MARKING LINE	3,320.000 LF	_____	 _____	_____	 _____
1540	627.75 WHITE OR YELLOW PAVEMENT & CURB MARKING	6,950.000 SF	_____	 _____	_____	 _____
1550	627.77 REMOVING PAVEMENT MARKINGS	840.000 SF	_____	 _____	_____	 _____
1560	627.78 TEMPORARY 4 INCH PAINTED PAVEMENT MARKING LINE, WHITE OR YELLOW	1,600.000 LF	_____	 _____	_____	 _____
1570	629.05 HAND LABOR, STRAIGHT TIME	108.000 HR	_____	 _____	_____	 _____
1580	631.12 ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	95.000 HR	_____	 _____	_____	 _____
1590	631.171 TRUCK - SMALL (INCLUDING OPERATOR)	5.000 HR	_____	 _____	_____	 _____
1600	631.172 TRUCK - LARGE (INCLUDING OPERATOR)	90.000 HR	_____	 _____	_____	 _____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
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SECTION: 1 Main 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
1610	631.18 CHAIN SAW RENTAL (INCLUDING OPERATOR)	5.000 HR	_____	 _____	_____	 _____
1620	631.20 STUMP CHIPPER (INCLUDING OPERATOR)	5.000 HR	_____	 _____	_____	 _____
1630	631.22 FRONT END LOADER (INCLUDING OPERATOR)	95.000 HR	_____	 _____	_____	 _____
1640	631.32 CULVERT CLEANER (INCLUDING OPERATOR)	30.000 HR	_____	 _____	_____	 _____
1650	634.160 HIGHWAY LIGHTING	LUMP SUM	LUMP SUM		_____	 _____
1660	634.2101 TYPE A LIGHT STANDARD	5.000 EA	_____	 _____	_____	 _____
1670	634.2102 TYPE B LIGHT STANDARD	5.000 EA	_____	 _____	_____	 _____
1680	634.2103 TYPE C LIGHT STANDARD	1.000 EA	_____	 _____	_____	 _____
1690	639.18 FIELD OFFICE TYPE A	1.000 EA	_____	 _____	_____	 _____
1700	643.62 RECTANGULAR RAPID FLASHING BEACON	2.000 EA	_____	 _____	_____	 _____
1710	643.64 FLASHING SIGN ASSEMBLY	1.000 EA	_____	 _____	_____	 _____
1720	643.71 TRAFFIC SIGNAL MODIFICATION	LUMP SUM	LUMP SUM		_____	 _____

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
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SECTION: 1 Main 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
1730	643.80 TRAFFIC SIGNALS AT BRIDGE & WATER STREETS	LUMP SUM	LUMP	SUM	_____	_____
1740	643.83 VIDEO DETECTION SYSTEM	LUMP SUM	LUMP	SUM	_____	_____
1750	643.91 MAST ARM POLE	1.000 EA	_____	_____	_____	_____
1760	643.92 PEDESTAL POLE	4.000 EA	_____	_____	_____	_____
1770	645.103 DEMOUNT GUIDE SIGN	2.000 EA	_____	_____	_____	_____
1780	645.106 DEMOUNT REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	39.000 EA	_____	_____	_____	_____
1790	645.1061 RELOCATE EXISTING SIGN ASSEMBLY AND POST	1.000 EA	_____	_____	_____	_____
1800	645.108 DEMOUNT POLE	19.000 EA	_____	_____	_____	_____
1810	645.113 REINSTALL GUIDE SIGN	2.000 EA	_____	_____	_____	_____
1820	645.116 REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	37.000 EA	_____	_____	_____	_____
1830	645.118 REINSTALL POLE	17.000 EA	_____	_____	_____	_____

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Project(s): 018735.00, 018736.00, 018736.10,
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SECTION: 1 Main 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
1840	645.271 REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS, TYPE I	153.000 SF				
1850	645.292 REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGNS TYPE II	97.000 SF				
1860	645.51 SPECIAL SIGNING	LUMP SUM				
1870	652.311 TYPE II BARRICADE	4.000 EA				
1880	652.312 TYPE III BARRICADE	41.000 EA				
1890	652.313 TEMPORARY PEDESTRIAN BARRICADE, ADA COMPLIANT	370.000 LF				
1900	652.33 DRUM	125.000 EA				
1910	652.34 CONE	215.000 EA				
1920	652.35 CONSTRUCTION SIGNS	2,500.000 SF				
1930	652.361 MAINTENANCE OF TRAFFIC CONTROL DEVICES	LUMP SUM				
1940	652.38 FLAGGER	5,574.000 HR				

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SECTION: 1 Main 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
1950	652.381 TRAFFIC OFFICER	484.000 HR				
1960	652.41 PORTABLE CHANGEABLE MESSAGE SIGN	7.000 EA				
1970	656.75 TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL	LUMP SUM		LUMP SUM		
1980	659.10 MOBILIZATION	LUMP SUM		LUMP SUM		
1990	660.21 ON-THE-JOB TRAINING (BID)	1,000.000 HR				
2000	802.10 12 INCH DUCTILE IRON WATERMAIN	170.000 LF				
2010	803.01 TEST PITS	16.000 EA				
2020	822.302 12 INCH DUCTILE IRON PIPE PREINSULATED	LUMP SUM		LUMP SUM		
2030	822.322 6 INCH DUCTILE IRON PIPE	30.000 LF				
2040	823.311 12 INCH GATE VALVE WITH BOX	2.000 EA				
2050	823.33 6 INCH GATE VALVE WITH BOX	1.000 EA				
2060	824.32 REMOVE/RESET HYDRANT	1.000 EA				

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SECTION: 1 Main 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
2070	825.321 1 INCH CORPORATION	1.000 EA				
2080	825.331 1" CURB STOP	1.000 EA				
2090	825.90 1 INCH PREINSULATED HEAT TRACED WATER PIPE	LUMP SUM		LUMP SUM		
2100	841.49 BOLLARDS - COLLAPSIBLE	2.000 EA				
2110	845.10 STRUCTURAL STEEL UTILITY SUPPORT CONSOLIDATED COMM.	LUMP SUM		LUMP SUM		
2120	910.301 SPECIAL WORK CONSOLIDATED COMM.	LUMP SUM		LUMP SUM		
2130	910.301 SPECIAL WORK SKEHANS TAX SIGN REMOVAL	LUMP SUM		LUMP SUM		
Section: 1			Total:			

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Proposal ID: 018735.00

Project(s): 018735.00, 018736.00, 018736.10,
022684.00

SECTION: 2

MAINE AVENUE PRECAST BRIDGE ALTERNATE

Alt Set ID: AL

Alt Mbr ID: 1

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
2140	403.2081 12.5 MM POLYMER MODIFIED HOT MIX ASPHALT	25.000 T	_____	 _____	_____	 _____
2150	403.2131 12.5 MM POLYMER MODIFIED HMA BASE	25.000 T	_____	 _____	_____	 _____
2160	409.15 BITUMINOUS TACK COAT - APPLIED	18.000 G	_____	 _____	_____	 _____
2170	502.49 STRUCTURAL CONCRETE CURBS AND SIDEWALKS	LUMP SUM	LUMP SUM	 _____	_____	 _____
2180	506.9104 THERMAL SPRAY COATING - SHOP APPLIED	LUMP SUM	LUMP SUM	 _____	_____	 _____
2190	508.14 HIGH PERFORMANCE WATERPROOFING MEMBRANE	LUMP SUM	LUMP SUM	 _____	_____	 _____
2200	530.04 PREFABRICATED BRIDGE STRUCTURE AND ASSEMBLY	LUMP SUM	LUMP SUM	 _____	_____	 _____
Section: 2			Total:	 _____	_____	 _____

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SECTION: 3 MAINE AVENUE NEXT BEAM ALTERNATE

Alt Set ID: AL

Alt Mbr ID: 2

Contractor: _____

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price		Bid Amount	
			Dollars	Cents	Dollars	Cents
2210	531.51 BRIDGE STRUCTURE - DETAIL BUILD	LUMP SUM		LUMP SUM		
	Section: 3		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 **018735.00, 018736.00, 018736.10, 022684.00**, for the **Bridge Replacement Projects, Multi-Use Trail, Bridge Construction, and Traffic Signal Improvements** in the city of **Gardiner**, County of **Kennebec**, 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 20, 2020**. 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, November 2014 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

Section 1 \$ _____

Section 2 \$ _____

Section 3 \$ _____

Performance Bond and Payment Bond each being 100% of the amount awarded under this Contract (see award amount in Section G below).

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, November 2014 Edition, Standard Details November 2014 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 Appendix A to Division 100 of the Standard Specifications November 2014 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 November 2014 Edition, Standard Details November 2014 Edition as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of: **WIN 018735.00, 018736.00, 018736.10, 022684.00 Bridge Replacement Projects, Multi-Use Trail, Bridge Construction, and Traffic Signal Improvements 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, November 2014 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 November 2014 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 for (see checked boxes):

Section 1 ☐

Section 2 ☐

Section 3 ☐

Contract Amount: _____

This award consummates the Contract, and the documents referenced herein.

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: David Bernhardt, 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 **018735.00, 018736.00, 018736.10, 022684.00**, for the **Bridge Replacement Projects, Multi-Use Trail, Bridge Construction, and Traffic Signal Improvements** in the city of **Gardiner**, County of **Kennebec**, 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 20, 2020**. 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, November 2014 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

Section 1 \$ _____

Section 2 \$ _____

Section 3 \$ _____

Performance Bond and Payment Bond each being 100% of the amount awarded under this Contract (see award amount in Section G below).

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, November 2014 Edition, Standard Details November 2014 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 Appendix A to Division 100 of the Standard Specifications November 2014 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 November 2014 Edition, Standard Details November 2014 Edition as updated through advertisement, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of: **WIN 018735.00, 018736.00, 018736.10, 022684.00 Bridge Replacement Projects, Multi-Use Trail, Bridge Construction, and Traffic Signal Improvements 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, November 2014 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 November 2014 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 for (see checked boxes):

Section 1 ☐

Section 2 ☐

Section 3 ☐

Contract Amount: _____

This award consummates the Contract, and the documents referenced herein.

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: David Bernhardt, 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. **1224.00**, 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, November 2014 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, November 2014 Edition, Standard Details November 2014 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 November 2014 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, November 2014 Edition, Standard Details November 2014 Edition, Supplemental Specifications, Special Provisions, Contract Agreement; and Contract Bonds contained herein for construction of:

PIN 1234.00 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, November 2014 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 November 2014 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. This award consummates the Contract, and the documents referenced herein.

MAINE DEPARTMENT OF TRANSPORTATION

Date

By: David Bernhardt, 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

.....

General Decision Number: ME180113 04/06/2018 ME113

Superseded General Decision Number: ME20170113

State: Maine

Construction Type: Highway

County: Kennebec County in Maine.

HIGHWAY CONSTRUCTION PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 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 \$10.35 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 2018. 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	01/05/2018
1	03/16/2018
2	04/06/2018

* ENGI0004-005 04/01/2018

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Grader/Blade, Milling		
Machine, Paver (Asphalt,		
Aggregate, and Concrete),		
Roller Asphalt.....	\$ 22.61	12.50

SUME2014-032 06/23/2017		

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 18.34	2.84
HIGHWAY/PARKING LOT STRIPING:		
Laborer.....	\$ 14.80	1.27
IRONWORKER, REINFORCING.....	\$ 16.27	0.00

LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 15.06	2.72
LABORER: Common or General.....	\$ 14.02	2.16
LABORER: Landscape.....	\$ 18.69	2.70
LABORER: Wheelman.....	\$ 15.64	4.29
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 19.52	5.15
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 21.98	4.85
OPERATOR: Broom/Sweeper.....	\$ 19.09	5.20
OPERATOR: Bulldozer.....	\$ 17.30	3.50
OPERATOR: Loader.....	\$ 18.59	5.53
OPERATOR: Mechanic.....	\$ 21.91	8.55
OPERATOR: Screed.....	\$ 19.43	4.90
OPERATOR: Roller (Earth).....	\$ 16.43	3.40
TRAFFIC CONTROL: Flagger.....	\$ 9.38	0.00
TRAFFIC CONTROL: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper.....	\$ 17.47	4.80
TRUCK DRIVER: Dump Truck.....	\$ 14.32	5.81
TRUCK DRIVER: TackTruck.....	\$ 20.18	7.75

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.

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END OF GENERAL DECISION

GARDINER
BRIDGE STREET BRIDGE
BRIDGE RECONSTRUCTION
WIN 18735.00

GENERAL NOTE

Subsurface explorations at the project encountered fill material in some areas on the project. This material can be identified in the field visually as it contains pieces of brick, glass, ceramics, wood and ash. The fill material was located roughly between MaineDOT stations 73+00 to roughly MaineDOT station 74+00 right and left of center. The depth ranged from 3 feet to 10 feet below ground surface, in particular along the river banks. This material, if encountered, may be reused on-site if deemed suitable for backfill by the Resident. If the material cannot be reused on site, the contractor is responsible for obtaining all approvals or permits and any required analytical results for proper disposal at a licensed Maine Department of Environmental Protection (MDEP) facility.

GARDINER
MAIN STREET BRIDGE
BRIDGE RECONSTRUCTION
WIN 18736.00 & 18736.10

GENERAL NOTE

Subsurface explorations at the project encountered fill material in some areas on the project. This material can be identified in the field visually as it contains pieces of brick, glass, ceramics, wood and coal ash. The fill material was located roughly between MaineDOT stations 3+00 to roughly MaineDOT station 4+00 right of center, and roughly between MaineDOT stations 4+50 to roughly MaineDOT station 5+00 right of center. The depth ranged from 3 feet to 10 feet below ground surface, in particular along the river banks and vicinity of the rail road tracks. This material, if encountered, may be reused on-site if deemed suitable for backfill by the Resident. If the material cannot be reused on site, the contractor is responsible for obtaining all approvals or permits and any required analytical results for proper disposal at a licensed Maine Department of Environmental Protection (MDEP) facility.

GARDINER
ROUTE 126 AND ROUTE 27
TRAFFIC SIGNAL REPLACEMENT
WIN 22684.00

GENERAL NOTE

The Maine Department of Environmental Protection (MDEP) has reported spills and releases involving petroleum products adjacent to the project. In particular at a former retail gasoline station located at the corner of Brunswick Ave. and Water Street. Based on the scope of work presented, available data suggests that this contamination may be adjacent to the immediate areas of any excavation proposed by the Maine Department of Transportation (MaineDOT). However, in light of MDEP's findings, 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 additionally 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 MaineDOT-Office of Safety and Compliance at 207 624-3004 and the MDEP at 800-482-0777. Work may only continue with authorization from the Resident.

MaineDOT DBE Project Attainment Target (PAT) for this Project is <u>.028 %</u>

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.

Town: **Gardiner**
Project: **18735.00, 18736.00, 18736.10 &
22684.00**
Date: **September 25, 2018**

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	Railroad
Central Maine Power Company	X	X	
Charter Communications (Cable)	X		
FairPoint Northern New England Telephone Operations LLC dba Consolidated Communications, Inc*	X	X	
Oxford Networks	X	X	
Gardiner Water District		X	
City of Gardiner (Sewer)		X	
City of Gardiner (Lighting)	X	X	
Summit Natural Gas		X	

* Consolidated Communications is used throughout the remainder of this Specification

Town: **Gardiner**
Project: **18735.00, 18736.00, 18736.10 &
22684.00**
Date: **September 25, 2018**

Utility Contact Information		
Utility/Railroad	Contact Person	Contact Phone
Central Maine Power Company	Tim Robbins	626-9443
Charter Communications (Cable)	Dave Bouchard	458-8101
Consolidated Communications	Marty Pease	797-1119
Oxford Networks	Mike Ellingwood	333-3471
Gardiner Water District	Paul Gray	317-6562
City of Gardiner (Sewer)	Doug Clark	215-3870
City of Gardiner (Lighting)	Tony LaPlante	582-4408
Summit Natural Gas	Garth Vdoviak	331-6578

Temporary utility adjustments **are** anticipated.

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.

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

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

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

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

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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 Company ****

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.

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 Company	X	X	X	X	4
Charter Communications (Cable)		X	X		40
Consolidated Communications			X		25
Oxford Networks		X			10
Total:					79

Aerial utility relocations are in progress prior to advertising. The relocations are anticipated to be completed on or before January 31, 2019, subject to weather limitations.

Utility Specific Issues:

Central Maine Power Company

18735.00, 18736.00, 18736.10, & 22684.00

Central Maine Power (CMP) has completed an extensive relocation of their facilities to accommodate all Projects associated with this Contract. CMP installed new poles on Maine Ave to complete a power supply loop, abandoned the pole at the northeast corner of the Bridge Street Bridge, and installed a temporary crossing over the Cobbosseecontee Stream.

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The new pole configuration will enable CMP to de-energize the conductors along Maine Ave between poles located at 157+41 Rt (Arcade) and 5+20 Lt (Maine Ave). It will also allow CMP to remove the conductors crossing Bridge Street Bridge. **The aerial crossing over Bridge Street must be in place while Maine Ave is de-energized.** Power over one of the bridges must be maintained at all times.

During the Maine Ave closure, the CMP conductors will be de-energized, but will remain in place. The Contractor must work around the conductors and communication cables on Maine Ave.

CMP will work with the Contractor to determine when the aerial crossing over Bridge Street will be removed. CMP estimates **2 Working Days** to remove the pole and conductors. If necessary, CMP will reinstall and remove the conductors over Bridge Street to accommodate the Maine Ave closure. The Contractor should plan to allow 2 working days for each conductor installation or removal over Bridge Street.

CMP service to the Dunkin/Subway area has been temporarily relocated to the stream crossing at 220+93 Lt (Arcade). After the project is complete, CMP will replace the pole on the northeast corner of Bridge Street Bridge, restore service to Dunkin/Subway area, and remove the stream crossing. CMP estimates **2 Working Days** to complete this work.

If pole support becomes necessary, the contractor shall contact Tim Robbins at CMP one week in advance.

Charter Communications

18735.00, 18736.00, 18736.10, & 22684.00

Charter Communications has aerial facilities within the limits of these projects. Charter plans to follow CMP with their facilities, north on Bridge Street to Maine Ave, and south on Maine Ave to Arcade. Charter Communications plans to begin the installation of their cables as soon as CMP has completed their cable work. Charter will install all new cable and has estimated **40 Working Days** to complete their work.

Consolidated Communications

18735.00, 18736.00, 18736.10, & 22684.00

Consolidated Communications has aerial facilities within the limits of these projects. Consolidated Communications plans to transfer their cables to the new pole locations as per the included Pole List. A temporary service will be necessary to service the Dunkin/Subway area that will be made permanent after CMP replaces the pole at the northeast end of the Bridge Street Bridge. **25 Working Days** are estimated to complete the Consolidated Communications transfers and relocations.

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Oxford Networks

18735.00

Oxford Networks has aerial facilities within the limits of this project. Oxford Networks has a subsurface cable within the Consolidated Communications duct bank that rises on pole 9/5 and heads south on existing poles 10/4 and 1/1/4.1. Oxford Networks is the bottom attachment on those three poles and will be the last to vacate the old poles. Oxford Networks estimates **10 Working Days** to complete their transfers to the new poles.

18736.00, 18736.10, & 22684.00

Oxford Networks has no facilities within the limits of these projects. No involvement is anticipated beyond work already addressed in this Specification.

Pole List:

Existing Pole #	Existing Station	Left/Right		Existing Offset	Proposed Station	Left/Right		Proposed Offset	Comments
		LT	RT			LT	RT		
12/22.2	217+09	X		21.5					Arcade - Remain
1/5	218+68		X	14.5					Arcade - Remove
					219+24		X	38	Arcade – Guy
					219+37		X	38	Arcade – New Pole
2/4	219+78		X		219+81		X	41	Arcade – Relocate
No #	220+90		X	54.2					Arcade – Remain
					220+93	X		32	Arcade – Temp span
11.3/5.3	221+01	X		172.6					Arcade – Remain
/2	153+87		X	77.2					Arcade – Remain
4.2	155+14		X	39.3					Arcade – Remain
4.1	156+08		X	10.1	155+69		X	29	Arcade – Relocate
4	157+22	X		25.3	157+41		X	58	Arcade – Relocate
	157+31	X		28.5					Arcade – Remove
4S	3+67		X	18.4					Maine – Remove
					2+98		X	22	Maine – New Pole
5	4+92	X		17.9					Maine – Remove
	5+20	X		26.8					Maine - Remain
6/6	6+03	X		19.3					Maine – Remove
7	7+28	X		27.8					Maine - Remain
7	7+29	X		19.4					Maine – Remove
	8+83	X		22.5					Maine – Remove
	8+82		X	27.5					Maine – Remove
8	9+34	X		31.6	9+34	X		31.6	Maine – Replace-in-Place
	9+40		X	26.7					Maine – Remove

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Existing Pole #	Existing Station	Left/Right		Existing Offset	Proposed Station	Left/Right		Proposed Offset	Comments
		LT	RT			LT	RT		
	9+67	X		24.5					Maine – Remove
10					11+47	X		Behind GR	Maine – New Pole Beyond project limits
11					13+80	X		Behind GR	Maine – New Pole Beyond project limits
No #	71+46		X	32.3					Bridge - Remove
11/5.1S	73+99	X		17.3	73+79	X		35	Bridge - Relocate
11.1/5.1	74+04		X	38.1					Bridge – Temp Remove
1/1/4.1	75+08	X		25.3					Bridge - Remove
10/4	75+52		X	30.3					Bridge – Remain
9/5	77+01		X	28.0					Bridge – Remain
					Replace	-	In	- Place	Bridge – At Rite Aid Beyond project limits

SUBSURFACE

Summary:

Utility	Summary of Work	Estimated Working Days
Consolidated Communications	Subsurface Relocation	NA
	Manhole Surface Adjustments	NA
	Install and splice Cables	115
	Remove Old Cables	5
	Raise Ducts into Place	10
Oxford Networks	Subsurface Relocation	10
Gardiner Water District	Water Main Removal and Installation	NA
	Gate Valve Prep	10
City of Gardiner (Sewer)	MH Adjustments	26
Central Maine Power Company	Manhole Surface Adjustment	NA
City of Gardiner (Lighting)	Lighting Account Set-up	See Below
Summit Natural Gas	Subsurface Relocation	3
	Gate Valve Surface Adjustments	NA
Total:		179

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The contractor shall provide **two weeks notification** to subsurface utilities prior to any work in the vicinity of the utility facilities so they, at their discretion, may have a representative present for inspection purposes.

Utility Specific Issues:

Consolidated Communications

18735.00

Consolidated Communications has a major underground duct system attached to the Bridge Street Bridge. The duct bank system consists of ducts, various size cables (copper and fiber), and manhole vaults. Prior to bridge demolition, Consolidated Communications intends to relocate their duct bank to a location outside the demolition area of the existing bridge. The new duct bank will begin at their Central Office on Brunswick Ave, cross the Bridge Street Bridge and extend to an existing manhole on Bridge Street at approximate station 76+63 Rt. The new duct bank shall be supported on temporary supports over Arcade and the Cobboscontee Stream, so that the new bridge superstructure may be laterally slid into place over it.

Consolidated Communications has entered into an Agreement with State of Maine through its Department of Transportation to include a portion of the relocation of their existing duct bank system in the Department's contract. The Contractor shall perform the duct bank work as part of the bid document and include the duct bank work in the schedule for construction. The duct bank work shall be completed in accordance with plans and specifications provided by Consolidated Communications.

Consolidated Communications has also entered into an Agreement with State of Maine through its Department of Transportation to include Manhole Adjustments in the Department's contract for **all** projects associated with this contract. The Contractor shall perform the adjustments as part of the bid document and include the adjustments in the schedule for construction. The Manhole Adjustments shall be completed in accordance with Special Provisions for Manholes, Inlets, and Catch Basins - 604 Items.

Consolidated Communications will populate the new duct bank system with cables, utilizing their own crews, upon completion and acceptance of the new duct bank system. Consolidated Communications estimates **115 Working Days** to complete the installation of their cables and **5 Working Days** to remove the old cables. The new duct bank must be complete and active prior to demolition of the Bridge and existing duct bank system as per plans and specs included in this contract. The Contractor must verify that the old duct system has been abandoned prior to demolition of the existing duct bank and Bridge.

After the completion of the bridge lateral slide in, Consolidated Communications will raise the duct bank to the permanent location as per the Plans and Specifications provided by Consolidated

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Communications and included in this Contract. Consolidated Communications estimates **10 Working Days** to complete that work.

18736.00

Consolidated Communications has subsurface cables within the limits of this project.

Consolidated Communications intends to relocate their subsurface cables, including the cable on the Maine Avenue Bridge, to new and existing poles on Maine Ave. Working Days for this work is included in the **Aerial** estimate of working days.

18736.10, 22684.00

Consolidated Communications has facilities within the limits of these projects. No involvement is anticipated beyond work already addressed in this Specification.

Oxford Networks

18735.00

Oxford Networks has fiber cables within the Consolidated Communications duct bank. Oxford Networks intends to replace their old cable within the new duct bank system. Oxford Networks estimates **10 Working Days** to complete this work. This estimate includes the aerial tie in. The Contractor must verify that the old duct system has been abandoned by Oxford Networks prior to demolition of the existing duct bank and Bridge.

18736.00, 18736.10, 22684.00

Oxford Networks has no subsurface facilities within the limits of these projects. No involvement is anticipated.

Gardiner Water District

18735.00

Gardiner Water District has water facilities attached to the Bridge Street Bridge. Gardiner Water plans to close valves at each end of the bridge to allow for removal and replacement of the water main during construction of the bridge. Gardiner Water District has entered into an Agreement with State of Maine through its Department of Transportation to include the removal and replacement of their existing water main system in the Department's contract. The Contractor shall perform the water work as part of the bid document and include the water work in the schedule for construction. The water work shall be completed in accordance with Plans and Specifications provided by the Gardiner Water District.

Gardiner Water District has a water main system throughout the limits of this project. Gardiner Water District will prep (inspect, loosen, and repair) all water gates prior to the milling operation. Gardiner Water District estimates **10 Working Days** to complete their water gate prep for **all** Projects associated with this Contract. Once prepped, and prior to finish paving, the Contractor shall check boxes for mobility and report any issues to the District. **The Contractor shall raise all gates during all paving operations with Gardiner Water District oversight. The payment**

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for this work will be considered incidental to the paving item. The Contractor will notify the District at least 48 hours prior to final paving for oversight purposes. The contact for the Gardiner Water District is Paul Gray at 317-6562.

18736.00

Gardiner Water District has water facilities attached to the Maine Ave Bridge. Gardiner Water plans to close valves at each end of the bridge to allow for removal and replacement of the main during construction of the bridge. Gardiner Water District has entered into an Agreement with State of Maine through its Department of Transportation to include the removal and replacement of their existing water main system in the Department's contract. The Contractor shall perform the water work as part of the bid document and include the water work in the schedule for construction. The water work shall be completed in accordance with plans and specifications provided by the Gardiner Water District.

Gardiner Water District has a water main system throughout the limits of this project. Gardiner Water District will prep (inspect, loosen, and repair) all existing water gates prior to the milling operation. The Water District Working Day estimate for gate valve prep is included in the 18735.00 project estimate. Once prepped, and prior to finish paving, the Contractor shall check boxes for mobility and report any issues to the District. **The Contractor shall raise all gates during all paving operations with Gardiner Water District oversight. The payment for this work will be considered incidental to the paving item.** The Contractor will notify the District at least 48 hours prior to final paving for oversight purposes. The contact for the Gardiner Water District is Paul Gray at 317-6562.

18736.10, 22684.00

Gardiner Water District has a water main system throughout the limits of these Projects. Gardiner Water District will prep (inspect, loosen, and repair) all existing water gates prior to the milling operation. The Water District Working Day estimate for gate valve prep is included in the 18735.00 project estimate. Once prepped, and prior to finish paving, the Contractor shall check boxes for mobility and report any issues to the District. **The Contractor shall raise all gates during all paving operations with Gardiner Water District oversight. The payment for this work will be considered incidental to the paving item.** The Contractor will notify the District at least 48 hours prior to final paving for oversight purposes. The contact for the Gardiner Water District is Paul Gray at 317-6562.

City of Gardiner (Sewer)

18735.00, 18736.00, 18736.10, 22684.00

The City of Gardiner has a sewer main system within the limits of these Projects which includes approximately 17 manholes that will require adjustment.

The City plans to perform the adjustments and estimates **9 Working Days** to lower and plate the Sewer manholes prior to the milling operation and **17 Working Days** to set the manholes to

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finish grade prior to surface pavement. The Contractor shall notify the City two weeks prior to any work required of the City.

Central Maine Power Company
22684.00

Central Maine Power Company has subsurface electric conductors within the limits of this Project which includes 1 manhole that will require adjustment.

Central Maine Power Company has entered into an Agreement with State of Maine through its Department of Transportation to include the manhole adjustment in the Department's contract. The Contractor shall perform the manhole adjustment as part of the bid document and include the manhole work in the schedule for construction. The Manhole Adjustment shall be completed in accordance with Special Provisions - 604 Items.

City of Gardiner (Lighting)
18735.00, 18736.00, 18736.10, & 22684.00

The City of Gardiner has existing street lighting within the limits of these Projects. New street lighting will be installed as part of the contract documents.

In general, all 240 volt upgrade projects will require a new electric service account. For those upgrades and other projects that require new electric service accounts, the Contractor shall request that a new account be established either by contacting Ron Cote at ron.cote@maine.gov, for all State owned facilities, or the Town Official, for all locally owned facilities. For this Contract the contact to establish a new service account is Tony LaPlante. The Contractor shall provide the following information with the new electric service account request:

- Electrician's name performing the work
- Voltage
- Amperage
- Pole number of the power supply
- Distance from the pole to the control box
- The number of the closest meter to the pole

The contact to request the new electric service account for this contract is Tony LaPlante. The contractor shall allow at least 4 weeks for the City to establish the account.

Summit Natural Gas
18735.00

Summit Natural Gas has existing mains within the limits of this project. At the time this Specification was written, the active gas main attached to the Bridge was scheduled to be

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relocated to the Winter Street Bridge by November 1, 2018. The Contractor must verify that the old gas main has been abandoned and removed prior to demolition of the existing Bridge.

18736.00

Summit Natural Gas has no subsurface facilities within the limits of this project. **No involvement is anticipated.**

18736.10

Summit Natural Gas has subsurface facilities within the limits of this project. The gas main located on Arcade below the Bridge Street bridge requires relocation to avoid the new and temporary bridge foundations. Summit Natural Gas plans to relocate their gas main on Arcade to avoid the Bridge Street Bridge work by November 1, 2018. Summit Natural Gas estimates **3 Working Days** to relocate their gas main.

22684.00

Summit Natural Gas has subsurface facilities within the limits of this project. **No involvement is anticipated.**

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.

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SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES
(Reserved Limits)

It is hereby brought to the Contractor's attention that use of the following areas will not become available to the Contractor until the stated dates below:

March 30, 2019: Building No. 1 (Chapman's Fuel) and the property it is on, depicted on the right of way map as parcel 2, at approximate Station 71+50 Left on Bridge Street.

December 30, 2018: All other property that immediately borders WIN 18735.00 and the Bridge Street/Water Street/Brunswick Avenue intersection portion of WIN 22684.00.

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SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES
(Communication and Coordination)

104.4 Communication and Coordination

This subsection is amended by the addition the following:

The design process of this project involved extensive coordination and public involvement with a Bridge Advisory Committee (BAC) consisting of local City of Gardiner staff, business owners, residents, and members of other local organizations. Their input was integral to the design and delivery of the project. The Contractor, in cooperation with the Resident, shall prepare for and attend a meeting with the BAC to be held at City Council Chambers after the contract award and Preconstruction Conference, but prior to significant work on the project. The Contractor shall discuss their approach to the project, their construction schedule, and answer questions from the attendees. Preparation and attendance at this meeting will be incidental to the contract.

SPECIAL PROVISION
SECTION 104
GENERAL RIGHTS AND RESPONSIBILITIES
(Bridge Closure Notification)

104.4.10 Coordination of Road Closure/Bridge Closure/Bridge Width Restriction Notification

This subsection is amended by the addition the following:

The Contractor shall provide the following minimum notices to the Resident so that the Department can notify the owners of the A1 Diner located at 3 Bridge Street.

- 30 days minimum notice prior to the start of the Bridge Street Bridge - Bridge Closure Period.
- 15 days minimum notice prior to the date upon which the Contractor expects that the A1 Diner can be re-occupied by the owners to reopen for business.
- Formal notice of when the A1 Diner is ready for the owners to re-occupy.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Intent of the Contract)

Subsection 105.1 Intent of the Contract is amended by the addition of the following:

Supplemental Definitions:

Pre-Bridge Closure Period is defined from mobilization to when the Bridge Closure Period begins.

Bridge Street Bridge (No. 2101) - Bridge Closure Period will begin when two lanes of vehicular traffic are closed on the bridge. The A1 Diner has a written agreement in place with MaineDOT to close during the Bridge Closure Period. The Bridge Closure Period will be considered complete when two lanes of vehicular traffic (one in each direction), one ADA-compliant sidewalk, and the A1 Diner are reopened to the public, with the following items complete, in-place, and accepted: bridge deck waterproofing membrane, approach and bridge base pavement, bridge sidewalks and curbing, bridge railing, approach guardrail, and public sidewalk access to the A1 Diner dining car and its elevated walkway leading to its bathroom and kitchen. The Resident shall be the sole authority in determining when the Bridge Closure Period has started and ended.

Maine Avenue Bridge (No. 3098) - Bridge Closure Period will begin when two lanes of vehicular traffic are closed on the bridge and will be considered complete when two lanes of vehicular traffic (one in each direction) are reopened to the public on the completed bridge deck. Bridge sidewalk, curbing, bridge railing, approach guardrail, waterproofing membrane, and base course paving may be completed in the Post-Closure Period. If seasonal weather limitations restrict hot mix asphalt placement on the bridge, the bridge deck shall be protected with protective coating for concrete surfaces through the winter. Temporary asphalt paving shall be placed in the approaches. Concrete deck surface preparation prior to waterproofing membrane placement and final paving in the spring shall be in accordance with Standard Specifications Section 508. Application of the protective coating shall be considered incidental to the Contract.

The Resident shall be the sole authority in determining when the Bridge Closure Periods have started and ended.

Post-Bridge Closure Period is defined from when the Bridge Closure Period ends to the Contract Completion Date.

Limitations of Operations:

1. The Contractor shall suspend all work during the following dates:
 - a. Saturday, October 12, 2019 & October 10, 2020 (Saturday of Columbus Day weekend)- Swine and Stein Oktoberfest

- b. November 30, 2018 to December 1, 2018 & December 6, 2019 to December 7, 2019 (first weekend of December) - Downtown Tree Lighting & Parade of Lights
 - c. Saturday, June 15, 2019 & Saturday, June 20, 2020 - Greater Gardiner River Festival
- 2. The bridge and sidewalk shall not be closed until the detour signing has been installed and all temporary improvements have been completed on the detours. The closure maintenance of traffic details and work limits are shown on the Plans and described in Special Provision Section 652 – Maintenance of Traffic.
 - 3. Intermittent single lane and sidewalk closures are permissible for work that requires them in the Pre-Bridge Closure and Post-Bridge Closure periods. Lane and sidewalk closures on Bridge Street and Maine Avenue shall not be allowed from 7:00 A.M. to 9:00 A.M. and 4:00 P.M. to 6:00 P.M. and are subject to the approval of the Resident, unless otherwise specified herein.
 - 4. The water main service shall not be interrupted on both Bridge Street and Maine Avenue at the same time.

WIN 18735.00 Bridge Street Bridge

- 5. The Bridge Street Bridge shall remain open to two lanes of traffic (one in each direction), one lane of parallel parking, and one sidewalk of pedestrian traffic during non-working hours, except during the Bridge Closure Period.
- 6. The Bridge Street Bridge shall remain open to one lane of traffic, one lane of parallel parking, and one sidewalk of pedestrian traffic during working hours, except during the Bridge Closure Period.
- 7. A portion of the substructure units shall be constructed in the Pre-Bridge Closure Period so that Consolidated Communications can relocate to the notch in the proposed abutments before the Bridge Closure Period and the bridge slide-in occurs, as shown in the Plans. The bridge slide-in temporary abutments and staging area removal, surface course paving, remaining approach sidewalk and curb construction, final striping and signing, and remaining utility attachments to the proposed bridge are anticipated to occur after the Bridge Closure Period. See Special Provision Section 104 - Utilities and the Utility Plan in the Plans for details on utility relocations.
- 8. Arcade, which passes under the Bridge Street Bridge, shall be closed to vehicular and bicycle/pedestrian traffic within the work area during the Bridge Closure Period as shown in the Plans. In addition, Arcade can be closed in the Pre-Bridge Closure Period to allow for Consolidated Communications' duct bank relocation and temporary utility support construction, and the proposed bridge slide-in temporary foundation and superstructure construction. Arcade can be closed in the Post-Bridge Closure Period until the Consolidated Communications duct bank is raised and attached to the proposed bridge and temporary utility support is removed. At all other times, Arcade shall remain open to at

least one lane of alternating traffic and one sidewalk. Parking along Arcade shall be maintained as shown in the Plans.

9. Consolidated Communications' temporary utility support over the stream and Arcade shall not be constructed until after the Maine Avenue Bridge Closure Period in order to maintain public and emergency response access to the Arcade public parking lot and the back side of Water Street buildings from one end of Arcade or the other at all times.

WIN 18736.00 Maine Avenue Bridge

10. The Maine Avenue Bridge shall remain open to two lanes of traffic (one in each direction) and one sidewalk of pedestrian traffic during non-working hours, except during the Bridge Closure Period. The multi-use bridge shall be considered one sidewalk.
11. The Maine Avenue Bridge shall remain open to one lane of traffic and one sidewalk of pedestrian traffic during working hours, except during the Bridge Closure Period. The multi-use bridge shall be considered one sidewalk.
12. The Bridge Closure Period shall not begin until the multi-use bridge is complete, the detour signing has been installed, and all work has been completed on the local and truck detours. The closure maintenance of traffic details and work limits are shown on the Plans and described in Special Provision Section 652 - Maintenance of Traffic.
13. It is anticipated that the piles will be placed before the Bridge Closure Period occurs. The surface course paving, downstream sidewalk concrete placement, remaining approach sidewalk and curbing construction, final striping and signing, and remaining utility attachments to the proposed bridge are anticipated to occur after the Bridge Closure Period. See Special Provision Section 104 - Utilities and the Utility Plan in the Plans for details on utility relocations.
14. It is anticipated that the proposed northeast retaining wall will be constructed in the Bridge Closure Period with completion in the Post-Bridge Closure Period with two lanes shifted as shown in the Plans.
15. Public access to the east Arcade entrance from Maine Avenue may be closed within the work area during the Bridge Closure Period as shown in the Plans. Public access shall be maintained to the Harvey's Hardware and Tiger Town parking lot directly from Maine Avenue and from Arcade from the west via Water Street at all times during the Bridge Closure Period. The number of parking spaces in this business lot shall be maintained during the Bridge Closure Period as shown in the Plans. Maintaining this public access and parking is subject to Contractor penalties as shown in Special Provision Section 107 - Supplemental Liquidated Damages.
16. Emergency response access, including the City fire department's 105 foot ladder truck, shall be maintained through the Bridge Closure Period work zone from Maine Avenue to Arcade and the fire hydrant at STA 155+60 Right at all times. This access cannot be

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through the Harvey's Hardware and Tiger Town parking lot or the adjacent private driveways. It shall be 11 foot minimum in width, allow for ladder truck turning, be constructed of at least graded gravel, and be barricaded from public access. The existing Bridge Street Bridge does not have enough vertical clearance over Arcade to allow passage of the ladder truck. Maintaining this emergency access is subject to Contractor penalties as shown in Special Provision Section 107 - Supplemental Liquidated Damages.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Convenience of the Public)

Subsection 105.2.6 Convenience of the Public is amended by the addition of the following:

It is hereby brought to the Contractor's attention that there are several businesses within and immediately adjacent to the work limits, that will be open on Bridge Street, Water Street, and Arcade during the entire duration, or some portion, of the planned construction work. These businesses have been coordinated with during the design phase of this project. These businesses may change ownership or operations before the construction commences. They include, but are not limited to:

- Skehan's Tax and Planning (open Monday through Friday from 8:00 A.M. to 5:00 P.M.) – Northwest quadrant of the project.
- A1 Diner (open Monday through Thursday 7:00 A.M. to 8:00 P.M., Friday through Saturday 7:00 A.M. to 8:30 P.M., and Sunday 8:00 A.M. to 1:30 P.M.) – Southeast quadrant of the project
- Frosty's Donuts (open 5:00 A.M. to 2:00 P.M. every day) – Southeast quadrant of the project
- Prestige Portraits (open Monday through Friday, 8:00 A.M. to 4:00 P.M.) – Southwest end of Arcade at 405 Water Street

Arcade provides access to a public parking lot in the east quadrant of the project behind the Water Street businesses and apartments. This parking area and public and emergency response access to and from it via Arcade under Bridge Street from the west shall only be impacted as shown in the Plans and in accordance with Special Provision Section 105 - Intent of the Contract, Section 107 - Supplemental Liquidated Damages, and Section 652 - Maintenance of Traffic. At no time shall closure of the west end of Arcade coincide with closure of the east end of Arcade. This public parking lot cannot be used for a staging area at any time except within the work limits shown in the Plans.

The Contractor shall perform the Work in a manner that ensures access, delivery, and other services and activities are not impeded for persons, vehicles, homes, driveways, and businesses within the project limits. Examples of services or activities include, but are not limited to, fuel delivery, trash and recycling pickup and removal, and municipal / emergency services.

Work required to comply with this Special Provision shall be considered incidental to the Contract.

SPECIAL PROVISION
SECTION 105
GENERAL SCOPE OF WORK
(Convenience of the Public)

Subsection 105.2.6 Convenience of the Public is amended by the addition of the following:

It is hereby brought to the Contractor's attention that there are several businesses within and immediately adjacent to the work limits, that will be open on Maine Avenue during the entire duration, or some portion, of the planned construction work. These businesses have been coordinated with during the design phase of this project. These businesses may change ownership or operations before the construction commences. They include, but are not limited to:

- Wellness Connection (open Monday through Saturday 10:00 A.M. to 7:00 P.M.) – Northeast quadrant of the project.
- Harvey's Hardware (open Monday through Friday 8:00 A.M. to 5:30 P.M., Saturday 8:00 A.M. to 5:00 P.M., and Sunday 9:00 A.M. to 4:00 P.M.) – Southwest quadrant of the project.
- Tiger Town Beverage (open Sunday through Friday 5:00 A.M. to 8:00 P.M. and Saturday 5:00 A.M. to 9:00 P.M.) – Southwest quadrant of the project.
- Key Bank ATM (open 24 hours) – Northwest quadrant of the project.
- Depot Pub (open Monday through Saturday, 11:00 A.M. to 1:00 A.M. and Sunday 11:00 A.M. to 12:00 A.M.) – Southwest quadrant of the project.
- Hannaford Supermarket (open Monday through Saturday, 7:00 A.M. to 10:00 P.M. and Sunday 7:00 A.M. to 9:00 P.M.) – Northwest quadrant of the project.

Arcade provides access to a public parking lot in the east quadrant of the project behind the Water Street businesses and apartments. This parking area and public and emergency response access to and from it via Arcade and Maine Avenue from the east shall only be impacted as shown in the Plans and in accordance with Special Provision Section 105 - Intent of the Contract, Section 107 - Supplemental Liquidated Damages, and Section 652 - Maintenance of Traffic. At no time shall closure of the east end of Arcade coincide with closure of the west end of Arcade. This public parking lot cannot be used for a staging area at any time except within the work limits shown in the Plans. The access and parking for Harvey's Hardware and Tiger Town Beverage immediately adjacent to Maine Avenue shall only be impacted during the Bridge Closure Period as shown in the Plans.

At least the north entrance to the Wellness Connection and at least two entrances to the Hannaford Plaza must be open at all times. Access to any other private or commercial drives within the project work limits must be maintained as needed unless otherwise agreed to by the property

owners via coordination with the Resident.

The Contractor shall perform the Work in a manner that ensures access, delivery, and other services and activities are not impeded for persons, vehicles, homes, driveways, and businesses within the project limits. Examples of services or activities include, but are not limited to, fuel delivery, trash and recycling pickup and removal, and municipal / emergency services.

Work required to comply with this Special Provision shall be considered incidental to the Contract.

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 Cobbosseecontee Stream

- a. WIN 18736.00 Maine Avenue Bridge: In-water work is allowed from November 8-April 9 of any year. In-water work is prohibited April 10-to November 7.
- b. WIN 18735.00 Bridge Street Bridge & 18736.10 Multi-use Path & Bridge Construction: In-water work is allowed anytime.

II. Special Conditions:

1. Special Conditions of Army Corps of Engineers (ACOE) Category II permit and Maine Department of Environmental Protection Permit-by-Rule Standards apply (see permit and conditions in contract documents).
2. Special Conditions of Informal Endangered Species Act (Section 7) and Essential Fish Habitat Consultation with National Marine Fisheries Service apply (summarized in this Special Provision 105).
3. The contractor shall hold a pre-construction meeting for each project with appropriate MaineDOT Environmental Office staff, other MaineDOT staff, and the MaineDOT construction crew or contractor(s) to review all procedures and requirements for avoiding and minimizing effects to Atlantic salmon and Sturgeon and to emphasize the importance of these measures for protecting these species and their habitat. ACOE (Jay Clement, Jay.I.clement@usace.army.mil), FHWA (Cassandra Chase, Cassandra.Chase@dot.gov) and National Marine Fisheries Service staff (Zachary Jylkka, zachary.jylkka@noaa.gov) shall be invited to attend these meetings.
4. Should the contractor see any ESA-listed species (Atlantic sturgeon, shortnose sturgeon, or Atlantic salmon) or have any incidental contact, the contractor shall contact NMFS (Zachary Jylkka: by email, zachary.jylkka@noaa.gov or phone (978) 282-8467 within 24 hours. If Zach is unavailable, the contractor shall contact the NMFS Section 7 Coordinator by phone (978) 281-9208 or fax 978-281-9394). The contractor shall also notify MaineDOT Environmental Office (Eric Ham 215-7356).
5. **In-water riprap shall be installed with containment or in the dry. Containment may consist of a turbidity curtain, cofferdam, or other similar measure.**
6. **In-water pile driving with an impact hammer is prohibited.**
7. **Cofferdams shall be installed such that a migratory corridor (minimum of approximately half the width of the stream) for fish passage shall be maintained during construction).**

8. **The contractor shall employ a soft start technique for all in-water pile driving and pile removal with a vibratory hammer. A “soft-start” means that the hammer shall be operated at reduced power for 15 seconds at a 1-minute interval. This procedure shall be repeated three times.**
9. All areas of temporary waterways or wetland fill shall be restored to their original contour and character upon completion of the project.
10. Disturbed areas adjacent to the waterway shall be stabilized and re-vegetated with a seed mix appropriate for riparian areas in Maine.
11. The Contractor shall follow measures designed to avoid and minimize effects to streams from hazardous materials associated with construction activities. These measures include the following:
 - a. All vehicle refueling 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. Any leaks or accumulations of these materials would be corrected before entering streams or areas that drain directly to streams or wetlands.

III. Approvals:

1. Temporary Soil Erosion and Water Pollution Control Plan
2. Permitted Resource Impacts (in square feet), see ACOE permit for locations:

	<i>Permanent</i>	<i>Temporary</i>
<i>18735.00 Bridge Street Bridge</i>	<i>RUS-1,530 PEM-530</i>	<i>RUS-2,600 PEM-615</i>
<i>18736.00 Maine Ave Bridge & 18736.10 Multi-Use Path</i>	<i>RUS-3,035</i>	<i>RUS-2,200</i>

IV. 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 according to 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
SECTION 105.9
HISTORIC RESOURCES**

Standard Specification 105.9 of the State of Maine Standard Specifications (Revision of November 2014) remains in effect and is amended by this Special Provision.

The MaineDOT has conducted consultation in accordance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470f), the Regulation (36 CFR Part 800), and the 2004 Section 106 Maine Programmatic Agreement.

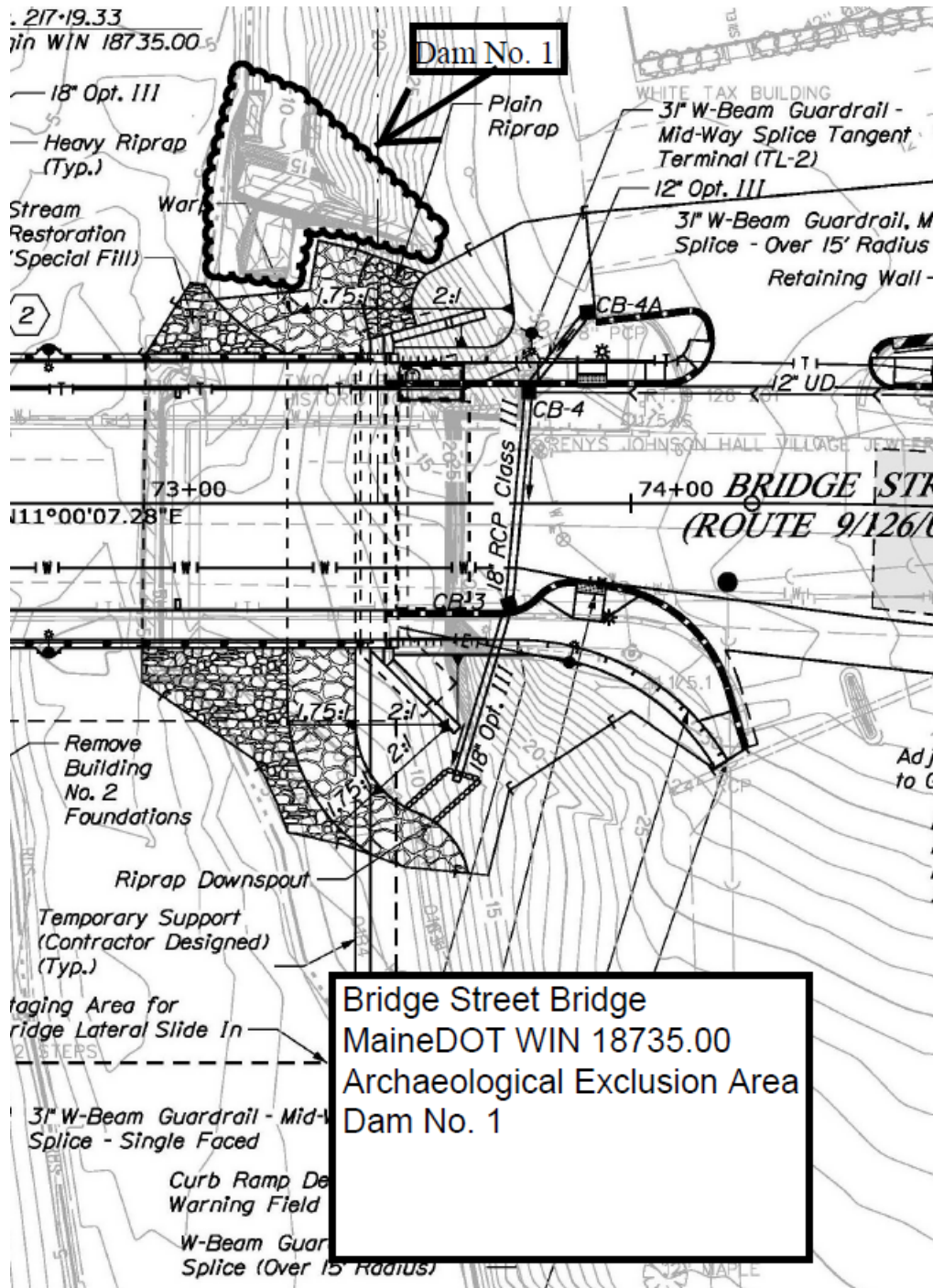
The following requirement is project specific:

- *The project is adjacent to a c.1822-1825 dam – known as Dam No. 1 - that is a contributing resource to a National Register-eligible historic industrial district. The dam is located just upstream of the Bridge Street Bridge at Sta. 73+00L. The dam shall be preserved in place and no work shall exceed beyond 12 feet west of the proposed wingwall footing. See attached graphic, “Bridge Street Bridge, MaineDOT WIN 18735.00, Archaeological Exclusion Area, Dam No.1.” Any deviations from plans or extension of limits of work on this property must be reviewed by the Project Manager and Historic Coordinator prior to approval of change.*

The following requirements are general requirements for all projects:

- *Changes to the project during construction must be approved by the Project Manager. These changes could have adverse effects to Historic Resources, as well as jeopardize federal funding.*
- *If the Contractor or any subcontractor discovers any object of potential historic archaeological or other historic interest, all work that could disturb the object will immediately cease and will not resume until investigation of the object and related deposits have been completed, and if necessary recovered. The Contractor will notify the MaineDOT immediately. (The first indications of deposits may be burial grounds or campsites of Native Americans that reveal the bones of the dead and implements. Also the exposure of marine fossils or shells found mainly in clay deposits, as well as, exposure of dumps in landfill areas, abandoned campfire sites, and building foundations.)*
- *Any delay of the Contractor’s operations resulting from the above will be analyzed in accordance with MaineDOT Standard Specification Section 109.5 – Adjustment for Delay, except that in no event will such delay be a compensable delay.*
- *The Contractor is notified of a Maine Statute, 27 MRSA §371, which states that artifacts, specimens, and material, which are public property by virtue of having been found on, in, or beneath State controlled lands, and places ownership of the same in the State of Maine*

**SPECIAL PROVISION
SECTION 105.9
HISTORIC RESOURCES**



SPECIAL PROVISION 105
CONSTRUCTION AREA

A Construction Area located in the **City of Gardiner** 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 Gardiner, Kennebec County on Bridge Street/ Route 9/ 126/ 201 and Maine Avenue/ Route 24 over the Cobbosseecontee Stream.
- (b) The sections of highway under construction in the city of Gardiner, Kennebec County on Water Street/ Route 9/ 126, Maine Avenue/ Route 24, Church Street, and Depot Square Street 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 Gardiner** 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.

Special Provision
Section 107
Time
(Supplemental Liquidated Damages for Fabrication Time)

Section 107 of the Standard Specification is amended by addition of the following:

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:

Table 1 WIN 18735.00 – Bridge Street Bridge

<u>Element</u>	<u>Time</u> (Calendar Days)	<u>Supplemental Liquidated Damages</u> (\$ per Calendar Day)
Structural Steel Plate Girders	45	\$850
Thermal Spray Coating	18	\$850
Precast Abutment*	21	\$850
Precast Approach Slab*	21	\$850

*Only applicable if not self-performed by the Contractor.

Table 2 WIN 18736.00 – Maine Avenue Bridge

<u>Element</u>	<u>Time</u> (Calendar Days)	<u>Supplemental Liquidated Damages</u> (\$ per Calendar Day)
Precast Abutment*	28	\$850
Precast Approach Slab*	21	\$850
Steel Pedestrian Bridge	30	\$850
<i>Bid Alternate 1 – Prefabricated Bridge Unit (PBU)</i>		
Concrete Deck*	14	\$850
Structural Steel Plate Girders	21	\$850
Thermal Spray Coating	15	\$850
<i>Bid Alternate 2 – Detail-Build NEXT Beams</i>		
Prestressed Structural Concrete NEXT Beam	14	\$850

*Only applicable if not self-performed by the Contractor.

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 Supplemental Liquidated Damages 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 Provision Sections 504, 506, 530, & 531.

For concrete work: tensioning of strands, batching and casting of concrete, breaking of test cylinders, de-tensioning of strands, repairs, finishing fascia surfaces and any other times as required in the Standard Specifications or Special Provision Sections 534 and 535.

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SPECIAL PROVISION
SECTION 107
TIME
(Contract Completion Date & Allowable Work Times)

Subsection 107.1 Contract Time and Contract Completion Date is amended by the addition of the following:

The specified Contract Completion Date is November 20, 2020.

Subsection 107.3 Allowable Work Times is amended by the addition of the following:

107.3.1 General. Allowable work hours shall be as follows:

Pre- and Post-Bridge Closure: 12 hours per day (7:00 A.M.-7:00 P.M.), 6 days per week (Monday-Saturday) other than required night work as stated below. Construction work within these timeframes is exempt from the City of Gardiner noise ordinance.

Bridge Demolition in Bridge Closure Period: 24 hours per day, 7 days per week

All other Bridge Closure Period work:

- Bridge Street WIN 018735: 16 hours per day (5:00 A.M.-9:00 P.M.), 7 days per week
- Maine Avenue WIN 018736: 24 hours per day, 7 days per week

107.3.2 Night Work. Night work shall be defined as work between 7:00 P.M.-7:00 A.M.

Any work that affects the normal operation of the signalized intersections and their traffic signals, or work that affects the full roadway width, such as utility trenching, milling, and paving, removal and installation of traffic signals shall be completed at night with flaggers or short-term detours as directed and approved by the Resident.

Pre-augering/drilling and pile driving for the proposed Maine Avenue Bridge shall occur at night unless it can be performed during the day within the allowable single lane closure timeframes as specified in Special Provision Section 105, General Scope of Work, Intent of the Contract.

Any work that restricts business access such as sidewalk reconstruction in front of doorways and the A1 Diner jacking and underpinning shall occur at night and outside of the business's normal business hours.

107.3.3 Sundays and Holidays. The Contractor shall be permitted to work on Sundays during the Bridge Closure Period only. Holidays that fall within the Bridge Closure Period shall not count as a Day when determining the maximum length of the closure stated in Special

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Provision Section 107 – Time.

SPECIAL PROVISION
SECTION 107
TIME
(Schedule of Work)

Subsection 107.4.2, Schedule of Work Required is amended by the addition of the following:

CPM Schedule for Bridge Closure Period: In addition to the requirements listed above, the Contractor shall prepare separate and detailed CPM schedules for all phases of the project that include bridge closures. See the Special Provision amending Subsection 107 for additional details on Incentives/Disincentives for early/late completion of the work.

These additional detailed CPM schedules shall show all major construction activities, project phasing, controlling activities, project required milestones, and shall show all activity durations in hourly increments.

SPECIAL PROVISION
SECTION 107
TIME
(Completion Incentives and Disincentives)

Subsection 107.6 Completion Incentives and Disincentives is amended by the addition of the following:

See Special Provision Section 105 - Intent of the Contract for Supplemental Definitions.

WIN 18735.00 Bridge Street Bridge

The Contractor shall plan and conduct their operations in such a manner that the Bridge Street (State Route 9/126/US Route 201) Bridge Closure Period is no more than thirty (30) consecutive Days. The Bridge Street Bridge Closure Period shall not start before Monday, August 3, 2020 and shall be completed before Friday, October 2, 2020.

The Contractor will receive a closure duration incentive of ten thousand dollars (\$10,000) for each entire Day the bridge is closed to traffic less than the thirty (30) Day allowance. The maximum incentive amount is one hundred thousand dollars (\$100,000).

The Contractor shall pay a closure duration disincentive of ten thousand dollars (\$10,000) per Day for each Day, or portion of a Day, beyond the thirty (30) Day Bridge Street Bridge Closure Period. This disincentive will be deducted from amounts otherwise due, or to become due, to the Contractor. There is no upper limit to the dollar amount of the disincentive assessments.

WIN 18736.00 Maine Avenue Bridge

The Contractor shall plan and conduct their operations in such a manner that the Maine Avenue (Route 24) Bridge Closure Period is no more than fifteen (15) consecutive Days. The Maine Avenue Bridge Closure Period shall not start before Friday, November 1, 2019 and shall be completed before Friday, April 17, 2020.

The Contractor will receive a closure duration incentive of thirty thousand dollars (\$30,000) for each entire Day the bridge is closed to traffic less than the fifteen (15) Day allowance. The maximum incentive amount is one hundred twenty thousand dollars (\$120,000).

The Contractor shall pay a closure duration disincentive of thirty thousand dollars (\$30,000) per Day for each Day, or portion of a Day, beyond the fifteen (15) Day Maine Avenue Bridge Closure Period. This disincentive will be deducted from amounts otherwise due, or to become due, to the Contractor. There is no upper limit to the dollar amount of the disincentive assessments.

SPECIAL PROVISION
SECTION 107
TIME
(Supplemental Liquidated Damages)

Subsection 107.8 Supplemental Liquidated Damages is amended by the addition of the following:

WIN 18735.00 Bridge Street Bridge

The Contractor shall:

- Maintain public and emergency response access to the public parking lot along Arcade from the west under Bridge Street as shown in the Plans and in accordance with Special Provision Section 105 - Intent of the Contract, Section 105 - Convenience of the Public, and Section 652 - Maintenance of Traffic;
- Maintain public access to Skehan's Tax & Planning at all times during their normal business hours unless otherwise approved by the Resident after coordination with the business owner. Traffic can be heavy at this business during peak annual tax and quarterly business tax reporting timeframes;
- Maintain public access to the Hannaford Plaza entrance off Bridge Street at all times, unless otherwise approved by the Resident after coordination with all businesses in the plaza. Hannaford's truck deliveries can be made from Maine Avenue during the Bridge Street Bridge Closure Period;
- Ensure that the A1 Diner remains open during their normal business hours during the Contractor's diner underpinning and foundation construction operations throughout the Bridge Pre-Closure Period;
- Maintain public access and use of the A1 Diner stairs until the beginning of the Bridge Closure Period, unless otherwise approved by the Resident. The Contractor shall install and restore public access and use to the stairway from Arcade to Bridge Street north of the A1 Diner within 10 days after the Bridge Closure Period;
- Restore existing parking and access from Summer Street to Uplift, Inc. along the Summer/Winter Street detour route within 10 days after the Bridge Closure Period.

Supplemental liquidated damages will be assessed to the Contractor at the rate of five hundred dollars (\$500.00) per every hour that the preceding conditions are not met. The \$500.00 penalty shall be added cumulatively every hour with a maximum penalty of four thousand dollars (\$4,000) per day for each violation.

WIN 18736.00 Maine Avenue Bridge

The Contractor shall:

- Maintain public and emergency response access to the public parking lot along Arcade from the east via Maine Avenue, as well as parking in Arcade, Harvey's

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- Hardware, and Tiger Town Beverage as shown in the Plans and in accordance with Special Provision Section 105 - Intent of the Contract, Section 105 - Convenience of the Public, and Section 652 - Maintenance of Traffic;
- Maintain public access to the Wellness Connection via at least one driveway and the front delivery entrance door on Maine Avenue at all times during their normal business hours, unless otherwise approved by the Resident after coordination with the owner;
 - Maintain public access to at least two Hannaford Plaza east entrances at all times during their normal business hours unless otherwise approved by the Resident after coordination with all the businesses in the plaza.

Supplemental liquidated damages will be assessed to the Contractor at the rate of five hundred dollars (\$500.00) per every hour that the preceding conditions are not met. The \$500.00 penalty shall be added cumulatively every hour with a maximum penalty of four thousand dollars (\$4,000) per day for each violation.

SPECIAL PROVISION
SECTION 202
REMOVAL OF STRUCTURES AND OBSTRUCTIONS
(Remove Buildings)

Section 202.01 Description is amended by the addition of the following:

The work shall consist of the demolition and removal of the following units:

Building No. 1: Entire building, all concrete block, stone, and/or cast in place concrete foundation walls, business sign and electrical feed, reinforced concrete T-beam elevated deck, and stone masonry retaining wall below the elevated deck of former Chapman's Fuel Station at Station 71+38.00, 16' LT (+/-).

Please note that Building No. 1 is subject to Reserved Limits in terms of when the property can be accessed for any demolition work according to Special Provision Section 104.

Building No. 2: Slab on grade and strip footing foundation of former Dennis's Pizza (building previously removed by others) at Station 72+50.00, 50' RT (+/-).

Building No. 3: Partial foundation of Gardiner Feed at Station 3+50.00, 32' RT (+/-). Portion of foundation to be removed is indicated on the Plans and has been isolated from portion of building and foundation to remain, see attached photos.

Section 202.02 Removing Buildings is amended by the addition of the following:

Building No. 1 and Building No. 2 shall be removed during the Bridge Street Bridge Pre-Bridge Closure Period. Building No. 3 shall be removed during the Maine Avenue Bridge Pre-Bridge Closure Period. The Pre-Bridge Closure Period is defined in Section 105-Intent of the Contract.

The buildings will be empty of all personal equipment, fixtures, and materials prior to the "Notice to Proceed". If the bidder is in doubt as to whether any item not listed herein is real or personal property, they shall request a determination of the matter prior to date on which bids are to be received.

Building No. 1 may have oil/fuel tanks that require removal and disposal. The fuel is a regulatory material and may be reused or disposed of in accordance with local, state, and federal regulations. The tanks shall also be disposed of in accordance with local, state, and federal regulations.

Portions of the existing stone masonry retaining wall under the elevated concrete deck of Building No. 1 shall be stockpiled by the Contractor to be utilized as granite revetment as shown on the Plans at the direction of the Resident.

The Contractor shall excavate to fully expose the remaining concrete walls and footings of Building No. 3 prior to any demolition work, without undermining the portion of the building to remain. The Contractor shall sawcut the concrete wall and footing full depth, at the location where the foundation is partially isolated from the building or as directed by



Figure 1: Building No. 3 Walls & Foundations

the Resident. The remaining foundation demolition shall be completed after the full depth concrete sawcut is complete. Foundations shall be removed two (2) feet below proposed grading. See attached photos.

These buildings may or may not contain asbestos. Prior to any demolition of building(s) the Contractor shall conduct an asbestos survey on the building(s) to determine if asbestos exists. The survey will be conducted by a DEP certified Asbestos Inspector. No separate payment will be made for the survey and it shall be considered incidental. The survey results will be communicated with the Resident. If asbestos is not discovered, the demolition process may proceed. If asbestos is found, the Contractor will employ a DEP certified Asbestos Abatement Contractor for its removal and disposal. The Department will bear all expenses incurred in the abatement of any asbestos containing material as detailed in Standard Specification 109.7 Equitable Adjustments to Compensation and Time.

The Contractor shall remove all utility service connections prior to demolition of any building. The Contractor shall coordinate disconnection of overhead utilities with the appropriate utility company.

All fill material used for foundation cavities and other excavations shall meet the Standard Specification requirements for Common Borrow, Section 703.18.

Removal of buildings shall include all attached structures including barns and garages as well as steps, slabs, walks, piers, posts, driveways and other incidentals, as directed by the Resident.

Contractor shall provide and maintain all temporary barricades, signs or other safety measures as necessary to complete the work. Contractor shall obtain any and all permits or licenses necessary for the performance of the work and conform to all Federal, State and local laws, regulations or ordinances applicable to the work.

Rodent Control. With the "Notice to Proceed", or when a building becomes available to the Contractor, the Contractor will designate whether rodent control measures are required or not.

The Contractor shall not remove a building until the Contractor has certified it to be free of rodents. Should rodent control measures be required, the Contractor shall procure the extermination services as soon as possible. The Contractor will re-inspect the building within 7 days after the extermination services are performed. The cost of extermination services until the building is found to be rodent free will be paid for as detailed in Standard Specification Section 109.7, Equitable Adjustments to Compensation and Time.

Each building shall be removed promptly after notification that it is free of rodents. All subsequent inspection costs and extermination services necessary to assure that the building is rodent free at time of removal will be at the expense of the Contractor.

Section 202.08 Basis of Payment is amended by the addition of the following:

All work for will be paid for at the contract Lump Sum price, which shall be full compensation for all materials, labor, and equipment necessary for the work described above and as shown in the Plans, and/or as directed by the Resident.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
202.08	Removing Building No. 1	Lump Sum
202.08	Removing Building No. 2	Lump Sum
202.08	Removing Building No. 3	Lump Sum

SPECIAL PROVISION
SECTION 202
REMOVING EXISTING STRUCTURES AND OBSTRUCTIONS

Subsection 202.03 Removing Existing Superstructure, Structural Concrete, Railings, Curbs, Sidewalks, and Bridges is amended by the addition of the following:

Removal of the Bridge Street Bridge shall include removal and proper disposal of the following items:

- A1 Diner stairs and stair foundations at the southeast quadrant of the Bridge Street Bridge,
- Steel checker plate at the A1 Diner's door threshold

Prior to removal of the existing bridge, the Contractor shall detach the freestanding metal grate platform from the bridge fascia located just to the south of the diner car. The Contractor shall take extreme care during the bridge removal to protect the A1 Diner fascia, support framework, existing foundations, and all components to remain. The diner car shall be temporarily underpinned in accordance with Special Provision Section 524 – Temporary Structural Support – A1 Diner.

The southeast corner of the bridge directly interfaces with Frosty's stone masonry basement wall foundation. The Contractor shall take extreme care during the bridge removal to protect the basement wall to remain in place and the immediately adjacent Water and Bridge Street intersection traffic signal electrical conduit.

Removal of the Bridge Street Bridge shall include removing, salvaging, and stockpiling for re-use on the project within the project limits or Contractor's off-site facility the following items:

- A1 Diner sign attached to the existing railing on the Bridge Street Bridge,
- A1 Diner flower boxes attached to the back of the existing railing on the Bridge Street Bridge shall be removed by the business owner prior to the Bridge Closure Period.

Removal of the Maine Avenue Bridge shall include removing, salvaging, and stockpiling for re-use on the project within the project limits or Contractor's off-site facility the following items:

- Existing stacked granite abutments as directed by the Resident. The existing granite shall be stockpiled on site with approval by the Resident
- Flood gauge sign attached to the northwest wingwall. The sign support will be re-used to mount a new City of Gardiner supplied sign. The existing sign shall be stockpiled until the new sign is supplied and the Contractor shall take note of what elevation it is mounted at prior to its removal.

Subsection 202.08 Basis of Payment is amended by the addition of the following:

Removing and stockpiling or disposing of the items listed herein will not be measured for payment separately, but will be considered incidental to the Removing Existing Bridge pay item.

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September 27, 2018

Installation of stockpiled granite as revetment as shown in the Plans will be paid for under the hand labor and equipment rental pay items. Excavation of existing embankment material located between the existing abutments and the new abutments, which is not specified to be included under other pay items, will be considered incidental to the Removing Existing Bridge pay item.

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 by the use of 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 grade wire, or from the existing pavement surface using a 30 foot minimum contact ski (floating beam), or 24 foot non-contact grade control beam.

The Contractor shall locate and remove all objects in the pavement through the work area that would be detrimental to the planing 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 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 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 highways or expressways with directional traffic, the Contractor will be required to remove the pavement surface on the adjacent sections of travel lane and designated portions of adjacent shoulder before the end of the following calendar day unless the centerline edge is tapered to a 12:1. Failure to remove the centerline vertical edge by milling, using the approved taper, or matching the adjacent course the following day will constitute a traffic control violation unless an excusable delay is granted by the Department. The Contractor will be required to remove the specified pavement course over the full width of the mainline traveled ways prior to opening the sections to weekend or holiday traffic.

On roadways with two-way traffic, the Contractor will be required to remove the specified pavement course over the full width of the mainline traveled ways prior to opening the sections to weekend or holiday traffic.

During any period that a centerline vertical or tapered edge exists, the Contractor will be responsible for installing additional warning signage that clearly defines the centerline vertical or tapered edge and elevation differential hazard, as well as additional centerline delineation such as double RPM application, or temporary painted line. The Traffic Control Plan shall include 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 the effected roadway section. All additional signing, labor, traffic control devices, or incidentals will not be paid for directly, but will be considered incidental to the appropriate 652 bid items.

When pavement milling operations leave a 2 inch or less exposed vertical face at the edge of the traveled way, 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 pavement milling operations leave an exposed vertical face at the edge of travelway.

When pavement milling operations on directional or bi-directional traffic roadways leave an exposed vertical face greater than 2 inches at the edge of the traveled way the edge shall be either;

1. 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. Have 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. Payment will be made under the pavement removal item.
3. A pavement layer will be placed to reduce the vertical edge to 2 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. 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.

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. Issues that arise after 7 calendar days will be the responsibility of the Contractor unless otherwise noted in Special Provision Section 105 – Limitations Of Operations.

SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(CONTAMINATED SOIL AND GROUNDWATER MANAGEMENT)

General. The work under this specification shall be performed in conformance with all the procedures and requirements described herein for the following activities: contaminated soil handling, reuse, temporary stockpiling, transportation, storage and disposal and, contaminated water handling, storage, treatment and disposal. This specification also addresses contaminated soil location, identification, and classification. The intent of this specification is to ensure that any contaminated soil and/or water encountered during construction will be managed in a manner that protects worker health and safety, public welfare and the environment.

Environmental Site Conditions. The Maine Department of Transportation's Office of Safety and Compliance (MaineDOT's-OSC.) has conducted a series of assessments related to the Gardiner Bridge Street (Route 201) Bridge Replacement Project. An initial Phase I Environmental Assessment for the project area was completed to obtain a general understanding of the environmental conditions along the project corridor. Data garnered from this assessment was used to design a Modified, Phase II Contamination Assessment for the project. The primary focus of the assessments was to evaluate the type and extent of subsurface contamination along the project corridor. The Phase I Assessment included a review of relevant Maine Department of Environmental Protection's (MaineDEP's) and Environmental Protection Agency's (EPA's) databases and field reconnaissance of the project area. During Phase II, borings were advanced along the project's length for investigative purposes. Using data gathered from the advancement of these borings and previous work by others, two areas with impacted soil were identified. A photo-ionization detector (PID) was used to test soil grab samples from select explorations for volatile organic compound (VOC) concentrations indicative of petroleum products. (See *Identified Areas of Contamination* below). Select samples for laboratory testing were also taken to further aid in evaluating subsurface conditions. The results of these investigations are available for review from the Senior Geologist at MaineDOT's-OSC in Augusta (207-624-3004).

Identified Area of Contamination. MaineDOT's-OSC investigation identified two areas of soil contamination associated with the Bridge Reconstruction Project. For reference, these areas are designated as "**Area A**" and "**Area B**" respectively. The location of **Area A** is defined as located in the vicinity of Chapman's Garage roughly between MaineDOT survey stations 70+50 to roughly MaineDOT station 72+50 left of centerline along Bridge Street (Route 201). Within **Area A**, poly-bag field samples screened with a photo-ionization detector (PID) were non-detect (ND) to 200 parts per million (PPM). Laboratory results in the vicinity of the Chapman's Garage indicated the following VOCs were detected; Isopropylbenzene from ND to 0.68 ppm, N-

Propylbenzene from ND to 2.0 ppm, 1,3,5-Trimethylbenzene from ND to 1.40 ppm, sec-Butylbenzene from ND to 0.56 ppm, and N-Butylbenzene from ND to 1.40 ppm. The following Volatile Petroleum Hydrocarbons (VPH) were detected; C5-C8 Aliphatic from ND to 330 ppm, C9-C12 Aliphatic from 120 ppm to 290 ppm, and C9-C10 Aromatics from 110 ppm to 240 ppm. The following Extractable Petroleum Hydrocarbons (EPH) were detected; C9-C18 Aliphatic from 68 ppm to 300 ppm, C19-C36 Aliphatic from ND to 420 ppm, C11-C22 Aromatics from ND to 670 ppm, Naphthalene from ND to 1.7 ppm, 2-Methylnaphthalene from ND to 1.0 ppm, Phenanthrene from ND to 1.7 ppm, Anthracene from ND to 0.00 ppm, Benzo (a) anthracene from ND to 1.8 ppm, benzo(a)pyrene from ND to 1.7 ppm, Benzo(b)fluoranthene from ND to 1.0 PPM, Benzo(g,h,j)perylene from ND to 0.65 ppm, Benzo(k)fluoranthene from ND to 1.8 ppm, Chrysene from ND to 1.8 PPM, Fluoranthene from ND to 2.8 ppm, and Pyrene from ND to 3.4 ppm. Lead was detected from 31.5 ppm to 181 ppm. These concentrations define the soils as potential special waste per State remedial guidelines. Soil contamination in **Area A** appears to be related to the past use and storage of petroleum related products (gasoline and fuel oil).

The location of **Area B** is defined as in the vicinity of the A-1 Diner located roughly between MaineDOT stations 71+75 to roughly MaineDOT station 72+00 right of center line. Within **Area B**, samples screened with a PID were 241 ppm. Regrettably, no laboratory samples are available for this area.

Identifying and Screening Contaminated Soil and Groundwater. Within the contaminated sections designated **Area A** and **Area B**, excavated soils will be classified by the Resident (or a MaineDOT-OSC representative) based on photo-ionization detector (PID) field screening measurements.

The excavated soils shall be classified as Group 1 or Group 2.

Group 1 soils shall have PID field screening measurements indicating relative concentrations of volatile organic compounds (VOCs) less than or equal to 20 parts per million (ppm) as measured in a 200-gram soil headspace using a foil bag.

Group 2 soils shall have PID field screening measurements indicating VOC concentrations greater than 20 ppm as measured in a 200-gram headspace sample and less than the value indicated in Table 1 of SOP-TS004 when screened in accordance with the “Excavation-Construction Worker” clean-up scenario. Field screening will also be done using an oleophilic dye test.

Group 3 soils shall exceed the threshold limit stated in the TS004 Compendium of Field Testing of soil samples exceeding “Excavation-Construction Worker” clean-up scenario or has a saturated result using the oleophilic dye test.

Handling and Disposition of Soil Materials. Within **Area A and Area B** soil material excavated during construction shall be handled as follows:

Group 1 soils are not considered contaminated. Thus, special handling and disposal is not required for Group 1 soils.

Group 2 soils shall be placed back into their excavation section of origin. The Contractor shall make every attempt to side cast any Group 2 soils next to their excavation site. Upon completion of the given constructional feature, the Group 2 soils shall be placed back into the excavation up to 2 feet below ground surface. The fill cannot be reused along the fill face of proposed abutments and retaining walls. Group 2 materials not handled in this manner shall be considered Surplus Group 2 soils. Surplus Group 2 soils must be disposed of or treated at a facility licensed by the MDEP to accept petroleum contaminated special waste. The Contractor is solely responsible for obtaining the associated permits and approvals for the disposal or treatment of the Surplus Group 2 soils from all relevant Municipal, State, and Federal agencies at no additional cost to the State. Notification shall be given to the Resident once approval is granted for the acceptance of this material at the off-site facility. No removal of Surplus Group 2 soils from the project shall occur without prior approval by the Resident. If any Surplus Group 2 soils cannot be transported to the pre-approved, properly licensed facility within 8 hours of their excavation, they must be placed in a Temporary Secure Stockpile Area somewhere within the project limits (See Temporary Secured Stockpile Area below).

In **Area B**, any Group 2 soils that are encountered can be stockpiled and then reused as backfill around the retaining wall to be installed in this area. The soils can be reused to 2 feet below the ground surface and not against the face of the wall.

Group 3 soils shall not be excavated without prior approval by the Resident. The Contractor shall arrange and undertake disposal of all Group 3 soils at a landfill or treatment facility licensed to accept petroleum contaminated special waste. The Contractor is responsible for all additional testing required by the receiving facility. Group 3 soils that cannot be disposed of within 8 hours of excavation shall be stored in a Temporary Secured Stockpile area. If the Contractor proposes other disposal or treatment options, the Contractor is solely responsible for obtaining the associated permits and approvals from all relevant Municipal, State, and Federal agencies at no additional cost to the State.

The Resident is responsible for signing any manifests or bills of lading required to transport and dispose of contaminated soil. The Resident will send all manifests and bills of lading to MaineDOT, Office of Safety and Compliance, Station 16, Augusta, Maine 04333.

Trench and Underdrain/Stormdrain Design in Contaminated Sections. In **Area A** and **Area B**, solid, Option III, non-perforated pipe shall be used instead of perforated underdrain pipe to help prevent the infiltration and transportation of potentially contaminated groundwater within the underdrain/stormdrain system. The Contractor shall backfill around the pipe and trenches in this section with uncontaminated material. Backfilling of the trench shall be in accordance with Section 206.03. All stones larger than 3 inches, frozen lumps, dry chunks of clay or any other objectionable matter shall be removed before backfilling.

Seepage control dikes (SCD) shall be installed roughly every 60 feet along the stormwater pipe trench

The SCDs shall consist of a mineral clay material with a liquid limit of equal to or greater than 24 and a natural moisture content of at least 20 percent. The clay should be placed in dry excavations in 6-inch maximum, thick lifts and compacted to 90% of the maximum dry unit weight as determined by AASHTO T99 (Standard Proctor). The SCDs shall be 5 feet long, be in intimate contact with the trench floor, trench walls and circumference of the pipe and extend up to the bottom of the road base. The excavated existing road base or similar material may be placed on top of the SCDs. The Contractor shall take care to ensure that no voids or uncompacted soil is left beside or beneath the Option III culvert pipe.

Secured Stockpile Area. Direct transport of Surplus Group 2 or Group 3 soils to a pre-approved management facility is recommended. However, should the Contractor temporarily store any Surplus Group 2 or Group 3 soils at the site for more than 8 hours following excavation, they must be placed into a properly constructed Temporary Secured Stockpile Area. The Temporary Secured Stockpile Area must be constructed as defined herein and must be approved by the Resident prior to its use.

Should the Contractor utilize a Temporary Secured Stockpile Area, they shall install a continuous 0.3-meter-high compacted soil berm around the Secured Stockpile. The Secured Stockpile shall be placed on a liner of 20-mil polyethylene and securely covered with 20-mil polyethylene. The polyethylene liner and cover shall be placed over the soil berm and be installed to ensure that precipitation water drains directly to the outside of the berm perimeter while leachate from the contaminated soil is retained within the stockpile. The Secured Stockpile and soil berm shall be enclosed within a perimeter of concrete Jersey barriers or wooden barricades. The area within the Jersey barriers (or wooden barricades) shall be identified as a "restricted area" to prevent unauthorized access to the contaminated soils.

Secured Stockpile Area - Materials.

A. Polyethylene. Polyethylene used for liner in the Secured Stockpile Area shall have a minimum of 20-mil thickness and shall meet the requirements of ASTM D3020.

B. Common Borrow. Fill used in the construction of the Temporary Secured Stockpile Area soil berm shall consist of Common Borrow and meet the requirements of Section 703.18

C. Concrete Barriers or Wooden Barricades. Concrete barriers or Wooden Barricades to form the sides of the Temporary Secured Stockpile Area shall meet the requirements of Section 526 or 652.05.

Health and Safety/Right-to-Know. Contractors and subcontractors are required to notify their workers of the history of the site and contamination that may be present and to be alert for evidence of contaminated soil and groundwater. The Contractor shall notify the Resident **at least three business days** prior to commencing any excavation in **Areas A and Area B.**

The Contractor shall prepare a site-specific Health and Safety Plan (HASP) for its workers and subcontractors who may work in the contaminated areas of the site. A Qualified Health and Safety Professional shall complete the HASP. The Qualified Health and Safety Professional will be an expert in field implementation of the following federal regulations:

29 CFR 1910.120 or 29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1910.134	Respiratory Protection
29 CFR 1926.650	Subpart D - Excavations
29 CFR 1926.651	General Requirements
29 CFR 1926.652	Requirements for Protective Systems

MaineDOT is voluntarily ameliorating the contamination in **Areas A and Area B.** The remedial efforts defined herein have been reviewed and approved by MaineDEP. Given that this is a voluntary clean up effort approved by a regulatory agency, the OSHA requirements as defined in 29 CFR 1910.120 apply. These requirements mandate that workers and any subcontractors working in the contaminated areas shall comply with all OSHA regulations for Hazardous Waste Operations and Emergency Response including a 40-hour initial hazardous waste operations certification [OSHA 1910.120(e)], annual 8-hour refresher course within the last 12 months and medical surveillance [OSHA 1910.120(f)] within the last 12 months.

The contractor shall designate a person to provide direct on-site supervision of the work in the contaminated areas. This person shall have the training under OSHA 1910.120 (e) as above and in addition be qualified as a construction Competent Person. It is the responsibility of the competent person to make those inspections necessary to identify situations that could result in hazardous conditions (e.g., possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions), and then to ensure that corrective measures are taken.

Submittals. The Contractor shall submit a site-specific Health and Safety Plan (HASP) to the Resident at least two weeks in advance of any excavation work on the project. The Contractor shall not proceed with work until MaineDOT has reviewed the plan and notified the Contractor that it is acceptable.

Health and Safety Monitoring. Within the contaminated areas of the project, the Contractor's designated on-site person shall monitor the worker breathing zone for those constituents specified in the Contractor's HASP. The Contractor shall provide all required health and safety monitoring equipment.

Dewatering. Groundwater may be encountered and its removal necessary to complete work within **Area A** and **Area B**. It will be treated as "contaminated" water. The Contractor shall inform the Resident before any dewatering commences. The "contaminated" water shall be pumped into a temporary holding tank(s). The Contractor will be responsible for the procurement of any holding tank(s). Any testing, treatment and/or disposal of the stored, petroleum-contaminated water shall be undertaken by the Contractor in accordance with applicable Federal, State and local regulatory requirements.

On-Site Water Storage Tanks - Materials. If dewatering within the identified contaminated area becomes necessary, the holding tanks used for temporary storage of contaminated water pumped from excavations shall be contamination free and have a minimum capacity of 2,000 gallons.

Dust Control. The Contractor shall employ dust control measures to minimize the creation of airborne dust during the construction process in potentially contaminated areas. As a minimum, standard dust control techniques shall be employed where heavy equipment and the public will be traveling. These may include techniques such as watering-down the site or spreading hygroscopic salts.

Unanticipated Contamination. If the Contractor encounters previously undiscovered contamination or potentially hazardous conditions related to contamination, the Contractor shall immediately suspend work and secure the area. The Contractor will then notify the Resident immediately. These potentially hazardous conditions include, but are not limited to, buried containers, drums, tanks, "oil saturated soils", strong odors, or the presence of petroleum sufficient to cause a sheen on the groundwater. The area of potential hazard shall be secured to minimize health risks to workers and the public and

to prevent a release of contaminants into the environment. The source of any suspected contamination shall be evaluated by the Resident (or MaineDOT's -OSC representative). As appropriate, the Resident will notify the MDEP's Response Services Unit in Augusta and MaineDOT's-OSC. The Gardiner Fire Department(s) must also be notified prior to removal of buried storage tanks and associated piping. The Contractor will evaluate the impact of the hazard on construction, amend the HASP if necessary, and with the Resident's approval, recommence work in accordance with the procedures of this Special Provision.

Method of Measurement. There will be no measurement for identification and environmental screening of contaminated soil material (this will be done by the Resident or MaineDOT-OSC representative).

Measurement for the development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel shall be by lump sum.

Measurement of the off-site treatment or disposal of Surplus Group 2 and all Group 3 soils will be by the ton of Special Excavation.

There will be no measurement for construction of a Temporary Secured Stockpile Area. Construction of a Temporary Secured Stockpile Area, if necessary, is considered incidental to project construction. There will be no measurement for hauling Surplus Group 2 material or Group 3 soils to the Temporary Secure Stockpile area or placement and removal of Surplus Group 2 or Group 3 soils in or out of the Temporary Secure Stockpile area. All hauling and any subsequent management/placement of contaminated soils are considered incidental to project construction.

There will be no measurement for additional laboratory testing of contaminated soil that is required by the landfill or treatment facility. Testing is incidental to the disposal of Special Excavation.

Measurement for the following items shall be according to Subsection 109:04 ("Change Order"/Force Account): any necessary contaminated water holding tank(s); and treatment or disposal of any contaminated groundwater.

Basis of Payment. There will be no payment for the identification and environmental screening of contaminated soil material (this will be done by the Resident or MaineDOT-OSC representative).

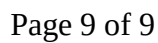
Payment for the development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel shall be by the lump sum

Payment for off site disposal or treatment of contaminated Surplus Group 2 and all Group 3 soils at a MDEP licensed facility shall be by the ton of Special Excavation.

There will be no payment for the construction of the Temporary Secured Stockpile Area or hauling/management/placement of contaminated soils to the Temporary Secured Stockpile Area. The Temporary Secured Stockpile Area shall be considered incidental to project construction.

Payment for the following items shall be according to Subsection 109:04 ("Change Order"/Force Account): any necessary contaminated water holding tank(s); and treatment or disposal of any contaminated groundwater.

Pay Item	Pay Unit
203.2312 Health and Safety Plan (HASP)	L.S.
203.2333 Disposal/Treatment of Special Excavation	Ton



SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(CONTAMINATED SOIL AND GROUNDWATER MANAGEMENT)

General. The work under this specification shall be performed in conformance with all the procedures and requirements described herein for the following activities: contaminated soil handling, reuse, temporary stockpiling, transportation, storage and disposal and, contaminated water handling, storage, treatment and disposal. This specification also addresses contaminated soil location, identification, and classification. The intent of this specification is to ensure that any contaminated soil and/or water encountered during construction will be managed in a manner that protects worker health and safety, public welfare and the environment.

Environmental Site Conditions. The Maine Department of Transportation's Office of Safety and Compliance (MaineDOT's-OSC.) has conducted a series of assessments related to the Gardiner Main Avenue (Route 24) Bridge Improvement Project. An initial Phase I Environmental Assessment for the project area was completed to obtain a general understanding of the environmental conditions along the project corridor. Data garnered from this assessment was used to design a Modified, Phase II Contamination Assessment for the project. The primary focus of the assessments was to evaluate the type and extent of subsurface contamination along the project corridor. The Phase I Assessment included a review of relevant Maine Department of Environmental Protection's (MaineDEP's) and Environmental Protection Agency's (EPA's) databases and field reconnaissance of the project area. During Phase II, borings were advanced along the project's length for investigative purposes. Using data gathered from the advancement of these borings and previous work by others, one area with impacted soil was identified. A photo-ionization detector (PID) was used to test soil grab samples from select explorations for volatile organic compound (VOC) concentrations indicative of petroleum products. (See *Identified Areas of Contamination* below). Select samples for laboratory testing were also taken to further aid in evaluating subsurface conditions. The results of these investigations are available for review from the Senior Geologist at MaineDOT's-OSC in Augusta (207-624-3004).

Identified Area of Contamination. MaineDOT's-OSC investigation identified one area of soil contamination associated with the Maine Avenue Bridge (Route 24) Bridge Improvement Project. For reference, this area is designated as "**Area A**". The location of **Area A** is defined as located in the vicinity of a former retail gasoline station roughly between MaineDOT survey stations 4+25 to roughly MaineDOT station 5+00 right and left of centerline. Within **Area A**, poly-bag field samples screened with a photo-ionization detector (PID) were from 0.1 parts per million (PPM) to 382 ppm. Laboratory results indicate the following Extractable Petroleum Hydrocarbons (EPH); C9-C18 from 120 to 200 ppm, C19-C36 from 28 to 110 ppm and C11-C22 from 80 to 230 ppm. For Volatile Petroleum Hydrocarbons (VPH) the following were detected; C5-C8 Aliphatic Hydrocarbons from ND ppm to 940 ppm, C9-C10 Aromatic Hydrocarbons from 97 ppm

to 510 ppm and C9-C12 from 93 ppm to 670 ppm. The laboratory results indicate the following VOCs were detected: 1,2,4 Trimethylbenzene from ND to 2.2 ppm, 1,3,5-Trimethylbenzene from ND to 11.0 ppm, Ethylbenzene from ND to 3.2 ppm, Isopropylbenzene from ND to 3.311.7 ppm, Naphthalene from ND to 2.4 ppm, n-Butylbenzene from 0.35 ppm to 2.4 ppm, n-Propylbenzene from ND to 5.2 ppm, P-Isopropyltoluene from ND to 5.2 ppm, and sec-Butylbenzene from 0.42 ppm to 1.7 ppm. Total lead was from 96.5 to 107 ppm. These concentrations define the soils as potential special waste per State remedial guidelines. Soil contamination in **Area A** appears to be related to the past use and storage of petroleum related products (gasoline and fuel oil).

Identifying and Screening Contaminated Soil and Groundwater. Within the contaminated section designated **Area A**, excavated soils will be classified by the Resident (or a MaineDOT-OSC representative) based on photo-ionization detector (PID) field screening measurements.

The excavated soils shall be classified as Group 1, Group 2 or Group 3.

Group 1 soils shall have PID field screening measurements indicating relative concentrations of volatile organic compounds (VOCs) less than or equal to 20 parts per million (ppm) as measured in a 200 gram soil headspace using a foil bag.

Group 2 soils shall have PID field screening measurements indicating VOC concentrations greater than 20 ppm as measured in a 200 gram headspace sample and less than the value indicated in Table 1 of SOP-TS004 when screened in accordance with the "Excavation-Construction Worker" clean-up scenario. Field screening will also be done using an oleophilic dye test.

Group 3 soils shall exceed the threshold limit stated in the TS004 Compendium of Field Testing of soil samples exceeding "Excavation-Construction Worker" clean-up scenario or has a saturated result using the oleophilic dye test.

Handling and Disposition of Soil Materials. Within **Area A** soil material excavated during construction shall be handled as follows:

Group 1 soils are not considered contaminated. Thus, special handling and disposal are not required for Group 1 soils.

Group 2 soils shall be placed back into their excavation section of origin. The Contractor shall make every attempt to side cast any Group 2 soils next to their excavation site. Upon completion of the given constructional feature, the Group 2 soils shall be placed back into the excavation up to 2 feet below ground surface. Group 2 materials not handled in this manner shall be considered Surplus Group 2 soils. Surplus Group 2 soils must be disposed of or treated at a facility licensed by the MDEP to accept petroleum contaminated special waste. The Contractor is

solely responsible for obtaining the associated permits, any additional testing and approvals for the disposal or treatment of the Surplus Group 2 soils from all relevant Municipal, State, and Federal agencies at no additional cost to the State. Notification shall be given to the Resident once approval is granted for the acceptance of this material at the off site facility. No removal of Surplus Group 2 soils from the project shall occur without prior approval by the Resident. If any Surplus Group 2 soils cannot be transported to the pre-approved, properly licensed facility within 8 hours of their excavation, they must be placed in a Temporary Secure Stockpile Area somewhere within the project limits (See Temporary Secured Stockpile Area below).

Group 3 soils shall not be excavated without prior approval by the Resident. The Contractor shall arrange and undertake disposal of all Group 3 soils at a landfill or treatment facility licensed to accept petroleum contaminated special waste. The Contractor is responsible for all additional testing required by the receiving facility. Group 3 soils that cannot be disposed of within 8 hours of excavation shall be stored in a Temporary Secured Stockpile area. If the Contractor proposes other disposal or treatment options, the Contractor is solely responsible for obtaining the associated permits and approvals from all relevant Municipal, State, and Federal agencies at no additional cost to the State.

The Resident is responsible for signing any manifests or bills of lading required to transport and dispose of contaminated soil. The Resident will send all manifests and bills of lading to MaineDOT, Office of Safety and Compliance, Station 16, Augusta, Maine 04333.

Trench and Underdrain/Stormdrain Design in Contaminated Sections. In **Area A**, solid, Option III, non-perforated pipe shall be used instead of perforated underdrain pipe to help prevent the infiltration and transportation of potentially contaminated groundwater within the underdrain/stormdrain system. The Contractor shall backfill around the pipe and trenches in this section with uncontaminated material. Backfilling of the trench shall be in accordance with Section 206.03. All stones larger than 3 inches, frozen lumps, dry chunks of clay or any other objectionable matter shall be removed before backfilling.

Seepage control dikes (SCD) shall be installed roughly every 60 feet along the stormwater pipe trench

The SCDs shall consist of a mineral clay material with a liquid limit of equal to or greater than 24 and a natural moisture content of at least 20 percent. The clay should be placed in dry excavations in 6 inch maximum, thick lifts and compacted to 90% of the maximum dry unit weight as determined by AASHTO T99 (Standard Proctor). The SCDs shall be 5 feet long, be in intimate contact with the trench floor, trench walls and circumference of the pipe and extend up to the bottom of the road base. The excavated existing road base or similar material may be placed on top of the SCDs. The Contractor

shall take care to ensure that no voids or uncompacted soil is left beside or beneath the Option III culvert pipe.

Secured Stockpile Area. Direct transport of Surplus Group 2 or Group 3 soils to a pre-approved management facility is recommended. However, should the Contractor temporarily store any Surplus Group 2 or Group 3 soils at the site for more than 8 hours following excavation, they must be placed into a properly constructed Temporary Secured Stockpile Area. The Temporary Secured Stockpile Area must be constructed as defined herein and must be approved by the Resident prior to its use.

Should the Contractor utilize a Temporary Secured Stockpile Area, they shall install a continuous 2 foot high compacted soil berm around the Secured Stockpile. The Secured Stockpile shall be placed on a liner of 20-mil polyethylene and securely covered with 20-mil polyethylene. The polyethylene liner and cover shall be placed over the soil berm and be installed to ensure that precipitation water drains directly to the outside of the berm perimeter while leachate from the contaminated soil is retained within the stockpile. The Secured Stockpile and soil berm shall be enclosed within a perimeter of concrete Jersey barriers or wooden barricades. The area within the Jersey barriers (or wooden barricades) shall be identified as a "restricted area" to prevent unauthorized access to the contaminated soils.

Secured Stockpile Area - Materials.

A. Polyethylene. Polyethylene used for liner in the Secured Stockpile Area shall have a minimum of 20-mil thickness and shall meet the requirements of ASTM D3020.

B. Common Borrow. Fill used in the construction of the Temporary Secured Stockpile Area soil berm shall consist of Common Borrow and meet the requirements of Section 703.18

C. Concrete Barriers or Wooden Barricades. Concrete barriers or Wooden Barricades to form the sides of the Temporary Secured Stockpile Area shall meet the requirements of Section 526 or 652.05.

Health and Safety/Right-to-Know. Contractors and subcontractors are required to notify their workers of the history of the site and contamination that may be present and to be alert for evidence of contaminated soil and groundwater. The Contractor shall notify the Resident **at least three business days** prior to commencing any excavation in **Area A**.

The Contractor shall prepare a site specific Health and Safety Plan (HASP) for its workers and subcontractors who may work in the contaminated areas of the site. A Qualified Health and Safety Professional shall complete the HASP. The Qualified Health and Safety Professional will be an expert in field implementation of the following federal regulations:

29 CFR 1910.120 or 29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1910.134	Respiratory Protection
29 CFR 1926.650	Subpart D - Excavations
29 CFR 1926.651	General Requirements
29 CFR 1926.652	Requirements for Protective Systems

MaineDOT is voluntarily ameliorating the contamination in **Area A**. The remedial efforts defined herein have been reviewed and approved by MaineDEP. Given that this is a voluntary clean up effort approved by a regulatory agency, the OSHA requirements as defined in 29 CFR 1910.120 apply. These requirements mandate that workers and any subcontractors working in the contaminated areas shall comply with all OSHA regulations for Hazardous Waste Operations and Emergency Response including a 40 hour initial hazardous waste operations certification [OSHA 1910.120(e)], annual 8 hour refresher course within the last 12 months and medical surveillance [OSHA 1910.120(f)] within the last 12 months.

The contractor shall designate a person to provide direct on-site supervision of the work in the contaminated areas. This person shall have the training under OSHA 1910.120 (e) as above and in addition be qualified as a construction Competent Person. It is the responsibility of the competent person to make those inspections necessary to identify situations that could result in hazardous conditions (e.g., possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions), and then to insure that corrective measures are taken.

Submittals. The Contractor shall submit a site specific Health and Safety Plan (HASP) to the Resident at least two weeks in advance of any excavation work on the project. The Contractor shall not proceed with work until MaineDOT has reviewed the plan and notified the Contractor that it is acceptable.

Health and Safety Monitoring. Within the contaminated areas of the project, the Contractor's designated on-site person shall monitor the worker breathing zone for those constituents specified in the Contractor's HASP. The Contractor shall provide all required health and safety monitoring equipment.

Dewatering. Groundwater may be encountered and its removal necessary to complete work within **Area A**. It will be treated as "contaminated" water. The Contractor shall inform the Resident before any dewatering commences. The "contaminated" water shall be pumped into a temporary holding tank(s). The Contractor will be responsible for the procurement of any holding tank(s). Any testing, treatment

and/or disposal of the stored, petroleum-contaminated water shall be undertaken by the Contractor in accordance with applicable Federal, State and local regulatory requirements.

On-Site Water Storage Tanks - Materials. If dewatering within the identified contaminated area becomes necessary the holding tanks used for temporary storage of contaminated water pumped from excavations shall be contamination free and have a minimum capacity of 2,000 gallons.

Dust Control. The Contractor shall employ dust control measures to minimize the creation of airborne dust during the construction process in potentially contaminated areas. As a minimum, standard dust control techniques shall be employed where heavy equipment and the public will be traveling. These may include techniques such as watering-down the site or spreading hygroscopic salts.

Unanticipated Contamination. If the Contractor encounters previously undiscovered contamination or potentially hazardous conditions related to contamination, the Contractor shall immediately suspend work and secure the area. The Contractor will then notify the Resident immediately. These potentially hazardous conditions include, but are not limited to, buried containers, drums, tanks, "oil saturated soils", strong odors, or the presence of petroleum sufficient to cause a sheen on the groundwater. The area of potential hazard shall be secured to minimize health risks to workers and the public and to prevent a release of contaminants into the environment. The source of any suspected contamination shall be evaluated by the Resident (or MaineDOT's -OSC representative). As appropriate, the Resident will notify the MDEP's Response Services Unit in Augusta and MaineDOT's-OSC. The Gardiner Fire Department(s) must also be notified prior to removal of buried storage tanks and associated piping. The Contractor will evaluate the impact of the hazard on construction, amend the HASP if necessary, and with the Resident's approval, recommence work in accordance with the procedures of this Special Provision.

Method of Measurement. There will be no measurement for identification and environmental screening of contaminated soil material (this will be done by the Resident or MaineDOT-OSC representative).

Measurement for the development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel shall be by lump sum.

Measurement of the off site treatment or disposal of Surplus Group 2 and all Group 3 soils will be by the ton of Special Excavation.

There will be no measurement for construction of a Temporary Secured Stockpile Area. Construction of a Temporary Secured Stockpile Area, if necessary, is considered incidental to project construction. There will be no measurement for hauling Surplus Group 2 material or Group 3 soils to the Temporary Secure Stockpile area or placement

and removal of Surplus Group 2 or Group 3 soils in or out of the Temporary Secure Stockpile area. All hauling and any subsequent management/placement of contaminated soils are considered incidental to project construction.

There will be no measurement for additional laboratory testing of contaminated soil that is required by the landfill or treatment facility. Testing is incidental to the disposal of Special Excavation.

Measurement for the following items shall be according to Subsection 109:04 ("Change Order"/Force Account): any necessary contaminated water holding tank(s); and treatment or disposal of any contaminated groundwater.

Basis of Payment. There will be no payment for the identification and environmental screening of contaminated soil material (this will be done by the Resident or MaineDOT-OSC representative).

Payment for the development of a Health and Safety Plan (HASP) and providing health and safety equipment and personnel shall be by the lump sum

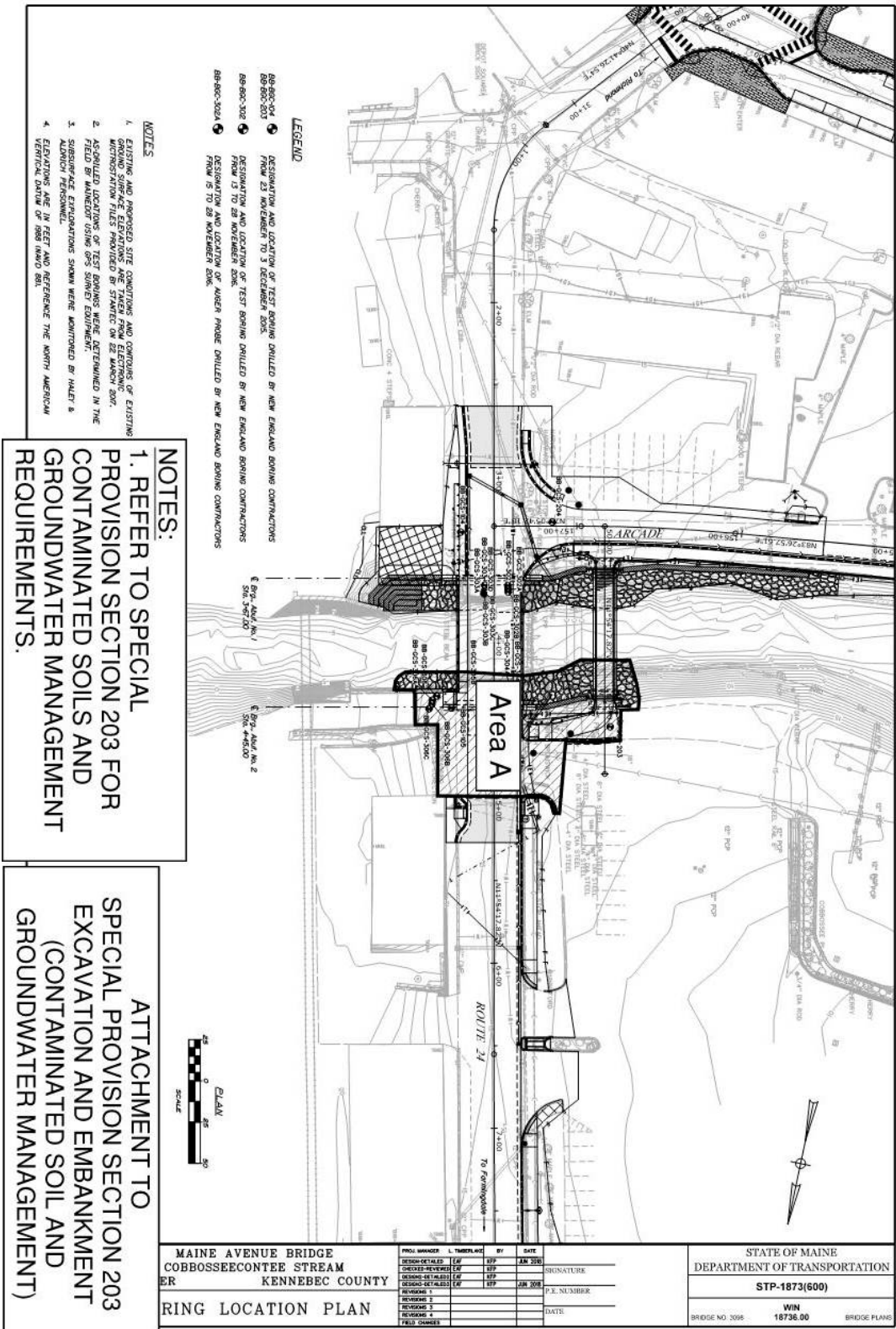
Payment for off site disposal or treatment of contaminated Surplus Group 2 and all Group 3 soils at a MDEP licensed facility shall be by the ton of Special Excavation.

There will be no payment for the construction of the Temporary Secured Stockpile Area or hauling/management/placement of contaminated soils to the Temporary Secured Stockpile Area. The Temporary Secured Stockpile Area shall be considered incidental to project construction.

Payment for the following items shall be according to Subsection 109:04 ("Change Order"/Force Account): any necessary contaminated water holding tank(s); and treatment or disposal of any contaminated groundwater.

Pay Item	Pay Unit
203.2312 Health and Safety Plan (HASP)	L.S.
203.2333 Disposal/Treatment of Special Excavation	Ton

Filename: \\084_Maine Ave Site and Expo Plan.dwg Division: BRIDGE Username: dslatoyr Date: 6/7/2018



SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(Dredge Materials)

Management and Disposal: Dredge Material (See MaineDOT Standard Specifications § 101.2 Definitions) is regulated as a Special Waste.

In accordance with CMR 418, one hundred cubic yards or less of Dredge Material Beneficially Used in the area(s) adjacent to and draining into the dredged water body is exempt from Beneficial Use Permits. Work associated with the Gardiner Bridge Replacement initiatives will require the excavation of select Dredge Material from Cobbassecontee Stream. It is anticipated that more than 500-cubic yards of Dredge Material will be excavated. There is onsite Beneficial Use for up to 500 cubic yards of this Dredge Material; the remaining Dredge Material (approximately 111-cubic yards) shall be disposed of at an appropriately licensed facility.

The Contractor shall dispose of Dredge Material from the project that is not Beneficially Used at the site of generation at a facility licensed by the Maine Department of Environmental Protection for the management of Special Waste. The Contractor shall be responsible for making all necessary arrangements for dewatering and proper management of the Dredge Material, including any laboratory testing, in accordance with the facility's license. The Contractor shall provide documentation to the Resident that the Dredge Material was managed as specified. The submitted documentation shall consist of truck manifests, waybills, or such documentation as may be acceptable to the Resident and shall clearly document the management site location and the quantity of Dredge Material.

It is acknowledged that the excavation of Dredge for this work may include some boulders. The Maine Department of Environmental Protection has determined that sound boulders (rock 12-inches or more in diameter), that are free of adhering sediment or other contaminants, shall be deemed to be Inert Fill material and shall not be included in the Dredge Material Quantities.

Method of Measurement: Dredge Material will be measured by the cubic yard of material removed. Special Waste properly disposed of will be measured by the ton.

Basis of Payment: Payment for the Beneficial Use of Dredge Material will be incidental to the project.

The accepted quantity of Dredge Material properly disposed of, as Special Waste, will be paid for at the contract unit price bid for Disposal of Special Waste.

Payment shall be full compensation for excavation, dewatering, testing, managing, transporting, disposal or placement, and all associated fees.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
203.2318	Disposal of Special Waste	Ton

SPECIAL PROVISION
SECTION 203
EXCAVATION AND EMBANKMENT
(Special Fill)

203.01 Description This work consists of furnishing and placing rock, cobble and granular material on the newly regraded Bridge Street Bridge Abutment No. 2 slope to form a nature-like streambed as shown in the Plans.

203.02 Materials Special Fill shall consist of a well-graded mixture of sub-angular to sub-rounded rock, cobbles, and aggregate similar in size and shape to those found in the natural stream channel and may be obtained as bank run or screening materials from earth borrow pits.

Material from blasting or crushing operations will not be allowed unless the Contractor satisfactorily demonstrates that dredge or pit-run materials are unsuitable or not available.

Clean, granular material excavated on-site in accordance with Special Provision Section 203, Excavation and Embankment - Dredge Materials that meet the requirements of this Special Provision and the approval of the Resident may be used in the mix.

Special Fill shall conform to the following requirements:

- Approximately 10% by volume shall be stones between 12 and 18 inches average dimension.
- Approximately 15% by volume shall be stones between 9 and 12 inches average dimension.
- Approximately 25% by volume shall be stones between 4 and 9 inches average dimension.
- Approximately 50% by volume shall be aggregate meeting the grading requirements of the following table:

Sieve Designation	Percent by Weight Passing Square Mesh Sieves
4 inch	100
3 inch	83-93
2 inch	70-80
1 inch	55-65
½ inch	40-50
No. 4	25-35
No. 200	10-20

Testing and Inspection: Gradation testing will be performed on the portion of Special Fill passing the 4-inch sieve. Failing material will be evaluated for suitability by the Department and

may be rejected. The grading of stone larger than 4 inches will be inspected for conformance with these requirements in accordance with the Standard Specifications, Section 610.032.d Inspection.

203.03 Construction Requirements Mix and place Special Fill on the Abutment No. 2 slope area to the limits and depths shown in the Plans in a manner that minimizes segregation and as follows:

- The Special Fill shall be place in 12” thick lifts to an overall thickness of 2’-0”. Each lift shall be placed as follows.
- Firmly embed stones in the mix and fill in voids by hand tamping and washing-in with water. Larger individual stones protruding more than 6 inches above the average surface grade shall be embedded, re-oriented, or replaced. After washing in, surface voids may appear. Apply granular fill over surface of lift and wash in. Continue this process until voids are filled and surface is sealed. Dredge material may be used for this sealing operation, as approved by the Resident.
- After washing-in and sealing of the top lift, the total depth shall meet the final grading shown on the Plans.
- Thoroughly wet the Special Fill immediately prior to exposure to normal flow conditions.

Method of Measurement

Special Fill will be measured in place by the cubic yard accepted by the Resident.

Basis of Payment

The accepted quantities of Special Fill will be paid for at the respective contract price per cubic yard complete in place. Payment shall be full compensation for furnishing all materials, equipment and labor including mixing materials and washing-in with water.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
203.33 Special Fill	Cubic Yard

SPECIAL PROVISION
SECTION 401 - HOT MIX ASPHALT PAVEMENT

The Standard Specification 401 – Hot Mix Asphalt Pavement, has been modified with the following revisions. All sections not revised by this Supplemental Specification shall be as outlined in Section 401 of the Standard Specifications.

401.07 Hot Mix Asphalt Plant

401.071 General Requirements HMA plants shall conform to AASHTO M156-97.

a. Truck Scales When the hot mix asphalt is to be weighed on scales meeting the requirements of Section 108 - Payment, the scales shall be inspected and sealed by the State Sealer as often as the Department deems necessary to verify their accuracy.

Plant scales shall be checked prior to the start of the paving season, and each time a plant is moved to a new location. Subsequent checks will be made as determined by the Resident. The Contractor will have at least ten 50 pound masses for scale testing.

b. Additives Additives (WMA, anti-strip, etc.) not directly introduced into the binder at the terminal shall be introduced into the HMA plant per the supplier's recommendations and shall be approved by the Asphalt Pavement Engineer, Pavement Quality Manager, or their authorized representative. The system for introducing additives shall be interlocked with the aggregate feed or weigh system to maintain correct proportions for all rates of production and batch sizes. Additive introduction systems shall be controlled by a proportioning device to the amount required on the JMF plus or minus 0.1% of the target. Additive introduction systems shall be interlocked with the plant and the recordation (batch tickets or drum recordation) shall display the additive and the weight and percentage added.

c. Stockpiles HMA plants shall have sufficient space for stockpiles, with a minimum of supply for 2 days production of all aggregate products used in MaineDOT approved mix designs currently under production for the facility at all times. A minimum stockpile supply of 100 ton (70 yards) shall be maintained at all times no matter the production rate for the HMA plant. Stockpiles shall be separated and built to minimize segregation.

401.18 Quality Control Method A, B & C The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The QCP shall meet the requirements of Section 106.6 - Acceptance and this Section. The Contractor shall not begin paving operations until the Department approves the QCP in writing.

The QCP shall address any items that affect the quality of the Hot Mix Asphalt Pavement including, but not limited to, the following:

- a. JMF(s)
- b. Hot mix asphalt plant details
- c. Stockpile Management (to include provisions for how the requirements of 401.071c will be met)
- d. Make and type of paver(s)
- e. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers
- f. Name of QCP Administrator, and certification number
- g. Name of Process Control Technician(s) and certification number(s)
- h. Name of Quality Control Technicians(s) and certification number(s)
- i. Mixing & transportation including process for ensuring that truck bodies are clean and free of debris or contamination that could adversely affect the finished pavement
- j. Testing Plan
- k. Laydown operations including longitudinal joint construction, procedures for avoiding paving in inclement weather, type of release agent to be used on trucks tools and rollers, compaction of shoulders, tacking of all joints, methods to ensure that segregation is minimized, procedures to determine the maximum rolling and paving speeds based on best engineering practices as well as past experience in achieving the best possible smoothness of the pavement. Solvent based agents developed to strip asphalts from aggregates will not be allowed as release agents.
- l. Examples of Quality Control forms including a daily plant report, daily paving report, and delivery slip template for any plant to be utilized.
- m. Silo management and details (can show storage for use on project of up to 36 hours)
- n. Provisions for varying mix temperature due to extraordinary conditions or production limitations. If a warm-mix technology is utilized, a proposed target production temperature range (not to exceed 50°F) will be provided for each mix design.
- o. Name and responsibilities of the Responsible onsite Paving Supervisor.
- p. Method for calibration/verification of Density Gauge
- q. A note that all testing will be done in accordance with AASHTO and the MaineDOT Policies and Procedures for HMA Sampling and Testing.
- r. A detailed description of RAP processing, stockpiling and introduction into the plant as well as a note detailing conditions under which the percent of RAP will vary from that specified on the JMF.
- s. A detailed procedure outlining when production will be halted due to QC or Acceptance testing results.
- t. A plan to address the change in PGAB source or supplier and the potential co-mingling of differing PGAB's.
- u. A procedure to take immediate possession of acceptance samples once released by MaineDOT and deliver said samples to the designated acceptance laboratory.
- v. Provisions for how the QCP will be communicated to the Contractor's field personnel

The Contractor shall cease paving operations whenever one of the following occurs on a lot in progress:

- a. Method A: The Pay Factor for VMA, Voids @ N_d , Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.85. No ceasing of paving operations shall be required for fines to effective binder if the mean test value is equal to the LSL or USL and $s = 0$.
- b. Method B: The Pay Factor for VMA, Voids @ N_d , Percent PGAB, composite gradation, VFB, fines to effective binder or density using all Acceptance or all Quality Control tests for the current lot is less than 0.90. No ceasing of paving operations shall be required for fines to effective binder if the mean test value is equal to the LSL or USL and $s = 0$.
- c. Method C: The Pay Factor for Percent PGAB, percent passing the nominal maximum sieve, percent passing 2.36 mm sieve, percent passing 0.300 mm sieve, percent passing 0.075 mm sieve or density using all Acceptance or all available Quality Control tests for the current lot is less than 0.85. No ceasing of paving operations shall be required for percent passing the nominal maximum sieve, percent passing 2.36 mm sieve, percent passing 0.300 mm sieve, or percent passing 0.075 mm sieve if the mean test value is equal to the LSL or USL and $s = 0$.
- d. The Coarse Aggregate Angularity or Fine Aggregate Angularity value falls below the requirements of Table 3: Aggregate Consensus Properties Criteria in Section 703.07 for the design traffic level.
- e. Each of the first 2 control tests for a Method A or B lot fall outside the upper or lower limits for VMA, Voids @ N_d , or Percent PGAB; or under Method C, each of the first 2 control tests for the lot fall outside the upper or lower limits for the nominal maximum, 2.36 mm, 0.300 mm or 0.075 mm sieves, or percent PGAB.
- f. The Flat and Elongated Particles value exceeds 10% by ASTM D4791.
- g. There is any visible damage to the aggregate due to over-densification other than on variable depth shim courses.
- h. The Contractor fails to follow the approved QCP.

401.203 Method C Lot Size will be the entire production per JMF for the project, or if so agreed at the Pre-paving Conference, equal lots of up to 4500 tons, with unanticipated over-runs of up to 1500 ton rolled into the last lot. Sublot sizes shall be 750 ton for mixture properties, 500 ton for base or binder densities and 250 ton for surface densities. The minimum number of sublots for mixture properties shall be 4, and the minimum number of sublots for density shall be five.

TABLE 7: METHOD C ACCEPTANCE LIMITS

Property	USL and LSL
Passing 4.75 mm and larger sieves	Target +/-7%
Passing 2.36 mm to 1.18 mm sieves	Target +/-5%
Passing 0.60 mm	Target +/-4%
Passing 0.30 mm to 0.075 mm sieve	Target +/-2%
PGAB Content	Target +/-0.4%
% TMD (In place density)	95.0% +/- 2.5%

Pay Adjustment Method C

The Department will use density, Performance Graded Asphalt Binder content, and the percent passing the nominal maximum, 2.36 mm, 0.300 mm and 0.075 mm sieves for the type of HMA represented in the JMF. If the PGAB content falls below 0.80, then the PGAB pay factor shall be 0.55.

Density: For mixes having a density requirement, the Department will determine a pay factor using Table 7: Method C Acceptance Limits:

$$PA = (\text{density PF} - 1.0)(Q)(P) \times 0.50$$

PGAB Content and Gradation The Department will determine a pay factor using Table 7: Method C Acceptance Limits. The Department will calculate the price adjustment for Mixture Properties as follows:

$$PA = (\% \text{ Passing Nom. Max PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing 2.36 mm PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing 0.30 mm PF} - 1.0)(Q)(P) \times 0.05 + (\% \text{ passing 0.075 mm PF} - 1.0)(Q)(P) \times 0.10 + (\text{PGAB PF} - 1.0)(Q)(P) \times 0.25$$

401.223 Process for Dispute Resolution (Methods A B & C only)

TABLE 10: DISPUTE RESOLUTION VARIANCE LIMITS

PGAB Content	+/-0.4%
G _{mb}	+/-0.030
G _{mm}	+/-0.020
Voids @ N _d	+/-0.8%
VMA	+/-0.8%
Passing 4.75 mm and larger sieves	+/- 4.0%
Passing 2.36 mm to 0.60 mm sieves	+/- 3.0%
Passing 0.30 mm to 0.15	+/- 2.0 %
0.075 mm sieve	+/- 0.8%

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT

Desc. Of Course	Grad Design.	Item Number	Bit Cont. % of Mix	Total Thick	No. Of Layers	Comp. Notes
<u>Bridge Street & Maine Avenue Bridge Decks</u>						
Wearing	12.5 mm	403.2081	N/A	1½"	1	2,5,8,12,30
Base	12.5 mm	403.2131	N/A	1½"	1	2,5,8,12,30
<u>6" – State Routes 9/126/201 (Bridge St.) & 24 (Maine Ave.) Travel Way & Shoulders</u>						
<u>Full Depth</u>						
Wearing	12.5 mm	403.2081	N/A	1½"	1	5,8,12,30
Base	12.5 mm	403.2131	N/A	1½"	1	5,8,30
Base	12.5 mm	403.213	N/A	3"	2	1,5,8,13
<u>3" – State Routes 9/126/201 (Water St./Bridge St./Brunswick Ave.), Water St., & Route 24 (Maine Ave.) Travel Way & Shoulders - Mill & Overlay</u>						
Wearing	12.5 mm	403.2081	N/A	1½"	1	5,8,12,30
Base	12.5 mm	403.2131	N/A	1½"	1	5,8,30
<u>1½" – Water St., Route 24 (Maine Ave.) & Church St. Intersection Travel Way & Shoulders - Mill & Overlay</u>						
Wearing	12.5 mm	403.2081	N/A	1½"	1	5,8,30
<u>4" – Arcade Travel Way & Shoulders – Full Depth</u>						
Wearing	12.5 mm	403.2081	N/A	1½"	1	5,8,12,30
Base	12.5 mm	403.2131	N/A	2½"	1	5,8,30
<u>1½" – Arcade Travel Way & Shoulders – Mill & Overlay</u>						
Wearing	12.5 mm	403.2081	N/A	1½"	1	5,8,12,30
<u>3" – Commercial Entrances</u>						
Wearing	12.5 mm	403.2081	N/A	1½"	1	5,10,12,30
Base	12.5 mm	403.2131	N/A	1½"	1	5,10,30
<u>6" or Match Existing – Curb Installation Areas</u>						
Base	12.5 mm	403.2081	N/A	1½"	1	5,8,30
Base	12.5 mm	403.213	N/A	4½"	2/more	1,2,5,17,18
<u>3" – Temporary Approach Pavement</u>						
Temp.	12.5 mm	461.131	N/A	3"	2	1,28
<u>2" – Drives, Islands, Sidewalks, Multi-use Path, and Incidentals</u>						
Wearing	9.5 mm	403.209	N/A	2"	2/more	2,3,10,11,14

COMPLEMENTARY NOTES

1. The required PGAB for this mixture will meet a **PG 64-28** grading
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.

3. The design traffic level for mix placed shall be <0.3 million ESALS.
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 **75 gyrations**.
8. Section 106.6 Acceptance, (2) Method B. The Contractor may request a contract modification to change to testing method "A" prior to work starting on this item.
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 19.0 mm hot mix asphalt may be used at the option of the contractor.
14. A mixture meeting the requirements of section 703.09 Grading 'D', with a minimum PGAB content of 6%, and the limits of Special Provision 401, Table 9 (Drives and Sidewalks) for PGAB content and gradation may be substituted for this item. A job mix formula shall be submitted to the department for approval.
17. 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.
28. See Special Provision 461 – Temporary Pavement for project specifics.
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 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.

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 bedrock-grout bond value by load testing, and ensure that their operations prevent damage to adjacent structures including but not limited to the existing and proposed A1 Diner foundations, Frosty's existing foundations, and the existing northeast channel wall at Maine Avenue. 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 removing or advancing through all underground materials that may interfere with the installation of micropiles.

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:

Bond Breaker A device, sleeve or special treatment placed over the steel reinforcement 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 rock socket 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 bedrock and transfers the applied loads to the surrounding bedrock.

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

Temporary Drill Casing Steel pipe of flush joint type used in the drilling process to stabilize the drill hole and support the soils adjacent to the drill hole.

Micropile A small diameter, bonded, cast-in-place friction pile formed by removing material using non-vibratory and non-displacement methods to create a temporarily 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".

Obstruction Timbers, logs, piles, steel, concrete or other man-placed materials that are present within the fill which unavoidably and completely stops the progress of the drilling despite the Micropile Contractor's diligent efforts to continue, as determined by the Resident. Boulders or cobbles encountered within naturally-deposited soils, such as glacial till, and weathered rock shall not be considered obstructions. Stacked granite blocks that form the existing granite block wall southeast of Abutment No. 2 present at some or all of the micropile locations at Maine Avenue Bridge. These materials will not be considered obstructions. Drilling tools that are lost in the excavation will not be considered obstructions and shall be promptly removed by the Micropile Contractor without compensation. The Resident will determine whether materials encountered during micropile installation are to be classified as an obstruction.

Permanent Steel Casing A steel casing installed in the upper portion of a micropile to increase the micropile's moment capacity and lateral capacity to resist horizontal loads.

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 after the installation of the reinforcement to achieve the load transfer from the structure to be supported to the surrounding rock 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 rock.

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 five (5) 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. Load testers shall have a minimum of one (1) year of experience in testing Micropile foundations.

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.

Include in the Micropile Installation Plan submittal:

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.
2. Details of proposed procedures for micropile installation including, but not limited to, anticipated means/methods for: advancing and cleaning out the temporary drill casing; sealing temporary drill casing into rock; checking cleanliness of drill holes; installation of reinforcing; primary grouting and post-grouting.
3. Procedures and anticipated means/methods and equipment/tooling for advancing through obstructions.
4. Procedures for containment of drilling fluid and spoils, and disposal of spoils. See Special Provision Section 203 Excavation and Embankment (Contaminated Soils and Groundwater Management) for details on potential contaminated soils within the project area. Note that micropiles will be installed within identified areas of contamination. Drilling fluid and spoils within identified areas of contamination shall follow the screening, handling and disposal requirements provided in Special Provision Section 203. Health and safety requirements within identified areas of contamination are also provided in Special Provision Section 203.
5. Shop drawings for all structural steel, including the micropile components, micropile top attachment and bond zone details. Provide information on the length of the permanent steel casing 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 and shall include a plan showing micropile designations.
6. Grout mix design including 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 load test method and equipment proposed 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 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 unconfined compressive design strength of grout shall be 5,000 psi. 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.

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.

Hex nuts and couplers shall be galvanized in accordance with AASHTO M232 (ASTM 153).

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 5 CT Grade N80 (80 ksi) or better and 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 temporary drill casing. Install the permanent steel casing prior to or in conjunction with the micropile installation. 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. Temporary drill casing can be used as permanent steel casing as long as it meets the minimum material, strength, etc. requirements for permanent steel casing outlined herein.

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 shall be within plus 1 inch or minus 2 inches of the design vertical elevation. Centerline of reinforcing steel shall not be more than $\frac{3}{4}$ 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. Temporary 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 temporary drill casing by more than 1 foot 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.

Micropile sockets shall be drilled to the minimum rock socket length shown in the Plans. The socket 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 all obstructions that may interfere with the installation of Micropiles. An impact or vibratory hammer shall not be used to advance temporary drill or permanent 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. Monitor the rate of fluid flow used to progress the holes. Monitor adjacent water body for siltation resulting from drilling and flushing.

Control drilling fluid and dispose of spoil in accordance with the approved procedure.

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.

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 agrees that the materials are obstructions, the Micropile Contractor shall prepare written documentation including all pertinent information relating to the nature, depth, plan location, and expected extent of the obstruction, and details of the method the Micropile Contractor proposes to use to remove or penetrate the obstruction. The Micropile Contractor shall provide physical evidence of the obstruction, if requested by the Resident.

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 obstructions, if encountered. No payment will be made for inefficient or idle time due to the Micropile Contractor's failure to have or maintain such equipment, tools, etc.

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. 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. 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.

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.

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 micropile locations for the following proposed structures for Bridge Street (WIN 18735.00): One (1) at each 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 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 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 0.5-inch total vertical movement in addition to the theoretical elongation of the bar at the top of the micropile 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 six (6) production micropiles on Bridge Street (WIN 18735.00), two (2) per each abutment and two (2) at the southeast retaining wall. 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 0.5 inch of total vertical movement in addition to the theoretical elongation of the bar at the

top of the micropile 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 and the bottom of the rock socket. 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.

Removal/Penetration of Obstructions, measurement shall be the amount of time the Micropile Contractor is diligently performing work of removing, penetrating, backfilling, or other related physical activity necessary for the removal or penetration of the obstruction. Measurement will be made to the nearest 0.25 hour and shall commence no sooner than 1 hour after the Resident is notified that the work has stopped and once obstruction removal/penetration

begins. Measurement shall cease after the obstruction is removed or penetrated to a point where the drilling work can resume as determined by the Micropile Contractor and agreed to by the Resident. The Micropile Contractor shall continue to make progress during the 1-hour period allowed for the Resident to assess the situation.

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 temporary or permanent 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.

Removal/Penetration of Obstructions, Payment shall be at the contract unit price per hour which shall be full compensation to the Micropile Contractor to remove or penetrate obstructions described herein and include all costs associated with the interruption, delay and restart of the micropile installation work.

Payment will be made under:

<u>Pay Item:</u>	<u>Pay Unit</u>
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501.804	Drilling Equipment Mobilization - Micropiles	Lump Sum
501.222	Micropiles (Bridge Street Abutments – 9 5/8” diameter)	Linear Foot
501.222	Micropiles (Bridge Street A1 Retaining Wall – 7 5/8” diameter)	Linear Foot
501.222	Micropiles (Maine Avenue NE Retaining Wall – 9 5/8” diameter)	Linear Foot
501.2331	Micropile Verification Load Test	Each
501.2341	Micropile Proof Load Test	Each
501.807	Removal of Obstructions, Penetration	Hour

Gardiner
WINS 18735.00,
18736.00,
18736.10,
22684.00
September 27, 2018

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

Class of Concrete	Item Number	Description	P	Method
A	502.21 & 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	502.48	Low Permeability Concrete	-	C
LP	502.49	Structural Concrete Curbs and Sidewalks	-	C
Fill	502.565	Concrete Fill	-	C
LP	526.3401	Permanent Concrete Transition Barrier - Modified	-	C
LP	626.32	24 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	626.38	Ground Mounted Cabinet Foundation		C
		Maine Avenue Precast Bridge Unit Alternate 1		
A	530.04	Prefabricated Bridge Structure and Assembly, CIP* Deck	\$400	A
LP	530.04	Structural Concrete Curbs and Sidewalks (CIP*)	-	C
LP	530.04	Prefabricated Bridge Structure and Assembly, Closure Pours	\$400	A
		Maine Avenue NEXT Beam Alternate 2		
A	531.51	Bridge Structure – Detail Build, CIP* Deck**	\$400	A
A	531.51	Bridge Structure – Detail Build, Curbs and Sidewalks (CIP*)	-	C

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WINS 18735.00,
18736.00,
18736.10,
22684.00

September 27, 2018

LP	531.51	Bridge Structure – Detail Build, Closure Pours	-	C
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* Cast-in-place (not constructed by a precast concrete Fabricator).

** If constructed as part of the NEXT beam Detail-Build bid alternate.

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Early Strength Concrete)

502.01 Description This subsection has been amended to include:

This work shall consist of the placement of structural concrete in longitudinal closure pours and end diaphragms, as shown on the Plans.

502.03 Materials This subsection has been amended to include:

All low permeability concrete placed shall be Class LP concrete, per Section 502. 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. Should the Contractor choose to use an accelerated Class LP concrete it shall be non-shrink. Trial batches shall be performed and submitted to the Department indicating a minimum of 5,000 psi compressive strength at 28 days. Additional test cylinders at 4 hours, 24 hours, and 7 days may be required to support the accepted erection plan.

The use of rapid setting concrete products may be substituted for normal Portland Cement concrete and must obtain a minimum of 5,000 psi compressive strength at 28 days. Rapid set cement products proposed for use must be submitted to the Department for approval, have a history of long-term durability, and be used in strict accordance with the manufacturer's recommendations.

502.05 Composition and Proportioning This subsection has been amended to remove the following for accelerated Class LP concrete:

~~Cast in place concrete shall contain not more than 635 lbs/yd³ of cement and not more than 660 lbs/yd³ of cementitious material.~~ Pozzolans are included as cementitious material.

502.18 Method of Measurement This subsection has been amended to include:

Structural concrete for longitudinal closure pours and end diaphragms will not be measured for payment.

502.19 Basis of Payment This subsection has been amended to include:

Structural concrete for longitudinal closure pours and end diaphragms and all materials, labor, equipment, and incidentals necessary to complete the work shall be incidental to the either Item 530.04 Prefabricated Bridge Structure and Assembly under Alternate 1 or Item 531.51 Bridge Structure – Detail Build under Alternate 2.

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Fiber Reinforced Polymer Bridge Drains)

Description

This work shall consist of design, fabrication, and delivery of bridge drains using Fiber Reinforced Polymer (FRP) composite materials in accordance with the plans and this specification.

Applicable Standards and References

The design and construction of FRP composite bridge drain components shall be in accordance with this Methods Specification and the relevant requirements of the following standards and specifications, unless otherwise stipulated in this specification. Standards and specifications specifically cited in the body of the specification establish requirements that shall have precedence over all others. Should the requirements in any reference conflict with those in another, the reference highest on the list shall govern. It is the Design-Builder's responsibility to obtain clarification of any unresolved ambiguity prior to proceeding with the design or construction.

Specifications

Work shall be done in general accordance with the following specifications:

- a. AASHTO LRFD Guide Specifications for Design of Concrete-Filled FRP Tubes for Flexural and Axial Members, 2012.
- b. American Composites Manufacturing Association, ACMA Code of Standard Practice, First Edition, 2011.
- c. ISO/IEC Guide 58, Calibration and Testing Laboratory Accreditation Systems - General Requirements for Operation and Recognition.
- d. ISO/IEC 17025 General Requirements for the Competence of testing and Calibration Laboratories.
- e. NBS Voluntary Product Standard PS15-69. Custom Contact-Mold Reinforced Polyester Chemical-Resistant Process Equipment. The Society of the Plastics Industry, Inc., 355 Lexington Ave., N.Y., N.Y. 10017

Standards

- A.) ASTM D 2584. *Standard Test Method for Ignition Loss of Cured Reinforced Resins*. American Society for Testing and Materials, West Conshohocken, PA.
- B.) ASTM D 3039. *Standard Test Method for Tensile Properties of Polymer Matrix Composite Materials*. American Society for Testing and Materials, West Conshohocken, PA.
- C.) ASTM D 3171. *Standard Test Methods for Constituent Content of Composite Materials*. American Society for Testing and Materials, West Conshohocken, PA.

- D.) ASTM D 4385. *Standard Practice for Classifying Visual Defects in Thermosetting Reinforced Plastic Pultruded Products*. American Society for Testing and Materials, West Conshohocken, PA.
- E.) ASTM D 570. *Test Method for Water Absorption of Plastics*. American Society for Testing and Materials, West Conshohocken, PA.
- F.) ASTM E 1356. *Standard Test Method for Assignment of the Glass Transition Temperatures by Differential Scanning Calorimetry*. American Society for Testing and Materials, West Conshohocken, PA.
- G.) ASTM E 1640. *Standard Test Method for Assignment of the Glass Transition Temperature by Dynamic Mechanical Analysis*. American Society for Testing and Materials, West Conshohocken, PA.
- H.) ASTM C 582. *Standard Specification for Contact-Mold Reinforced Thermosetting Plastic (RTP) Laminates for Corrosion-Resistant Equipment*. American Society for Testing and Materials, West Conshohocken, PA.

Materials

Materials shall conform to the following requirements:

1. FRP composite drain and pipe material shall meet the requirements of Appendix A.
2. All material and workmanship will meet or exceed the requirements of ASTM.

Construction Requirements

FRP Drain Manufacturers

The FRP bridge drains shall be supplied by one of the following companies:

1. Kenway Corporation
2. FRP Bridge Drain Pipe-Westfall Company
3. ACO USA

The above suppliers have been pre-certified by providing materials samples that have been tested in accordance with Appendix B. Other suppliers/manufacturers may become certified if FRP bridge drain samples are tested in accordance with the requirements in Appendix B along with the meeting the following requirements.

All manufactures or fabricators of FRP bridge drain systems/components are required to have a minimum of 3 years of experience in providing FRP composite structural grade products to the general market. Manufacturers need to provide documentation that personnel involved in manufacture/fabrication hold and maintain American Composites Manufactures Association (ACMA) certifications in a minimum of two of the following disciplines; 1) Open Molding, 2) Corrosion, 3) Vacuum Infusion, 4) Closed Molding and that the Manufacturer/Fabricator have an ISO 9001:(current year) or other independent certification to ensure that the Manufacturer's process has been independently audited for conformance.

Design Guide for FRP Composite Scupper Bodies/Drain Inlets

General

The bridge shall use an offset inlet, Type D FRP composite scupper (24 inch long x 12 inch wide x 8 inch diameter downspout). See Appendix B for additional details. The bottom of the downspout shall extend 12 inches below the bottom of the steel plate girders and shall be offset as detailed in the Contract Plans.

Deck/interface drain holes.

Drain holes are required on both sides of the scupper to capture moisture at the interface between the top of the deck and bottom of the asphalt pavement. Three holes one half inch in diameter spaced at 6 inches on center and three and one quarter inches on center below the top of the grate, or pavement thickness, shall be placed on both sides of the scupper. If the holes are created after the molding process by punching, drilling or other mechanical means the holes shall be sealed using a compatible epoxy compound.

Grates

Grates shall be bicycle friendly and designed for HL-93 Live Load unless otherwise specified. Any gaps in grates shall have a maximum clear width of two inches. The minimum clear opening size in any grating shall be 1 1/8" by 1 1/8". Grates shall be galvanized steel (ASTM A123) or FRP specifically designed and meeting the HL-93 Live Load requirements.

- Steel grating shall be commercial heavy - duty grating with 1 1/2" x 5/16" bearing bars spaced at 2 3/8" and 3/8" diameter cross bars spaced at 2". The grating shall be centered in the drain top. The bearing bars shall run parallel to traffic.
- FRP grating if used shall provide an opening area at least 75% of steel grating noted above. FRP gratings that do not meet this requirement are not acceptable and shall not be used.

Grates shall be designed so that they can be removed by mechanical means. Fasteners for grates shall be stainless steel. Where selected grates require orientation to flow, the grates will have orienting features included as required, i.e. for orders of paired drains one drain would have left hand orientation and the other right hand orientation.

Grate Frames

Grate frames may be either integrated FRP composite or of galvanized steel construction attached to the scupper/inlet body in a matter consistent with the physical design parameters.

Anchoring provisions

Scupper/inlet anchoring shall be bonded to the grate framing in a manner that provides a load path into the concrete decking. Anchor details to be specified as part of the shop drawings for the bridge drains.

Cross and Longitudinal Slope Compensation

The scupper/inlet designs shall provide a means to match the grate to the deck angles while maintaining the downspout in a plumb orientation. If purchased in pairs one left handed version will be required for each right handed version. This may be achieved when a down spout portion is bonded to the scupper body, through the frame attachment to the scupper body.

FRP Composite Drain Sections

Bridge deck downspouts, bridge drain deck extensions, elbows and pipe for under drains shall be constructed using a circular cross section; however other cross sections are allowed with approval of the Fabrication Engineer. Drain sections shall comply with the material requirements set forth in Appendix A and maintain wall thickness of no less than 1/4 inch.

FRP Composite Deck Drain Extensions.

Down spout drain extensions be integrated and bonded directly to the scupper bodies.

Transitions through Connections and Components.

All transitions and joints to be manufactured through the use of smooth radius molds. Miter joint and edged transitions are not allowed. All internal joint connections are to be smooth and continuous.

Pigmented FRP Composite Drain Components

Pipes, fittings, bodies and all FRP composite drain system components shall be pigmented through the wall. The color used shall be determined by the Resident. Paint, gel-coat or any other exterior coating shall not be accepted.

Joint Connections

Joints may be welded using manufacturer recommended adhesives in accordance to the adhesive manufacturer's application procedures. Adhesives must be compatible with the FRP resins, applied in a way that ensures complete bonding and liquid tight sealing of the resins, and be compatible with the environmental conditions such as temperature, freeze thaw conditions, and wet alkaline environments.

Shop Drawings/Inspection

Drawings The Contractor shall prepare shop detail, erection and other necessary working drawings in accordance with Section 105.7 - Working Drawings. Drawings shall include dimensions and tolerances necessary for manufacture and installation, all hardware, orienting features, anchor details, fastener details, gasket details, cross and longitudinal matching features, joint details, transition details, material lay-up/composition

Quality Control/Quality Assurance: Within 30 calendar days the Contractor shall submit to the Department a Quality Control Quality Assurance (QCQA) Plan for fabrication of the bridge drains. Fabrication of bridge drains shall not commence until the QCQA Plan has been reviewed and approved by the Department.

Notice of Beginning Work The Contractor shall give the Fabrication Engineer a minimum of two weeks notice before the beginning of work. No work shall be performed before the Fabrication Engineer has been notified. Before beginning work, a pre-fabrication meeting may be held at the discretion of the Fabrication Engineer or, if requested, by the Contractor.

The Contractor shall advise the Fabrication Engineer of the production schedule and any changes to it. If the Contractor suspends work on a project, the Fabrication Engineer will require 48 hours notice prior to the resumption of work.

Inspection Quality Control (Q.C.) is the responsibility of the Contractor. The Quality Control Inspector (Q.C.I.) shall inspect all aspects of the work and shall supervise all nondestructive examination (NDE). The Q.C.I. shall record measurements and test results in a clear and legible manner. The Q.C.I. shall reject materials and workmanship that do not meet contract requirements. The Contractor may perform NDE in addition to the minimum required. The results of all measurements and testing shall be made available to the Quality Assurance Inspector (Q.A.I.). Quality Assurance (Q.A.) is the prerogative of the Fabrication Engineer. The Q.A.I. will ensure that the Q.C. Department is performing properly, verify documentation, periodically inspect workmanship and witness NDE. Q.A. testing deemed necessary by the Fabrication Engineer in addition to the minimum testing requirements shall be scheduled to minimize interference with the production schedule.

Inspector's Authority The Q.A.I. will have the authority to reject material or workmanship that does not meet the contract requirements. The acceptance of material or workmanship by the Q.A.I. will not prevent subsequent rejection, if found unacceptable.

Rejections Rejected material and workmanship shall be corrected or replaced by the Contractor.

Bill of Materials The Contractor shall provide the Fabrication Engineer with copies of all bills of materials used in the fabrication of the FRP bridge drains.

Packaging, Storage and Shipping of Components

FRP drains shall be stored and handled in accordance with the manufacturer's recommendation. The drains shall be stored above the ground not be allowed to come into contact with seawater, mud, grease, dirt or other deleterious materials that may be present on the job site.

Installation

The Contractor shall install the FRP drains in accordance to the manufacturer's installation procedures and in accordance to the Contractor's installation drawings. FRP bridge drains will be accurately placed at the locations shown on the Plans or as authorized by the Resident. Adequate means shall be provided for securely holding the drains in place during placement of concrete. Any damaged drain shall be repaired or replaced at the Resident's discretion and at no additional cost to the Department.

Method of Measurement

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October 25, 2018

FRP Bridge Drains will be measured by the number of units, for fabrication and delivery. Installation for the drains will be incidental to the Structural Concrete Superstructure Item.

Basis of Payment

FRP Bridge Drains will be paid for at the contract unit price. Such payment will include compensation for the fabrication and delivery of the drains in accordance with this specification.

Payment will be under:

<u>Pay Item</u>		<u>Pay Unit</u>
502.77	FRP Bridge Drain –Type D	Each

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Fiber Reinforced Polymer Bridge Drains)

APPENDIX A

A.1 Scope

This section specifies the material composition, properties, test requirements and reports that shall be submitted and approved prior to and after product certification of each FRP composite drain component type, e.g. scupper body or pipe component. The manufacturer is responsible for testing using an approved independent lab per section A.5.3. Once certified the approved product may be manufactured with only internal testing provided the manufacturing process and laminate composition do not change. Changes to process and or composition do require additional testing and product certification. The manufacturer shall report the individual test results per section A.5.3. If the strength is less than the required properties certification will not be granted.

A.2 Material/Laminate Composition

A.2.1 Fibers

Fiber sizings and coupling agents shall be compatible with the resin system used to impregnate them.

A.2.2 Matrix Resins

Commercial grades of vinyl ester and epoxy resin systems are permitted provided the finished product meets the material property requirements before and after durability conditioning as set forth in Section A. Styrene is permitted to be added to the polymer resin during processing. Added styrene shall be less than 10 percent by mass of the polymer resin. The amount of styrene, as a mass percentage of the polymer resin, added during processing shall be reported per Section A.5.3.

A.2.3 Fillers and Additives

Commercial grade inorganic fillers such as kaolin clay, calcium carbonate, and alumina tri-hydrate shall not exceed 20 percent by mass of the polymer resin constituent. Commercial grade additives and process-aids, such as release agents, low profile shrink additives, initiators, promoters, hardeners, catalysts, pigments, fire-retardants, and ultra-violet inhibitors are permitted and depend on the processing method. Shrink additives, if used, shall be less than 20 percent by mass of the polymer resin. Commercial grade inorganic or organic non-woven surfacing mats or veils are permitted.

A.2.4 Fiber Content

Fiber content shall be measured by ASTM D 3171 or ASTM D 2584. Fiber content shall be high enough to meet the mechanical property requirements of the FRP system laminate. The manufacturer shall report the fiber content of the end product by volume or by mass in accordance to the method used. If fiber content is not provided by the manufacturer, then the manufacturer shall provide material data sheets with the weight per unit area of the fiber reinforcement used to manufacture the part.

A.2.5 Glass Transition Temperature

The characteristic value of the glass transition temperature of the composite system, determined in accordance with ASTM E1640, shall be at least 40 degrees Fahrenheit higher than the maximum design temperature, $T_{MaxDesign}$, defined in section 3.12.2.2 of the AASHTO LRFD Guide Specifications for Design of Concrete-Filled FRP Tubes for Flexural and Axial Members, 2012. FRP drain systems may not be used in environments with a service temperature higher than the glass transition temperature of the resin used for their manufacturing.

A.2.6 Longitudinal and Transverse Coefficients of Thermal Expansion (CTE)

The coefficient of Thermal Expansion (CTE) of the tube may vary in the longitudinal and circumferential directions of the component depending on the laminate architecture and type of fibers and resins.

A.3 Mechanical Properties

A.3.1 Tensile Properties

The tensile strength, tensile modulus of elasticity, and ultimate tensile strain shall be determined for both the axial and hoop directions of the tubular components or in transverse and longitudinal directions of inlet bodies, see Section A.5.1 Test Samples. The tensile strength as reported by the manufacturer for product certification shall be measured according to ASTM Test Method D 3039, or other tension test method designed to determine tensile properties of composite laminates at the approved frequency and number of specimens as specified in section A.5.

A.3.4 Compressive Properties

The compressive strength and ultimate compressive strain shall be determined for the longitudinal directions of the tube laminate. The compressive strength and ultimate compressive strains shall be derived from specimens tested in accordance with ASTM Test Method D 6641, or other approved compression test method designed to determine compressive properties of the composite.

A.4 Durability Properties

Material properties shall retain 85% of their baseline values for the material properties listed in Section 2.3 after conditioning for all the durability tests listed below. Durability test methods are adopted from AASHTO Guide Specifications for Design of Bonded FRP Systems for Repair and Strengthening of Concrete Bridge Elements.

Durability property testing is only required for initial product certification and not required for subsequent production orders. The testing is the responsibility of the manufacturer and shall be conducted by an approved independent testing lab per section A.5.2.

A.4.1 Moisture Absorption

Samples will be immersed in distilled water having a temperature of 100 +/-3 degrees Fahrenheit and tested after 1,000 hours of exposure.

A.4.2 Resistance to Alkaline Environment

Samples will be immersed in a saturated solution of calcium hydroxide (pH-11) at ambient temperature of 73 +/-3 degrees Fahrenheit for 1,000 hours prior to testing. The pH level will be monitored and the solution will be maintained as needed.

A.4.3 Alternating Ultraviolet Light and Condensation Humidity

Samples will be conditioned in an apparatus under Cycle I-UV exposure condition according to ASTM G154 Standard Practice. Samples will be tested within two hours after removal from the apparatus.

A.4.4 Freeze-Thaw

Samples will be exposed to 100 repeated cycles of freezing and thawing in an apparatus meeting the requirements of ASTM C666.

A.5 Sampling, Testing & Results.

A.5.1 Test Samples.

The manufacturer is responsible for testing and may use samples in accordance to the test methods and needs of test equipment available. Test coupons may be cut from manufactured products or prepared using identical processes e.g. wet lay-up, vacuum infusion, etc. in a flat sheet, or witness plate, in which test coupons may be cut. Approval of the Fabrication Engineer shall be required for acceptance of test specimens produced by a different manufacturing method. Samples derived from special coupon test sheets shall be taken interior to edge sections 1.5x the width of the required coupon width. Samples shall be prepared from samples oriented with the directions illustrated in figures 1 and 2 for scupper body and drain pipes. For samples from filament wound pipes, samples shall be constructed over polygon mandrels allowing for flat panels to be removed for test purposes. Each test shall use a quantity of three samples. See Tables A.5.4 for tests, material requirements and sample breakdown.

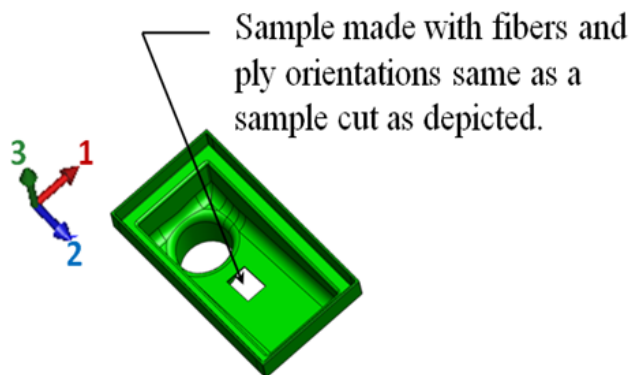


Figure 1.) Scupper Body
Sample Orientations.

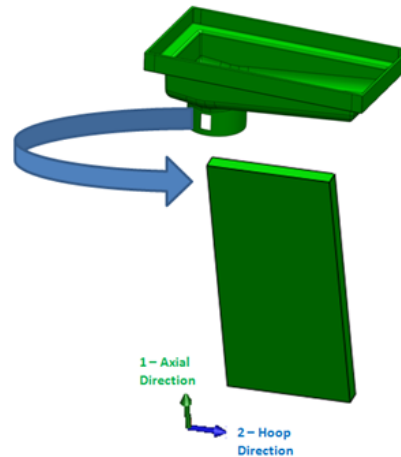


Figure 2.) Drain Pipe
Sample Orientations.

A.5.2 Test Lab Requirements.

All testing of FRP material properties is being conducting in accordance to specified standards. Internal or external testing is to be conducted through laboratory facilities in accordance to ISO/IEC Guide 58, *Calibration and Testing Laboratory Accreditation Systems - General Requirements for Operation and Recognition* and ISO/IEC 17025 *General Requirements for the Competence of testing and Calibration Laboratories* as related by AASHTO document R18 "Recommended Practice for Establishing and Implementing a Quality System for Construction Materials Testing Laboratories."

A.5.3 Production Validation (PV) Testing.

Certification of materials used in FRP drain products must undergo PV testing of the specified material properties before and after environmental conditioning as set forth in Section A.5.4 by an independent lab. PV tests may be conducted internally by the manufacturer for development but are not acceptable for certification. Reported values for the material composition is be recorded and reported by the manufacturer, no independent audit is required.

A.5.4 Production Validation Sample Quantities, Minimum Material Properties and Reported Values

The following data shall be reported for material certification. Note that the tables shown use orientations related to FRP scupper or inlet bodies as set forth in Figure 1 of Section A.5.1, orientation direction 2 as shown in Figure 2 of Section A.5.1 shall be substituted for orientation direction 3 when evaluating tubular sections. The required number of samples have been reduced from ASTM requirements.

Table A.5.4.a PV reported material composition data. (Recorded by the manufacturer during the manufacturing process)

Section No.	Characteristic	Applicable Test Standard	Number of Samples	Tolerance	Reported
A.2.2	Styrene, mass percentage of polymer resin	per tolerance	N/A	10% max	
A.2.3	Inorganic fillers, mass percentage of polymer resin.	per tolerance	N/A	20% max	
	Shrink additives, mass percentage of polymer resin.	per tolerance	N/A	20% max	
A.2.4	Fiber Content	ASTM D3171 or ASTM D2584	3	Sufficient to meet mechanical properties	
A.2.5	Glass Transition Temperature	ASTM E1640	3	> Max Design Temperature	

Table A.5.4.b PV Reported Baseline Mechanical Properties

(Conducted by an independent laboratory. Samples as Manufactured w/o additional conditioning per Section A.3)

Section No.	Direction	Characteristic	Applicable Test Standard	No. of Samples	Minimum Allowable Values	Independent Lab Reported Values			
						Sample 1	Sample 2	Sample 3	Avg Value
A.3.1	1	Tensile Strength	ASTM D3039	3	10000 (psi)				
		Tensile Modulus of Elasticity			800000 (psi)				
		Ultimate Tensile Strain			0.003 in/ in				
	2	Tensile Strength		3	10000 (psi)				
		Tensile Modulus of Elasticity			800000 (psi)				
		Ultimate Tensile Strain			0.003 in/ in				
A.3.4	1	Compressive Strength	ASTM D6641	3	22000 (psi)				
		Ultimate Compressive Strain			0.003 in/ in				
		Compressive Strength		3	22000 (psi)				
	3	Compressive Strength			22000 (psi)				
		Ultimate Compressive Strain			0.003 in/ in				
		Ultimate Compressive Strain			0.003 in/ in				

Table A.5.4c PV Reported Mechanical Properties after 1000 hr. Moisture Immersion Conditioning per Section A.4.1

(Conducted by an independent laboratory)

Section No.	Direction	Characteristic	Applicable Test Standard	No. of Samples	Minimum Allowable Values	Independent Lab Reported Values			
						Sample 1	Sample 2	Sample 3	Avg Value
A.3.1	1	Tensile Strength	ASTM D3039	3	8500 (psi)				
		Tensile Modulus of Elasticity			680000 (psi)				
		Ultimate Tensile Strain			0.0025 in/in				
	2	Tensile Strength		3	8500 (psi)				
		Tensile Modulus of Elasticity			680000 (psi)				
		Ultimate Tensile Strain			0.0025 in/in				
A.3.4	1	Compressive Strength	ASTM D6641	3	18700 (psi)				
		Ultimate Compressive Strain			0.0025 in/in				
		Compressive Strength		3	18700 (psi)				
	3	Compressive Strength			18700 (psi)				
		Ultimate Compressive Strain			0.0025 in/in				
		Ultimate Compressive Strain			0.0025 in/in				

Table A.5.4d PV Reported Mechanical Properties after 1000 hr. of Alkaline Environment Conditioning per Section A.4.2

(Conducted by an independent laboratory)

Section No.	Direction	Characteristic	Applicable Test Standard	No. of Samples	Minimum Allowable Values	Independent Lab Reported Values			
						Sample 1	Sample 2	Sample 3	Avg Value
A.3.1	1	Tensile Strength	ASTM D3039	3	8500 (psi)				
		Tensile Modulus of Elasticity			680000 (psi)				
		Ultimate Tensile Strain			0.0025 in/in				
	2	Tensile Strength		3	8500 (psi)				
		Tensile Modulus of Elasticity			680000 (psi)				
		Ultimate Tensile Strain			0.0025 in/in				
A.3.4	1	Compressive Strength	ASTM D6641	3	18700 (psi)				
		Ultimate Compressive Strain			0.0025 in/in				
		Compressive Strength		3	18700 (psi)				
	3	Compressive Strength			18700 (psi)				
		Ultimate Compressive Strain			0.0025 in/in				
		Ultimate Compressive Strain			0.0025 in/in				

Table A.5.4e PV Reported Mechanical Properties after UV Light Conditioning per Section A.4.3 (ASTM G154).
(Conducted by an independent laboratory)

Section No.	Direction	Characteristic	Applicable Test Standard	No. of Samples	Minimum Allowable Values	Independent Lab Reported Values			
						Sample 1	Sample 2	Sample 3	Avg Value
A.3.1	1	Tensile Strength	ASTM D3039	3	8500 (psi)				
		Tensile Modulus of Elasticity			680000 (psi)				
		Ultimate Tensile Strain			0.0025 in/in				
	2	Tensile Strength		3	8500 (psi)				
		Tensile Modulus of Elasticity			680000 (psi)				
		Ultimate Tensile Strain			0.0025 in/in				
A.3.4	1	Compressive Strength	ASTM D6641	3	18700 (psi)				
		Ultimate Compressive Strain			0.0025 in/in				
	3	Compressive Strength		3	18700 (psi)				
		Ultimate Compressive Strain			0.0025 in/in				

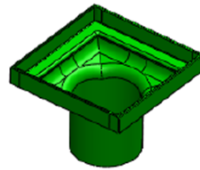
Table A.5.4f PV Reported Mechanical Properties after 100 Freeze-Thaw Cycle Conditioning per Section A.4.4 (ASTM C666).
(Conducted by an independent laboratory)

Section No.	Direction	Characteristic	Applicable Test Standard	No. of Samples	Minimum Allowable Values	Independent Lab Reported Values			
						Sample 1	Sample 2	Sample 3	Avg Value
A.3.1	1	Tensile Strength	ASTM D3039	3	8500 (psi)				
		Tensile Modulus of Elasticity			680000 (psi)				
		Ultimate Tensile Strain			0.0025 in/in				
	2	Tensile Strength		3	8500 (psi)				
		Tensile Modulus of Elasticity			680000 (psi)				
		Ultimate Tensile Strain			0.0025 in/in				
A.3.4	1	Compressive Strength	ASTM D6641	3	18700 (psi)				
		Ultimate Compressive Strain			0.0025 in/in				
	3	Compressive Strength		3	18700 (psi)				
		Ultimate Compressive Strain			0.0025 in/in				

Table B2 Preferred Offset FRP Composite Scupper Bodies

Size Designation		D	E	F	G		
Size Dimensions (Grate Length x Width, Down Spout Diameter)		24x12xØ8	30x12xØ10	36x12xØ10	42x12xØ12		
Number	Dimension Name	Nominal Dimensions				Nominal Design Tolerance	Manufacturing Tolerance
1	Down Spout Inner Diameter	8"	10"	10"	12"	min	+/- 0.015"
2	Grate Frame Width	12"	12"	12"	12"	+ 2"/-0"	+/- 0.025"
3	Grate Frame Height	As required to contain grate and recessed from deck surface					
4	Grate Frame Flange & Wall Thickness	0.25"	0.25"	0.25"	0.25"	min	+/- 0.025"
5	Scupper Toe Depth	4"	4"	4"	4"	+1"/-0"	+/- 0.1"
6	Scupper Toe Slope	1:10	1:10	1:10	1:10	min	+ 1 degree
7	Scupper Body Radii	2"	2"	2"	2"	min	+0.1"
8	Down Spout Position to Heel	6"	6"	6"	6"	+/- 0.5"	
9	Height	13.5"	16"	18"	18"	Open	+/- 0.25"
10	Scupper Heel Slope	1:10	1:10	1:10	1:10	min	+0.1"
11	Grate Frame Length	24"	30"	36"	42"	+ 2"/-0"	+/- 0.025"
12	Scupper and Down Spout Wall Thickness	0.25"	0.25"	0.25"	0.25"	min	+0.015"

SPECIAL PROVISION
SECTION 502
STRUCTURAL CONCRETE
(Fiber Reinforced Polymer Bridge Drains)
Standard Details
APPENDIX B



Bridge Drain – Symmetric Inlet

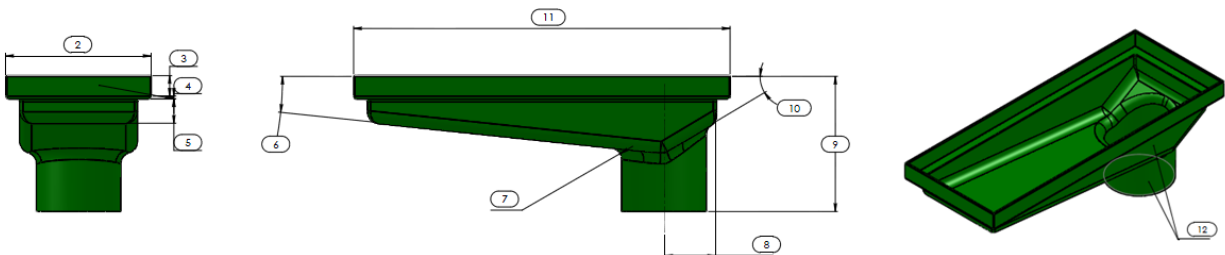
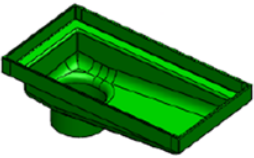


Table B1 Preferred Symmetric FRP Composite Inlet Bodies

Size Designation		A	B	C		
Size Dimensions (Grate Length x Width, Down Spout Diameter)		12x12xØ8	14x14xØ10	18x18xØ12		
Number	Dimension Name	Nominal Dimensions			Nominal Design Tolerance	Manufacturing Tolerance
1	Down Spout Inner Diameter	8"	10"	12"	min	+/- 0.015"
2	Grate Frame Width	12"	14"	18"	+/- 1"	+/- 0.025"
3	Grate Frame Height	As required to contain grate and recessed from deck surface				
4	Grate Frame Flange & Wall Thickness	0.25"	0.25"	0.25"	min	+/- 0.025"
5	Scupper Toe Depth	4"	4"	4"	+1"/-0"	+/- 0.1"
6	Scupper Toe Slope	1:10	1:10	1:10	min	+ 1 degree
7	Scupper Body Radii	2"	2"	2"	min	+0.1"
8	Down Spout Position to Heel	6"	6"	6"	+/- 0.5"	
9	Height	18"	18"	18"	Open	+/- 0.25"
10	Scupper Heel Slope	1:10	1:10	1:10	min	+0.1"
11	Grate Frame Length	12"	14"	18"	+/- 1"	+/- 0.025"
12	Scupper and Down Spout Wall Thickness	0.25"	0.25"	0.25"	min	+0.015"



Bridge Drain-Offset Scupper

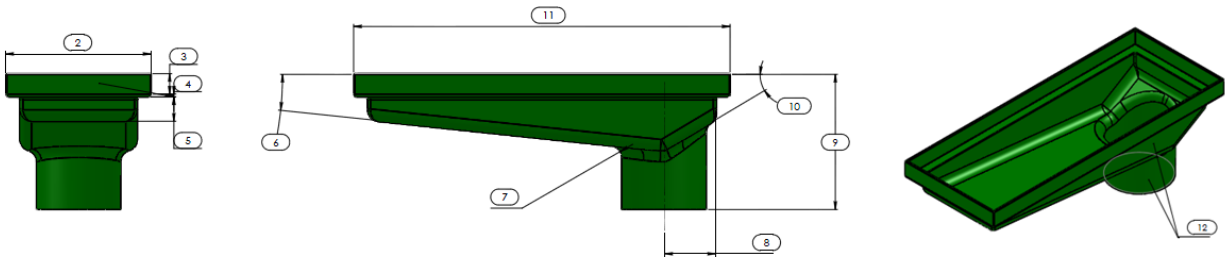


Table B2 Preferred Offset FRP Composite Scupper Bodies

Size Designation		D	E	F	G		
Size Dimensions (Grate Length x Width, Down Spout Diameter)		24x12xø8	30x12xø10	36x12xø10	42x12xø12		
Number	Dimension Name	Nominal Dimensions				Nominal Design Tolerance	Manufacturing Tolerance
1	Down Spout Inner Diameter	8"	10"	10"	12"	min	+/- 0.015"
2	Grate Frame Width	12"	12"	12"	12"	+ 2"/-0"	+/- 0.025"
3	Grate Frame Height	As required to contain grate and recessed from deck surface					
4	Grate Frame Flange & Wall Thickness	0.25"	0.25"	0.25"	0.25"	min	+/- 0.025"
5	Scupper Toe Depth	4"	4"	4"	4"	+1"/-0"	+/- 0.1"
6	Scupper Toe Slope	1:10	1:10	1:10	1:10	min	+ 1 degree
7	Scupper Body Radii	2"	2"	2"	2"	min	+0.1"
8	Down Spout Position to Heel	6"	6"	6"	6"	+/- 0.5"	
9	Height	13.5"	16"	18"	18"	Open	+/- 0.25"
10	Scupper Heel Slope	1:10	1:10	1:10	1:10	min	+0.1"
11	Grate Frame Length	24"	30"	36"	42"	+ 2"/-0"	+/- 0.025"
12	Scupper and Down Spout Wall Thickness	0.25"	0.25"	0.25"	0.25"	min	+0.015"

SPECIAL PROVISION
SECTION 504
STRUCTURAL STEEL
(Metal Stairs)

The following section has been amended by the addition of the following:

504.01 Description

This work shall consist of furnishing and installing industrial-type metal stairs, railings and associated foundations in accordance with these Specifications and in conformity with the locations and dimensions shown on the Plans. The stairs shall consist of steel stringers and framing; aluminum grating stair treads and landings; steel tube handrails attached to the steel posts and rails on the metal stairs; and (2)-24-inch diameter foundations and a concrete landing pad. The metal stairs are located at the northern side of the A1 Diner and attach to the Bridge Street southeast retaining wall.

504.02 Materials

The following information is added:

- Steel Pipe: ASTM A53, Standard Weight.
- Sheet Steel: ASTM A1008.
- Structural Steel: ASTM A36.
- Steel Decking: Form from zinc coated steel conforming to ASTM A446, with properties conforming to AISI Specification for the Design of Cold-Formed Steel Structural Members.
- Steel Plate: ASTM A1011.
- Aluminum Grating: F356F.
- Concrete for foundations and landing pad shall conform to Section 502 and shall be Class A.
- Reinforcing Steel: Plain ASTM A 615/615M, Grade 60.

504.03 Drawings

The following paragraphs are added:

The Contractor's stair manufacturer shall submit shop drawings of the metal stair elements which shall illustrate individual element dimensions, layout, fabrication details, connections, materials, and installation procedures as necessary for the Contractor to construct the stairs in accordance with the construction denoted in the contract Plans. The shop drawings will be reviewed by the engineer of record and approval will be established in accordance with Section 105.7 of the Standard Specifications. Approval of the shop drawings shall be completed prior to fabricating any stair segments.

All Submittals under this Item shall be signed and stamped by a Professional Engineer registered in Maine.

504.031 Design

The following Subsection is added:

- Design stairs to support a live load of 100 pounds per square foot.
- Concentrated Load: 300 lbf applied on an area of 4 sq. in.
- Uniform and concentrated loads need not be assumed to act concurrently.
- Structural design, fabrication, and assembly in accordance with requirements of NAAMM Metal Stairs Manual, except as otherwise specified or shown.

504.571 Fabrication of Stairs and Railings

The following Subsection is added:

Fasteners:

- Conceal bolts and screws wherever possible.
- Use countersunk heads on exposed bolts and screws with ends of bolts and screws dressed flush after nuts are set.

Welding:

- Structural steel, AWS D1.1 and sheet steel, AWS D1.3.
- Where possible, locate welds on unexposed side.
- Grind exposed welds smooth and true to contour of welded member.
- Remove welding splatter.
- Remove sharp edges and burrs.

Painting: Prepare all steel surfaces, except treads and grating, and apply a color galvanized coating in accordance with Section 506. The color shall match Duncan "Rain Forest Green" (SW 4071, LRV 8%) with a semi-gloss finish.

Railings: Fabricate railings, including handrails, from steel pipe with flush connections.

- Connections may be standard fittings designed for welded, coped or mitered pipe with full welds.
- Return ends of handrail to match face of Wyoming bridge rail and close free end.
- Space posts not over five feet on center.
- Provide standard terminal fittings at ends of post and rails

Stairs:

- Provide treads, landings, railings, stringers, and all other supporting members.

Treads and platforms:

- Support tread and platforms with angles welded to the stringer.
- Do not leave exposed fasteners on top of treads or platform surfaces.
- Provide toe plates on the back side of treads, as shown on plans

Stair Installation:

- Provide hangers and struts required to support the loads imposed.
- Perform job site welding and bolting as specified for shop fabrication.
- Set stairs and other members in position and secure to retaining wall as shown.
- Install stairs plumb, level and true to line.
- Provide steel closure plate to fill any gap between the stringer and surrounding wall.

Railing Installation:

- Install standard terminal fittings at ends of posts and rails.
- Secure brackets and rails to steel by welds.
- Secure posts to stringer with connections bolts shown on plans.
- Set rails horizontal or parallel to rake of stairs to within 1/8-inch in 12 feet.
- Set posts plumb and aligned to within 3 mm in 1/8-inch in 12 feet.

Field Painting (touch-up):

- When installation is complete, clean field welds, connections, and surrounding areas to bright metal, and coat with the same color galvanized coating in accordance with Section 506.
- Touch-up abraded areas with the same color galvanized coating in accordance with Section 506.

Concrete Foundations and Landing Pad:

- Concrete shall conform to Section 502 of the Standard Specifications.
- Reinforcing steel for the foundations shall conform to Section 503 of the Standard Specifications.

504.65 Method of Measurement

The following paragraph is added:

The Metal Stairs and foundations will be measured for payment as one lump sum unit, complete, and accepted.

504.66 Basis of Payment

The following paragraphs are added:

The accepted quantity of Metal Stairs will be paid for at the contract lump sum price, which shall include all labor and materials required for the fabrication, delivery, and installation of the stair segments, excavation for and installation of concrete foundations and leveling pad including gravel borrow. Shop drawing submittals shall be incidental to the Metal Stairs pay item.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
504.96	Metal Stairs	Lump Sum

SPECIAL PROVISION
SECTION 507
RAILINGS

Subsection 507.09 Basis of Payment is amended by the addition of the following:

<u>Pay Item</u>		<u>Pay Unit</u>
507.0834	Wyoming Steel Bridge Railing, Modified	Lump Sum

SPECIAL PROVISION
SECTION 520
EXPANSION DEVICES – NON-MODULAR
(Asphaltic Plug Joint)

520.01 Description

This work consists of furnishing and installing asphaltic plug joint systems at the locations shown on the Plans, in accordance with these Specifications, and as directed by the Resident. This work shall include furnishing, installation, and removal of all bond breaking materials used to prevent asphalt pavement layers from adhering to waterproofing membrane, all temporary header(s) installed with the intent to form the asphaltic plug joint channel, and all preparation required for the installation of the asphaltic plug joint.

This work shall also include having the approved manufacturer provide a qualified technical representative to supervise the installation of the joint systems. The representative shall instruct, train, and supervise the Contractor's personnel in the proper methods of installation. All costs associated with this service shall be included in the unit price of the work.

520.02 Submittals

Prior to construction, the Contractor shall submit the following to the Resident for review and approval:

(a) Complete and detailed Shop Drawings of the asphaltic plug joint system. Shop Drawings shall include information covering materials, their properties, installation procedures, storage and handling requirements, and Safety Data Sheets.

(b) The resume of the manufacturer's technical representative, which shall include the representative's experience installing the asphaltic plug joint system along with the names and telephone numbers of contact persons for recent projects where technical assistance was provided.

(c) Certified test reports of the asphaltic binder, closed cell foam backer rod, and the plastic compound.

(d) Certificates of Compliance for bridging plates, centering nails, and aggregate.

520.03 Materials

An asphaltic plug joint system from MaineDOT's Qualified Products List for Expansion Devices – Non-Modular (Asphaltic Plug Joints) shall be used.

The bridging plate shall be ASTM A36 steel, a minimum of 1/4 inch thick, and galvanized. Holes for the centering nails shall be approximately 1 foot center to center along the centerline of plates.

Centering nails shall be 16d or larger and hot dip galvanized in accordance with ASTM A153.

520.04 Installation

The asphaltic plug joint system shall be installed in accordance with the manufacturer's latest instructions and this specification. Manufacturer's representatives shall be present during the entire installation to ensure satisfactory results are obtained.

The asphaltic plug joint system shall allow total joint movement for up to 2 inches. The installation shall be centered over the expansion joint gap as indicated on the Plans. It shall not be installed when ambient or substrate temperatures are below 40°F, when rain is imminent, or as directed by the Resident. The area shall be free of dirt, dust, moisture, petroleum, or solvents that might contaminate the joint materials or reduce the bond of the joint system to the substrate or vertical faces. The use of compressed air and heat may be required to dry the area before installing the joint system.

The asphalt pavement layers shall be removed to the required dimensions shown on the plans. The asphalt pavement shall be sawcut to a depth that will not damage the waterproofing membrane, but permit the removal of the asphalt pavement layer. The pavement layer shall be removed in a manner that will not damage the waterproofing membrane. Bond breakers such as interlayers and fabrics, or temporary header(s), may be used with new hot mix asphalt placements to avoid unnecessary sawcuts and protect the waterproofing membrane from damage. The method of attaching temporary header(s) to the concrete deck shall be approved by the Resident. The use of a temporary header shall not be allowed if it will need to be anchored into a precast prestressed concrete member. Should a concrete levelling course be required before installing the bridging plates, and the membrane layer is removed in the process, it shall be replaced before the asphaltic plug joint system is installed. Vertical surfaces of the asphalt pavement layers shall be cleaned to remove all water, dust, or other contaminants.

Backer rods shall be installed in expansion joint openings at a minimum of 1 inch depth or as indicated on the Plans.

Unless otherwise specified by the asphaltic plug joint system manufacturer, liquid asphalt binder meeting the requirements of a 64-28 or 58-28 PGAB shall be used to coat the membrane and bridging plate surfaces.

The binder shall be heated to 350°F to 410°F, or a safe temperature as recommended by manufacturer. Heating kettles shall be equipped with continuous agitation system, temperature controller, calibrated thermometer, and double steel jacket with an oil layer in between, to prevent scorching of the binder. During application, the temperature of the binder shall be maintained at a minimum of 350°F, but not greater than 410°F. It shall be poured and leveled into the expansion joint openings until overfilled, and the excess binder spread over the area covered by the bridging plates.

Steel bridging plates shall be placed from curb to curb on the roadway portion of expansion joints. The plates shall be centered over the joint opening. Centering nails shall be placed in pre-drilled holes and hammered in to secure the plates.

Once the bridging plates are installed, liquid asphalt binder shall be poured and leveled over the bridging plates and adjacent membrane surfaces in a manner that ensures full coverage. Areas with excessive application, such as pooling of liquid, should be removed or dispersed along the joint area.

Asphaltic plug joint system aggregate shall be heated in a rotating drum mixer to a minimum of 350°F but not greater than 410°F, or as recommended by the manufacturer. The thermoplastic polymeric modified asphalt binder shall be added to the mixer to pre-coat the aggregates.

Coated aggregate shall be placed into blockouts in layers as recommended by the manufacturer. Blockouts shall be overfilled with coated aggregate as required to compensate for compaction. Equipment for compaction shall be as recommended by the manufacturer. Additional thermoplastic polymeric modified asphalt binder shall be screeded over the compacted joint to fill all surface voids.

Top dressing aggregate shall be applied per the manufacturer's recommendation.

Plastic compound shall be used for repairing overcuts in bituminous concrete. Cleaning, mixing, and application shall be in conformance to the manufacturer's instructions.

Vehicular traffic may pass over finished joints two-hours after compaction, or as recommended by the manufacturer.

520.05 Method of Measurement

The Asphaltic Plug Joint system will be measured by the linear foot along the top surface of installed joints to the limits shown on the Plans. Preparation of surfaces for the proposed joint system including cutting, grinding, and cleaning will not be measured separately for payment, but shall be incidental to the Asphaltic Plug Joint.

520.06 Basis of Payment

The Asphaltic Plug Joint system will be paid for at the Contract unit price per linear foot, which price shall be full compensation for all labor, materials, equipment, and incidentals required for furnishing and installing the Asphaltic Plug Joint system as shown on the Plans, in accordance with these Specifications, and as directed by the Resident. Payment shall also include all work required to repair the concrete deck where anchors were used with a temporary header, and all patching needed for the waterproofing membrane.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
520.232 Expansion Device - Asphaltic Plug Joint	Linear Foot

SPECIAL PROVISION
SECTION 524
TEMPORARY STRUCTURAL SUPPORTS
(Temporary Structural Support – A1 Diner)

Subsection 524.01 Description is amended by the addition of the following:

This work shall consist of providing a temporary structural support of the existing A1 Diner rail car to allow for the removal of two of its existing footings that interfere with the proposed retaining wall at the southeast approach of the Bridge Street Bridge (see photos below). This work shall consist of designing, fabricating, erecting, operating, maintaining, and dismantling the support system and the removal of two existing A1 Diner foundations shown on the Plans. This work shall be in accordance with the Plans, Standard Specifications, and as specified herein.



Figure 1 Below A1 Diner Looking South Towards Frosty's Foundation



Figure 2 A1 Diner looking South from Arcade

The support operations shall be performed outside of normal business hours while the diner is closed to the public. Once the diner is fully supported by underpinning and the load is fully transferred to the Temporary Structural Support system, the diner will be re-opened and fully operational. This work shall occur during the Pre-Bridge Closure Period as defined in these Specifications. The temporary structural supports shall also remain in place after the new diner foundations are constructed to secure the diner car during the Contractor's adjacent operations such as bridge demolition; micropile, retaining wall, and abutment construction; and backfill operations. The temporary structural support shall be removed by the end of the Bridge Closure Period. This work is subject to Special Provision Section 107- Supplemental Liquidated Damages.

Subsection 524.03 Design is amended by the addition of the following:

Temporary structural supports that are founded on or near existing structures to be rehabilitated or replaced shall be designed to resist any vibration induced by other work to be completed on the project.

All design, detail and load requirements shall conform to the most current edition of the AASHTO LRFD Bridge Design Specifications with applicable Interim Specifications, American Society of Civil Engineers (ASCE) / Structural Engineering Institute (SEI) 7 - Minimum Design Loads and Associated Criteria for Buildings and other Structures, the Plans, the Standard Specifications, and as specified herein. The design computations shall verify the proposed support and load transfer scheme does not introduce unacceptable stresses in the existing diner or its foundations. All design computations submitted for approval shall be reviewed, checked, and initialed accordingly. Development of anticipated support loads with adequate documentation shall be included as part of the Contractor's design submittal.

The Contractor shall provide a temporary support system with a capacity of at least 150% of the support loads stated in the Contractor's design submittal.

The vertical movement of the diner car shall be limited to 1/4 inch or less to avoid overstressing, or otherwise damaging, the structure and its connection to the kitchen building behind it. If movement in excess of this limit is observed, the operations shall cease and the Resident shall be notified. Support operations shall not resume until guidance is provided by the Resident.

Subsection 524.04 Erection and Removal is amended by the addition of the following:

The existing diner shall be shimmed with wedges from the Contractor designed underpinning. The shimming shall be synchronized so that all portions of the diner are supported by equal amounts simultaneously. A maximum of 1/4 inch differential movement between adjacent foundations, and a maximum of 1/2 inch of differential movement from one end of the diner to the other end of the diner will be permitted during shimming operations. The process of removing the temporary structural supports and supporting the structure into its permanent condition onto existing or proposed foundation elements shall be completed in a manner similar to that of the erection process.

The temporary structural supports shall securely maintain the diner car position at each footing, without measurable or noticeable changes under all dead load, live load, and construction loads, until the diner loads are transferred back to the final bearing condition.

The Contractor shall perform and submit to the Resident, a Pre-Support Survey of the existing A1 Diner and its appurtenances. It shall be the Contractor's responsibility to prevent any damage to the structure from the support system. Should any damage occur as a result of this work, the Contractor shall make repairs at no cost to the Department. Any such repair work is subject to the approval of the Resident.

Bracing shall be provided to maintain the diner car in a stable condition during the shimming operations and while temporarily supported, as well as during load transfer to the permanent foundations.

All structural steel fabrication shall be in accordance with the Standard Specifications.

Subsection 524.05 Method of Measurement is amended by the addition of the following:

Temporary Structural Support – A1 Diner will be measured by the lump sum and will include the design, fabrication, erection, operation, maintenance, and removal of all required temporary structural support systems to the extent specified herein. It shall also include the removal of two existing diner footings to avoid interference with the proposed southeast retaining wall as shown on the Plans. Temporary works used by the Contractor for their convenience will not be measured for payment. The work associated with removal and reinstallation of existing appurtenances 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.

Subsection 524.06 Basis of Payment is deleted and replaced with the following:

Temporary Structural Support will be paid for at the Contract unit price lump sum, which price shall be full compensation for all materials, equipment, labor, and incidentals necessary to complete the work as specified herein.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
524.301	Temporary Structural Support – A1 Diner	Lump Sum

SPECIAL PROVISION
SECTION 524
TEMPORARY STRUCTURAL SUPPORTS
(Temporary Supports and Horizontal Slide)

Section 524 in the Standard Specifications shall be amended by the addition of the following:

524.01 Description This work shall consist of the designing, fabricating, erecting, maintaining, and dismantling of all temporary structural supports. The work shall also consist of furnishing all horizontal slide equipment (mechanical devices, jacks, tracks and other components), performing the lateral bridge slide, monitoring of bridge movement, removal of lateral slide equipment, and performing of post-slide inspections and any necessary remedial actions. Work shall include preparation and submittal of calculations and working drawings (with working load capacities) for horizontal slide and jacking equipment and temporary structural supports.

Definitions:

Temporary Structural Supports shall refer to all components of the temporary falsework erected downstream of the current bridge location supporting the construction activities to erect the complete superstructure including but not exclusive of the temporary bents, lateral bracing, foundations, work platforms and all personnel safety systems.

Temporary Access shall refer to all work required to construct temporary staging areas between approximate stations 72+00 to 74+00 right for accessing the temporary structural support and horizontal slide work areas and restoring disturbed areas to their original condition as directed by the Resident. This work shall include any temporary earth support systems, temporary traffic barriers, any other safety systems as necessary, drainage modifications, and erosion control to facilitate the actual type, size, and location of the temporary access selected by the Contractor. Excavation and embankment construction shall meet the requirements of Section 203 – Excavation and Embankment.

Horizontal Slide shall refer to all components (including but not exclusive of the jacks, tracks, and pumps) and processes (including but not exclusive of submittal preparation, execution of the bridge movement, monitoring of bridge movement, post event inspections and remedial action) related to moving the newly erected superstructure from the temporary structural supports onto the permanent substructure units.

524.02 Materials Materials used may be either timber, reinforced concrete, or steel, or a combination of each, at the Contractor's option, and, whether new or used, shall be sound and of adequate cross section for the intended loads. If the Contractor proposes to construct with used materials, the Contractor's Professional Engineer shall submit with the plans the method for documenting that all primary member material meets the physical properties required by the design. The Department reserves the right to perform in-process fabrication inspection of all materials proposed for use. The Contractor shall notify the Resident of the fabrication schedule 7

Days prior to commencement of fabrication.

524.03 Design Temporary structural supports shall be designed to support all vertical and horizontal loading including but not limited to construction live load and 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. 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. The Cobbosseecontee Stream is subject to frequent flooding, so the temporary works may be subject to stream flow at times and shall be designed for the associated design forces. The temporary structural supports shall be completely independent of the existing bridge and its substructure. No bracing to or from the existing bridge shall be allowed. Temporary structural supports and associated foundations shall not be constructed within the stream waterway.

Design Criteria The design of temporary structural supports shall meet the requirements of AASHTO LRFD Bridge Construction Specifications (current edition). In the absence of any other stated referenced national code based criteria, the design and use of the horizontal slide system and temporary structural supports shall meet the requirements of AASHTO Guide Design Specifications for Bridge Temporary Works (current edition). The design of modifications to the permanent bridge superstructure necessitated by the Contractor's elected horizontal slide system shall meet the requirements of AASHTO LRFD Bridge Design Specifications (current edition). For items not addressed by the above documents or for any other circumstances, submit a proposal and seek the guidance and approval of the Resident prior to proceeding.

Submittal Requirements The Contractor shall be required to develop, update, and implement a comprehensive Assembly Plan for this project. The Assembly Plan shall be organized by major project elements and shall provide sufficient detail to convey the work proposed, including identifying major project constraints.

The initial version of the Assembly Plan shall be submitted to the Resident for review at least 30 days prior to the scheduled start of temporary access construction. This initial version of the Assembly Plan shall, at a minimum, contain the first three elements in the list below. The Assembly Plan shall be updated as necessary based on changes required or proposed to the planned work. If all elements listed below are not included in the initial version, a major update to the Assembly Plan shall be submitted to the Resident for review at least 60 Days prior to the scheduled Bridge Closure Period. This updated version shall include all of the elements listed below, and shall also include any field changes that have occurred since any of the previous Assembly Plan submittals.

The purpose of the Assembly Plan is to have a single reference document that integrates and coordinates all of the following project elements:

1. CPM Project Schedule (including submittal and approval milestones)
2. Temporary access and staging areas (installation and removal)
3. Temporary structural supports (installation and removal)
4. Control of water

5. Utility relocation coordination (overhead and underground)
6. Traffic detour requirements (signage and public notification)
7. Advance pile driving (if utilized)
8. Existing bridge demolition & shielding
9. Proposed substructure elements (permanent)
10. Strength gain of field cast materials
11. Horizontal slide system (including jacks, tracks, and pumps)
12. Horizontal slide execution (including geometric control and any necessary temporary bracing between bridge beams)
13. Monitoring of bridge movement (including post-event inspections and remedial action)
14. Vertical jacking and elastomeric bearing installation (including provisions for addressing any final bearing elevations that exceed the tolerances stated below)
15. Contingency plans (including backup equipment and key personnel)
16. Consolidated Communications duct bank vertical raise coordination (including third party cable pulling and splicing)
17. Underground utility tie-in coordination (including third party testing/acceptance)
18. Precast approach slabs and approach roadway construction

The temporary structural supports and horizontal slide system shall be designed and sealed by a Professional Engineer, licensed in accordance with the laws of the State of Maine. If the Department requires changes to plans or computations, based on Contract requirements, then the Contractor shall implement the changes at no additional cost to the Department. The submittal shall provide details of the temporary falsework components (including but not exclusive of the bents, lateral bracing, foundations, work platforms and all personnel safety systems).

Working Drawings Provide detailed calculations for all falsework elements and working drawings showing the location and details of temporary bents used to support the construction activities for the permanent superstructure. Include bents, bracing, foundations, work platforms, personnel safety details and support of sliding track. Indicate the type and grade for all materials. Provide calculations and details for methods used to stabilize excavations.

Show details of horizontal slide system, including but not exclusive of the jacks, tracks, and pumps, and schematic hydraulic layout, used to move the bridge superstructure from the temporary structure onto the permanent bridge substructure. Indicate the distance that the superstructure is to be moved. Provide type and grade for all materials. Clearly show on the Working Drawings and in the calculations the push/pull capacity of the horizontal slide system and limitations during all jacking operations. Provide jacking/pulling locations. Provide a detailed slide procedure, including but not limited to execution of the bridge movement, monitoring of the bridge movement, post-event inspections and remedial action.

Procedures shall include checklists to support the activities prior to, during and after the bridge superstructure has been moved to its final location. Provide checking (QC/QA) procedures prior to the horizontal movement of the superstructure in order to ensure its completion. Provide contingency plans in the event of a major breakdown or equipment malfunction. Provide operational details for the control of the movement, including any system of check-off items for the operators and for safety purposes. If attachment of the horizontal slide system to the permanent

bridge substructure is required for any reason, the Contractor shall submit detailed calculations and drawings for any proposed attachments/modifications to the permanent bridge details and/or materials to the Resident for approval.

The Department shall have no obligation to review or comment on any design, construction, maintenance or removal of the temporary structural support. 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 structural support in accordance with the Contract, or to shift any responsibility to the Department. The Contractor shall be responsible for all damages resulting from the failure of temporary structural support.

524.04 Erection and Removal The erection of temporary supports and horizontal slide equipment 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 supports without the prior approval of the Resident. No loads shall be placed on temporary supports which are adjacent to traveled ways or which support structures carrying traffic unless the Engineer responsible for the design has certified to the Resident that the system was erected in conformance with the approved plans and design details. See Special Provision Section 652 for maintenance of traffic requirements on Arcade.

The approval by the Resident of all or part of temporary supports shall not be construed as in any way relieving the Contractor of their responsibility and the work shall be entirely at the Contractor's risk. Upon completing the work requiring the use of the temporary structural supports and horizontal slide equipment, they shall be removed and the area under and around the temporary structural supports and horizontal slide equipment shall be restored to its original condition.

524.05 Horizontal Slide The Contractor has overall responsibility for the construction of the temporary falsework structure and horizontal slide system in accordance with the reviewed Working Drawings and procedures.

Movement of Superstructure The intent during movement is to ensure that the structure is delivered to the Owner, in its final location, with no damage or adverse loss of strength, loss of performance, or loss of long-term durability. Any damages to the permanent structure caused by the move shall be repaired at no cost to the State. The Contractor shall ensure that the superstructure itself remains as free as possible from harmful effects of differential movements at all sliding surfaces.

The Contractor shall establish survey control points and benchmarks as necessary, and shall maintain records of observations and operations. In the event of errors in control of movement, the Contractor shall immediately notify the Resident and submit proposals for corrective adjustments or modifications for review prior to their implementation. The final bridge superstructure position shall not exceed 1/4 inch maximum deviation from the plan location in any horizontal direction (i.e. longitudinal or transverse directions). The final bridge superstructure position shall also not exceed 1/4 inch maximum vertical deviation from the proposed finished roadway elevations at each end of the bridge.

524.28 Method of Measurement This work will be measured as one lump sum.

524.29 Basis of Payment This work will be paid as a contract lump sum price. Price shall be full compensation for all materials, equipment, labor and incidentals for the design, Assembly Plan preparation, erection, maintenance, dismantling, and removal of all temporary structural support, horizontal slide, and temporary access components from the site shown on the Contractor's plans, and in accordance with these specifications.

Payment will be made under:

<u>Pay Item</u>		<u>Pay Unit</u>
524.301	Temporary Structural Support – And Horizontal Slide	Lump Sum

SPECIAL PROVISION
SECTION 524
TEMPORARY CONDUIT SUPPORT
(Temporary Structural Support – Consolidated Communications)

Section 524 of the Standard Specifications is amended by the addition of the following:

524.01 Description: This work shall consist of the designing, fabricating, erecting, maintaining, and dismantling of temporary structural support(s) for Consolidated Communications' conduit system as called for on the Plans, all in conformity with these specifications.

This work shall also include the removal of the existing Consolidated Communications duct bank within the limits of the existing bridge.

The Contractor shall provide a minimum of four (4) weeks' notice to the Resident and Consolidated Communications prior to any completed conduit duct bank becoming available to begin Consolidated Communications' cable pulling and splicing work to be performed by others. The Contractor shall also provide a minimum of four (4) weeks' notice to the Resident and Consolidated Communications prior to any conduit duct bank raising to the proposed bridge to be performed by others.

The installation of the temporary structural support system shall not occur prior to the Maine Avenue (WIN 18736.00) Bridge Closure Period. See Special Provision Section 105 – Intent of the Contract.

524.02 Materials:

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.

Conceptual components of the temporary structural support system include:

1. Foundations
2. Conduit system support beams between each bridge abutment supported by the foundations
3. Walkway along utility support beams

Fifteen (15) hangers and fiberglass conduit for the limits between the two vaults located behind each proposed bridge abutment shall be supplied by others to the Contractor (see attached hanger catalog cut). The Contractor shall install the conduit and hangers on the temporary structural support and provide any other temporary blocking or bracing as needed for the cable pulling and conduit raising to be performed by others.

524.03 Design: The temporary structural support system and access platform design shall be submitted for approval by the Resident and Consolidated Communications and shall meet the following criteria:

1. Shall support an unfactored conduit system weight of 40 pounds per foot.
2. The temporary support beams and conduit duct bank assembly shall be constructed to follow the profile grade of the proposed bridge. Deflection in the temporary support beam and conduit shall be limited to $L/720$.
3. Minimum low chord of temporary support beam shall be 5 feet above the Q100 water surface elevation shown on the Plans. The top of the support beam shall be designed so that the temporary conduit location is no more than 3 feet lower than the permanent location between the bridge cross-frames.
4. No in-stream work shall be allowed.
5. All bolted splices shall be slip-critical.
6. The conduit duct bank and assemblies shall be able to detach from the utility support beams and the walkway and be raised as one unit by hoisting from the cross-frames above. Work to raise the conduit duct bank, install the conduit duct bank on proposed bridge, and remove temporary hoisting or bracing shall be performed by others.
7. The temporary support system shall not interfere with the highway bridge superstructure slide-in operations and shall be able to be removed after the slide-in has occurred (may require lateral jacking).
8. The Contractor shall supply and construct continuous access walkways and account for them in the design of the utility support beams. This work shall include any necessary fall protection and access from the ground for work to be performed by others.
9. The design shall include the means of earth support between the proposed vaults and back of the proposed abutments, as shown in the Plans.
10. The Contractor shall supply and install temporary bracing on the conduit hanger assemblies if needed to resist the longitudinal forces generated by Consolidated Communications' cable pulling operations. Material for the bracing shall be considered incidental to the Temporary Structural Support Pay Item. Labor will be paid for under Pay Item 629.05 Hand Labor, Straight Time.
11. The hangers shall be installed along the temporary support beam(s) below their permanent locations, as shown on the bridge framing plan.

524.041 Existing pier nose removal: It is anticipated that a portion of the upstream end of the three existing piers will need to be removed for the temporary structural support and the placement of the vault adjacent to the existing south pier. The Contractor's temporary structural support design shall evaluate existing pier removal needs and shall show that there will be no reduction in load capacity of the existing piers. Removing existing structural concrete shall be to the limits determined by the Contractor and shall be accomplished without damage to the portion of the structure to remain which will be open to public traffic and parking. Remaining parts of the existing structure that are damaged or otherwise made unusable by the Contractor's operations shall be replaced or

repaired by the Contractor at his/her own expense. During the prosecution of this work, the Resident may reject the use of any previously approved method or equipment that causes excessive vibration or possible damage of adjacent structures.

524.05 Method of Measurement

Temporary Structural Support - Consolidated Communications will be measured for payment by lump sum satisfactorily designed, supplied, 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 and the work associated with removing a portion of the upstream existing bridge piers as shown on the Plans will not be measured for payment but will be considered incidental to the Temporary Structural Support Pay Item.

524.06 Basis of Payment: Temporary Structural Support - Consolidated Communications 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 and access platforms in accordance with these specifications, as well as the removal of Consolidated Communications' duct bank on the existing bridge.

<u>Pay Item</u>	<u>Pay Unit</u>
524.301 Temporary Structural Support - Consolidated Communications	Lump Sum



4" IPS SUPPORT HANGERS

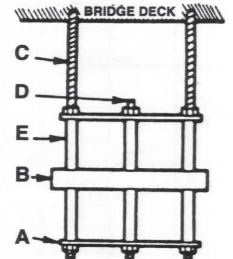
FOR 4.50 O.D. X 4.36 I.D. FIBERGLASS DUCT - IPS SIZE

HARDWARE: Specify if Zinc Plated or Hot Dip Galvanized.

STANDARD HANGING

Dimensions in Inches

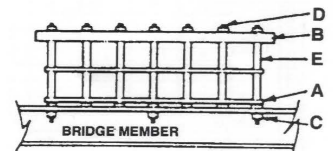
NUMBER OF DUCTS WIDE		1		2		3		4		5		6		
		Part	No. Req'd	Length	No. Req'd	Length	No. Req'd	Length	No. Req'd	Length	No. Req'd	Length	No. Req'd	Length
NUMBER OF DUCTS HIGH	1	A	1	7.69	1	13.38	1	19.06	1	24.75	1	30.43	1	36.13
		B	1	11.69	1	17.38	1	23.06	1	28.75	1	34.43	1	40.13
		C	2	26.00	2	26.00	2	26.00	2	26.00	3	26.00	3	26.00
		D	0	—	1	9.18	2	9.18	3	9.18	4	9.18	4	9.18
		E	2	4.69	3	4.69	4	4.69	5	4.69	6	4.69	7	4.69
	Weight Lbs.		9.2		11.5		13.9		16.5		18.9		23.6	
	2	A	2	7.69	2	13.38	2	19.06	2	24.75	2	30.43	2	36.13
		B	1	11.69	1	17.38	1	23.06	1	28.75	1	34.43	1	40.13
		C	2	31.18	2	31.18	2	31.18	2	31.18	3	31.18	3	31.18
		D	0	—	1	14.50	2	14.50	3	14.50	4	14.50	4	14.50
		E	4	4.69	6	4.69	8	4.69	10	4.69	12	4.69	14	4.69
	Weight Lbs.		11.1		14.6		18.2		21.9		25.5		28.9	
	3	A	3	7.69	3	13.38	3	19.06	3	24.75	3	30.43	3	36.13
		B	1	11.69	1	17.38	1	23.06	1	28.75	1	34.43	1	40.13
		C	2	36.31	2	36.31	2	36.31	2	36.31	3	36.31	3	36.31
		D	0	—	1	19.62	2	19.62	3	19.62	4	19.62	4	19.62
		E	6	4.69	9	4.69	12	4.69	15	4.69	18	4.69	21	4.69
	Weight Lbs.		13.1		17.8		22.5		27.3		32.9		36.9	
	4	A	4	7.69	4	13.38	4	19.06	4	24.75	4	30.43	4	36.13
		B	1	11.69	1	17.38	1	23.06	1	28.75	1	34.43	1	40.13
C		2	41.43	2	41.43	2	41.43	2	41.43	3	41.43	3	41.43	
D		0	—	1	24.75	2	24.75	3	24.75	4	24.75	4	24.75	
E		8	4.69	12	4.69	16	4.69	20	4.69	24	4.69	28	4.69	
Weight Lbs.		15.5		21.1		26.9		32.9		38.8		44.8		



Hanging
2 wide X 2 high

FIBERGLASS HANGER

- Part (A) 1/2" X 2" fiberglass plate
- Part (B) 2" X 2" fiberglass square tubing
- Part (C) 3/4" 10NC threaded steel attachment rods, nuts and washers (plated)
- Part (D) Spacer rods: 3/4" 10NC threaded steel rods, nuts and washers (plated)
- Part (E) 3/4" fiberglass spacer tubes (1.0" O.D. X .755" I.D. X 4.69" long)

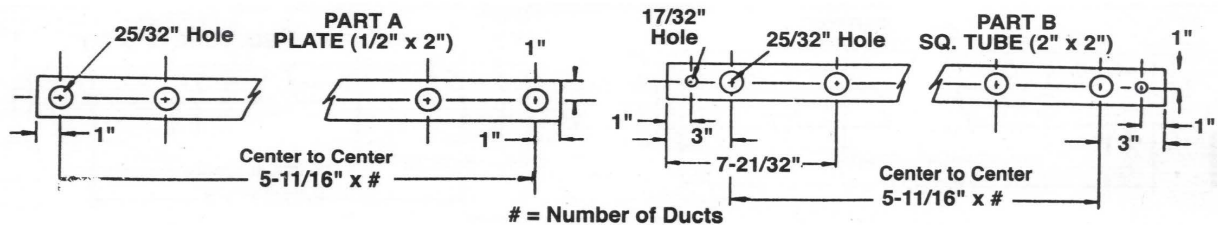


Base
6 wide X 2 high

STANDARD BASE MOUNT

Dimensions in Inches

		1			2		3		4		5		6	
		Part	No. Req'd	Length	No. Req'd	Length	No. Req'd	Length	No. Req'd	Length	No. Req'd	Length	No. Req'd	Length
NUMBER OF DUCTS HIGH	1	A	2	7.69	2	13.38	2	19.06	2	24.75	2	30.43	2	36.13
		B	0	—	0	—	0	—	0	—	0	—	0	—
		C	2	10.56	2	10.56	2	10.56	2	10.56	3	10.56	3	10.56
		D	0	—	1	7.75	2	7.75	3	7.75	4	7.75	4	7.75
		E	2	4.69	3	4.69	4	4.69	5	4.69	6	4.69	7	4.69
	2	A	2	7.69	2	13.38	2	19.06	2	24.75	2	30.43	2	36.13
		B	1	11.69	1	17.38	1	23.06	1	28.75	1	34.43	1	40.13
		C	2	17.18	2	17.18	2	17.18	2	17.18	3	17.08	3	17.18
		D	0	—	1	14.38	2	14.38	3	14.38	3	14.38	4	14.38
		E	4	4.69	6	4.69	8	4.69	10	4.69	12	4.69	14	4.69
	3 <td>A</td> <td>3</td> <td>7.69</td> <td>3</td> <td>13.38</td> <td>3</td> <td>19.06</td> <td>3</td> <td>24.75</td> <td>3</td> <td>30.43</td> <td>3</td> <td>36.13</td>	A	3	7.69	3	13.38	3	19.06	3	24.75	3	30.43	3	36.13
		B	1	11.69	1	17.38	1	23.06	1	28.75	1	34.43	1	40.13
		C	2	22.97	2	22.97	2	22.97	2	22.97	3	22.97	3	22.97
		D	0	—	1	19.97	2	19.97	3	19.97	3	19.97	4	19.97
		E	6	4.69	9	4.69	12	4.69	15	4.69	18	4.69	21	4.69
	4 <td>A</td> <td>4</td> <td>7.69</td> <td>4</td> <td>13.38</td> <td>4</td> <td>19.06</td> <td>4</td> <td>24.75</td> <td>4</td> <td>30.43</td> <td>4</td> <td>36.13</td>	A	4	7.69	4	13.38	4	19.06	4	24.75	4	30.43	4	36.13
		B	1	11.69	1	17.38	1	23.06	1	28.75	1	34.43	1	40.13
		C	2	28.16	2	28.16	2	28.16	2	28.16	3	28.16	3	28.16
		D	0	—	1	25.16	2	25.16	3	25.16	3	25.16	4	25.16
		E	8	4.69	12	4.69	16	4.69	20	4.69	24	4.69	28	4.69
Weight Lbs.		11.9		17.8		23.3		29.5		34.8		41.0		



SPECIAL PROVISION
SECTION 526
CONCRETE BARRIER
(Temporary Concrete Barrier, Anchored)

Subsection 526.01 Description is modified by the addition of the following:

This work shall consist of furnishing, setting, and removing Temporary Concrete Barrier, Anchored to the existing Bridge Street Bridge deck during the Pre-Bridge Closure Period to the limits shown on the Plans (STA 71+00 to 71+75 left). The barrier shall have attachments allowing individual sections to be connected into a continuous barrier and provisions shall be made in the casting of the barrier for anchoring the barrier to the bridge deck.

Temporary Bi-Directional Delineators shall be installed on the roadway face of all temporary concrete barrier in conformance with Special Provision 627, Temporary Bi-Directional Delineators.

The following concrete barrier designation is added:

Temporary Concrete Barrier, Anchored Removable single faced concrete barrier that is capable of being anchored to the bridge deck.

Subsection 526.02 Materials is amended by the addition of the following:

- f. Adhesive anchoring material for holding deck anchors shall be selected from the Qualified Products List of Concrete Adhesive Anchor Systems for Type I Reinforcing Steel (> #9) and Anchors (> 1") and shall be approved by MaineDOT's Transportation Research Division and the Bridge Program.
- g. Material for filling inserts or sleeves in the existing deck shall be a non-shrink grout selected from the Qualified Products List of Grout Materials and approved by the Resident.

Subsection 526.021 Acceptance The following subsection is added in its entirety:

The Resident shall have the authority to accept or reject all Temporary Concrete Barrier, Anchored used on the Project.

Subsection 526.03 Construction Requirements is amended by the addition of the following:

All Temporary Concrete Barrier, Anchored shall meet NCHRP 350 Test Level III

(TL-3) crash test requirements. Prior to fabrication and installation of the barrier the Contractor shall submit the proposed barrier and anchorage design for approval. The proposed system shall be designed in accordance with AASHTO LRFD Bridge Design Specifications, latest edition with all interims thereto. The proposed barrier and anchorage design shall be prepared and stamped by a licensed Professional Engineer registered in the State of Maine.

Thru-bolting of the barrier as a form of attachment will only be allowed in locations where the proposed anchor will not conflict with existing structural steel. Where thru-bolting of the existing deck is not permitted, anchorage shall be achieved through chemical adhesives or mechanical anchors. In all cases, the barrier anchors shall be securely fastened and tightened prior to beginning any bridge demolition work.

Subsection 526.04 Method of Measurement is amended by the addition of the following:

Temporary Concrete Barrier, Anchored shall be measured for payment by the lump sum.

Subsection 526.05 Basis of Payment is amended by the addition of the following:

Temporary Concrete Barrier, Anchored will be paid for at the Contract lump sum price, complete in place. Payment shall be full compensation for furnishing, setting, anchoring, assembling, resetting, and removing the barrier, and temporary bi-directional delineators, and all other incidentals, tools, material and labor necessary to complete the work.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
526.304	Temporary Concrete Barrier, Anchored	Lump Sum

SPECIAL PROVISION
SECTION 526
CONCRETE BARRIER

Subsection 526.05 Basis of Payment is amended by the addition of the following:

<u>Pay Item</u>		<u>Pay Unit</u>
526.3401	Permanent Concrete Transition Barrier – Modified	Each

SPECIAL PROVISION
SECTION 530
PREFABRICATED BRIDGE STRUCTURE AND ASSEMBLY

530.01 Description This work shall consist of manufacturing, transporting, and erecting concrete/steel composite prefabricated bridge units (PBU's) as shown on the Contract Plans (Bid Alternate 1).

The work under this Section shall be performed in accordance with these specifications, the Contract Plans, and applicable Sections 502, 503, 504, 505, 506, and 534 of the Standard Specifications and as noted below. The reinforced concrete portions of the PBU's may be constructed by a Fabricator or the Contractor.

530.02 Materials Materials shall meet the requirements of Sections 502.03, 503.02, 504.02, and 505.02.

530.03 Drawings Working drawings shall be prepared and submitted in accordance with Sections 504.03, and 534.03 with the following additions, regardless of who fabricates the PBUs.

The Contractor shall prepare and submit shop details for fabrication, handling and erection, and all other necessary working drawings, for approval. Fabrication and erection shall not begin until the Department's written approval of the submitted shop drawings has been received.

Fabrication drawings shall include:

1. Locations and details of all lifting inserts, blockouts, hardware, or devices.
2. Type and amount of any additional reinforcing required for lifting.
3. Minimum compressive strength to be attained before handling the precast elements.
4. Details of any closure pour width or closure pour reinforcing revisions from what is shown in the Plans.
5. Labeling of precast versus cast-in-place concrete and who will perform the work (Fabricator or Contractor).

Working and Erection drawings shall include:

1. PBU erection sequence.
2. Crane charts.
3. Crane and pick locations.
4. Cables and lifting equipment.
5. Sequence and methods used to shim PBU's if necessary.
6. Form materials, methods, equipment, and procedures for forming the slab, edges, blockouts, joints, and beam haunches.
7. Materials, methods, equipment, and procedures for installing closure pours and link slabs as shown on the Plans.

Fabrication and erection drawings include details of lifting and handling the PBUs, their storage, transportation, including handling at the production facility and construction site. PBUs

shall not be handled or transported until the full 28-day compressive strength of the concrete is attained as demonstrated with concrete cylinder tests.

530.04 Design Requirements Design computations shall be submitted for approval for handling, erection, and any closure pour width or closure pour reinforcing revisions and shall be reviewed, checked, and initialed accordingly and signed and sealed by a Professional Engineer licensed in accordance with State of Maine laws.

530.05 General Fabrication Requirements The structural steel furnished under this Section shall be fabricated in a plant meeting the requirements of Section 504.04. After steel fabrication, the structural steel may be transported to a location, approved by the Department, where the remainder of the composite structure may be fabricated.

The Fabricator or Contractor constructing the reinforced concrete portion of the PBU's shall prepare and submit for approval a Quality Control Plan and erection/lifting plan(s) specific to the member detailed.

530.06 Inspection

Concrete elements fabricated by a precast concrete Fabricator shall be inspected by the Department in accordance with Section 106 and Sections 534.05 to 534.09. Section 502 QC/QA acceptance methods shall not apply to concrete fabricated by a precast Fabricator. Concrete elements fabricated by the Contractor shall be inspected in accordance with Section 106 and 502 and QC/QA acceptance methods shall apply as shown in the Section 502 Special Provision.

530.07 Fabrication

A. Forming Members Formwork shall meet the applicable requirements of Section 502.09 as well as the following:

Relative bearing elevations shall be within +/- 0.01' of that shown on the Contract Plans to ensure PBU's are not subject to adverse twisting stresses and to ensure proper seating in their final positions in the field.

B. Structural Steel All diaphragms shown on the Contract Plans shall be installed prior to placing any concrete formwork or concrete.

C. Reinforcing steel shall be stainless steel conforming to ASTM A995/A996M Grade 75.

D. Concrete Concrete mix shall meet the requirements of Section 502.05 for Concrete, Class A. Concrete shall be produced and tested in accordance with Sections 502.1701 through 502.1707 if produced by the Contractor and not a precast concrete Fabricator.

E. Placing Concrete Placing concrete shall meet the applicable requirements of Section 502.08 and 502.10.

F. Curing Curing shall meet the requirements of Section 502.14.

G. Concrete Finishing Finishing shall conform to the requirements of Section 502.13 and the waterproofing membrane manufacturer.

H. Dimensional Tolerances:

a. Geometry of Concrete Deck

- i. Length (Each PBU) $\pm \frac{3}{4}$ " (Adjacent PBU lengths shall not vary by more than $\frac{3}{4}$ "
- ii. Width $\pm \frac{3}{8}$:
- iii. Deck Thickness $+\frac{3}{8}$ " / $-\frac{1}{4}$ "
- iv. Deviation from diagonals $\pm \frac{3}{4}$ " (horizontal)
- v. Deviation from End Squareness or Skew $\pm \frac{3}{4}$ " (horizontal)
- vi. Stringer spacing $\pm \frac{1}{2}$ " (within a PBU)
- vii. Horizontal Alignment $\pm \frac{3}{8}$ " (Deviation from straight line parallel to the centerline of the PBU)
- viii. Insert Location $\pm \frac{3}{8}$ "

b. Reinforcing

- i. Spacing ± 1 " (non-cumulative)
- ii. Cover (Top and Bottom Mat) $\pm \frac{1}{4}$ "

c. Field Installation

- i. See Installation Section herein.
- ii. Deviation in joint width between PBUs shall be $\pm \frac{1}{2}$ "

I. Acceptance of PBUs Individual PBUs will not be accepted for any of the following reasons:

- a. Fractures or cracks passing through the deck.
- b. Honeycombed open texture.
- c. Dimensions not within the allowable tolerances as specified.
- d. Separation of the concrete deck from the steel girders.
- e. Defects that indicate proportioning, mixing, and molding not in compliance with the Specifications.

- f. Damaged ends where such damage would prevent making a satisfactory joint.
- g. PBUs with crack(s) within any part of the concrete that is/are greater than 0.03" in width.
- h. Significant damage to the PBU's during transportation, erection, or construction as determined by the Resident.
- i. PBUs not fabricated in accordance with the Contract Documents.

J. Repair of PBUs PBUs that contain minor defects caused by manufacture or handling may be repaired at the manufacturing site. Repair procedures shall be in accordance with the approved Quality Control Plan and require approval by the Department. Minor defects are defined as holes, honeycombing, or spalls which are 6 inches or less in diameter and do not penetrate deeper than 1 inch into the concrete. Surface voids or "bugholes" that are less than 5/8 inch in diameter and less than 1/4 inch deep need not be repaired. Repairs shall be made using an overhead and vertical concrete repair material satisfactory to the Department. The repair material shall be cured as specified by the manufacturer. The Department shall approve final repairs.

K. Cracking Crack widths less than 0.01" shall be sealed with a penetrating sealer using Department approved materials and procedures. Crack widths measuring 0.01" to 0.03" shall be epoxy injected using Department approved materials and procedures. At the Department's discretion, cracked members shall be repaired or replaced at the Contractor's expense.

L. Labeling Each PBU shall be clearly and permanently labeled on the underside of the deck (in the vicinity of the up-station end) with the following information:

- a. Manufacturer
- b. Date of Manufacture
- c. Mark Number.

M. Production Site Handling PBUs shall not be lifted, moved, or otherwise disturbed until the concrete has reached full design strength.

N. Pre-Assembly The PBUs shall be pre-assembled at the fabrication location to assure proper match between adjacent PBUs before shipping to the project site, to the satisfaction of the Department.

O. Shipping PBUs shall not be shipped until the minimum 28-day strength is attained and they have been approved by the Department. A 48-hour advance notice of the loading and shipping schedule shall be provided. The PBUs shall be secured on the vehicle to ensure cracking will not occur during transport. The Contractor shall secure the necessary hauling permits.

530.08 Installation

A. General The PBUs shall be fabricated in accordance with the applicable Sections of the Specifications and/or the Special Provisions. Construction procedures and permissible variations other than those contained herein shall be submitted for approval.

B. Erection Plan Cranes, lifting devices, and other equipment for erecting the PBUs shall be of adequate design and capacity to safely erect, align, and secure all members and components in their final positions without damage. The Contractor is solely responsible for the methods and equipment employed for the erection of the precast concrete/steel composite superstructure units.

The Contractor shall submit Working Drawings in accordance with Section 105 for the methods and sequences of precast concrete/steel composite superstructure unit erection, any temporary bracing, and the equipment to be used for the erection. The erection plan shall include the necessary computations to indicate the magnitude of stress in the segments during erection and to demonstrate that all of the erection equipment has adequate capacity for the work to be performed. The erection plan shall contain provisions for all stages of construction, including temporary stoppages and hourly sequencing information

The PBUs may be used to support limited construction equipment and vehicles prior to constructing zipper pours and other closure pours only with written permission of the Department. The proposed use of the precast concrete/steel composite superstructure units for support of equipment/vehicles shall be detailed in the erection plan with location of wheel lines/axles noted and extents of traffic plating and other devices to cover gaps and openings in the deck.

Submittal of the erection plans is for the Department's information only and shall in no way be construed as approval of the proposed method of erection. Unless otherwise directed by the Department, the Contractor shall follow the erection plans as submitted.

C. Erection of PBUs PBUs shall be installed to the correct line and grade as shown on the approved drawings and as indicated in the approved erection procedures. Prior to setting PBUs and to avoid torsion stresses, bearing elevations within a given PBU shall be adjusted as approved by the Resident to match relative elevations used during the deck casting operations. After all the PBUs are erected, they shall be inspected to ensure the correctness of their location.

D. Matching Elevation of PBUs Adjacent PBUs shall match elevations within 1/4 inch vertically (along longitudinal edges) and 1/8 inch vertically at the end of PBUs. If the tolerance is not met, the PBUs shall be adjusted as indicated in the procedures shown on the approved Working Drawings.

E. Filling and Sealing Longitudinal Joints Prior to placement of closure pour concrete, the surface of the joint shall be free of any material, such as oil, grease, or dirt, which may prevent bonding of the sealing materials.

F. Sealing of Lifting Holes After the PBUs are in their final locations, a bonding agent shall be applied and the lifting holes filled with cementitious grout. A removable form shall be provided at the bottom surface of the deck to retain the grout if required. Grout shall not be placed until ambient temperatures are compatible with grout manufacturer recommendations.

G. Loading PBUs may be loaded upon erection and before closure pours are constructed in accordance with the approved erection procedure. Once the closure pours are placed, no further loading of the PBUs will be allowed until closure pour material has properly cured and as approved by the Resident.

H. Final Repairs After the installation work is complete, remaining concrete defects, holes for inserts, and lifting holes shall be repaired as indicated and approved by the Department.

530.09 Method of Measurement The quantity of Prefabricated Bridge Structure and Assembly will be measured as one lump sum, complete, in place and accepted.

530.10 Basis of Payment The accepted quantity of Prefabricated Bridge Structure and Assembly will be paid for at the Contract lump sum price. Payment will be full compensation for detailing, fabrication, repairing, quality control testing, transportation, handling, and installing the materials specified, including deck concrete, longitudinal superstructure and end closure pour concrete, stainless reinforcing steel, structural steel, shear studs, connectors, temporary bearings, and shims; for designing and installing lift brackets and any other material contained within or attached to the members; for furnishing and implementing the erection plan; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work. Any closure pour width or closure pour reinforcing detail revisions that the Contractor submits for approval shall be incidental.

Pay adjustments for compressive strength, permeability, and air content will be determined using the Quality Level Analysis specified in Section 106 and the Pay factors (PF) included in the Contract Special Provisions only if the concrete elements are fabricated by the Contractor and not by a precast concrete Fabricator

Curb and sidewalk concrete will be paid for separately.

Protective coatings for structural steel will be paid for separately under the appropriate Section 506 items.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
530.04 Prefabricated Bridge Structure and Assembly	Lump Sum

SPECIAL PROVISION
SECTION 530
(Prefabricated Steel Truss Bridge)

530.01 Description

Work under this item shall be in conformance with the applicable portions of Section 504 of the Standard Specifications. The work under this specification shall include furnishing and installing a Prefabricated Bridge Superstructure, including bridge bearings, hardwood timber decking, deck expansion joints, and railing, as shown on the Plans. The bridge superstructure shall be fully engineered according to the requirements contained herein. All necessary work and incidental items required to complete the installation and connections to the substructure (including bearings and anchor bolts) shall be included in this work.

530.02 Materials

Steel

- All truss members shall be high strength, low alloy steel. The minimum thickness of all structural steel members shall be 5/16" nominal.
- Truss members to be galvanized shall be fabricated using ASTM A500 grade C cold-formed welded square and rectangular tubing (Fy = 50,000 psi) and/or high strength, low alloy, atmospheric corrosion resistant ASTM A847 cold-formed welded square and rectangular tubing (Fy = 50,000 psi) and/or ASTM A588, ASTM A242, ASTM A572, ASTM A 606 (Fy = 50,000 psi) and/or ASTM A36 (Fy = 36,000 psi) plate and structural steel shapes. Splice plates, if required, shall be ASTM A588. Steel members, fabrications and assemblies shall be Hot Dip Galvanized in accordance with ASTM A123, after fabrication is completed.
- All structural steel with calculated tensile stresses shall meet a Charpy-V-Notch (CVN) value of 15 foot-pounds at 40 degrees Fahrenheit. CVN testing shall be in accordance with AASHTO T 243 (ASTM A 673). The H frequency shall be used.
- All structural steel field connections shall be bolted with high strength bolts. High strength bolts, nuts, and plain hardened washers shall conform to the requirements of ASTM F3125, Grade A325 Type 1. Fasteners shall be galvanized steel coated in accordance with ASTM A 153. Retap nuts after galvanizing.
- Anchor bolts and nuts supplied shall conform to ASTM F 1554 with a minimum yield strength of 55 ksi. Anchor bolts shall be supplied with 2 heavy hex nuts and 2 hardened washers and unless otherwise specified the anchor bolts shall have a 90-degree bend with a 150 mm (6 inch) minimum leg length at the lower end. The anchor bolts, nuts and hardened washers shall be hot-dipped galvanized to ASTM A 153. After galvanizing, the nuts shall be retapped oversize by an amount appropriate to the nut size.

Wood Decking

All decking shall be 1 1/2" full thickness planks unless approved otherwise. Wood decking shall be naturally durable tropical hardwood (ipe or approved equal). All planks shall be partially air dried to a moisture content of 15% to 20% and shall be supplied S4S (surfaced

four sides), E4E (eased four edges), with the edges eased to a radius of 1/8". Measured at 30% moisture content, the width and thickness shall not vary from specified dimensions by more than ± 0.04 inches. All planks shall be supplied with the ends sealed with an aqueous wax log sealer.

All planks shall be graded as FEQ-CAH (First Export Quality - Heart Clear) grading rules, defined as follows:

- Lumber shall be graded both faces and both edges.
- Lumber shall be straight grained, maximum slope of grain to be 1:10.
- Lumber shall be parallel cut without heart centers or sap wood.
- Lumber shall be in sound condition, free from worm holes or knots.
- Allowable Imperfections are:
All faces: Natural drying checks; discoloration caused by weathering or chemical reaction; bow or spring which can be removed using normal installation methods and tools.
- Imperfections Not Allowed:
Longitudinal heart cracks; internal cracks; firm or soft sap wood; splits; end splits; ring shades; fungi effects (blue to gray, brown to red, white to yellow, or incipient decay); deformation (twisting or cupping) which cannot be removed using normal installation methods and tools.

All planks shall meet or exceed the following mechanical properties (based on the 2" standard) as defined by the U.S. Forest Products Laboratory publications and testing data:

<u>MC%</u>	<u>Modulus of Rupture</u>	<u>Modulus of Elasticity</u>	<u>Max. Crush Strength</u>
12%	22,360 psi	3,140,000 psi	13,010 psi

Janka side hardness is 3680 lbs. at 12% moisture content
Average air-dry density is 66 to 75 pcf.
Basic specific gravity is 0.85 - 0.97.

All planks shall be naturally fire resistant without the use of any fire-resistant preservatives to meet NFPA Class A and UBC Class I.

Planks shall be supplied that meet or exceed the Static Coefficient of Friction for both Neolite and leather shoes in accordance with ASTM Test Method C1028-89.

FORCE IN POUNDS

<u>SHOE MATERIAL</u>	<u>DRY</u>	<u>WET</u>
Neolite	0.73	0.69
Leather	0.55	0.79

For transverse wood decking, axle loads shall be assumed to act on one plank only. The resultant wheel loadings described in Section 530.033 of this specification shall be distributed on the plank along a length equal to the tire print width (W, or 10"). The plank shall be designed for shear and bending in accordance with the support conditions and spacing. For design, the following allowable values shall be used:

Allowable Bending = 3,700 psi
Allowable Shear = 320 psi
Modulus of Elasticity = 3,000,000 psi

Bearings

The selected fabricator shall determine the bearing type and conform to the Standard Specification Section 523 – Bearings.

Bridge Railing

The multi-use bridge shall have a continuous railing over the length of the bridge made of either timber, steel, or a combination of both. Timber shall be naturally durable tropical hardwood (ipe or approved equal) that matches the wood decking.

530.03 Construction Requirements

530.031 Qualification of Fabricator Bridge(s) shall be fabricated by a fabricator who is currently certified by the American Institute of Steel Construction to have the personnel, organization, experience, capability and commitment to produce fabricated structural steel for Major Steel Bridges with Fracture Critical Endorsement as set forth in the AISC Certification Program. Quality control shall be in accordance with procedures outlined for AISC certification.

Qualified suppliers must have at least 5 years of experience fabricating these type structures.
Pre-approved Manufacturers:

1. CONTECH Bridge Solutions Inc.
4021 Gault Avenue South
Fort Payne, AL 35967
2. Excel Bridge Manufacturing Co.
120001 Shoemaker Avenue
Santa Fe Springs, CA 90670
3. Big R Bridge
P.O. Box 1290
Greeley, CO 80632-1290
4. Or approved equal

Qualifications of suppliers shall be submitted for approval prior to starting all work. The Contractor shall provide the following information for any proposed supplier:

- Product Literature
- All documentation to insure the proposed substitution will be in compliance with these specifications. This shall include:
 - Representative design calculations
 - Representative drawings
 - Splicing and erection procedures
 - Warranty information
 - Inspection and Maintenance procedures
 - AISC Shop Certification
 - Welder Qualifications
- Proposed suppliers must have at least five (5) years experience designing and fabricating these type structures and a minimum of five (5) successful bridge projects, of similar construction, each of which has been in service at least three (3) years. List the location, bridge size, owner, and a contact for reference for each project.

The Engineer will evaluate and verify the accuracy of the submittal prior to approval. If the Engineer determines that the qualifying criteria have not been met, the Contractor's proposed supplier shall be rejected. The Engineer's ruling will be final.

530.032 Bridge Requirements The bridge length shall be 76'-6" (straight line dimension) and shall be as measured from centerline of bearing to centerline of bearing. The overall bridge length shall be designed to fit within the proposed substructure units as shown in the Plans and shall provide adequate tolerance for thermal movement. Bridge clear width shall be 10'-0" and shall be as measured from the inside face of the railing at deck level. The following provisions also apply:

- Bridge style shall be a single span, H-Truss as manufactured by the selected fabricator. Truss to consist of a continuous top chord with intermediate vertical members at the interior bottom chord panel points and one diagonal per panel. All vertical members shall be plumb.
- Gusset plates to be designed to adequately transfer member stresses at panel points. All gusset plate corners shall have a 1" radius.
- Bridge shall be designed utilizing a nested floor beam (floor beam to fit within the trusses) as shown on the Plans.
- Hardwood plank decking shall be oriented with the centerline of the board perpendicular to the bridge centerline.
- The distance from the top of the deck to the top and bottom truss members shall be as shown on the Plans. The minimum low chord elevation shall be as shown in the Plans.
- The top of the top chord at midspan of the structure shall not be greater than 3ft-6in above the deck.
- All members of the vertical trusses (top and bottom chords, verticals and diagonals), as well as other structural members and bracing, shall be fabricated from structural steel

shapes. Square and/or rectangular structural steel tubing may also be used if details for galvanizing (such as ventilation ports and drain holes) are included in the design of members. To provide lateral support for the top flange of open shape stringers (w-shapes or channels), a minimum of one stiffener shall be provided in each stringer at every floor beam location.

- Pedestrian railing shall be installed along the full length of the bridge, on the inside of the structure. The railing and all connections shall be designed for an infill loading of 200 pounds, applied horizontally at right angles, to a one square foot area at any point in the system. All railing panels shall be fabricated and installed so as to prevent a 4" sphere from passing through the rail system.
- An EMSEAL (or approved equal) expansion joint shall be provided at both ends of the bridge to provide a uniform, even transition from the bridge surface onto the bridge approaches.
- The bridge top and bottom chords shall have a vertical camber dimension at midspan equal to 100% of the full dead load deflection plus 2 ½ inches.

Installation of hardwood decking shall be in accordance with recommendations provided by the manufacturer/provider. In the event of a conflict in installation methods, the recommendations of the manufacturer/provider shall take precedence over the information provided herein. At time of installation, planks are to be placed tight together with a maximum gap width of approximately 1/16". Every plank must be attached with at least one fastener at each end, and a minimum of two fasteners at a location approximately near the center of the bridge width. All fasteners to be zinc plated stainless steel. Self-tapping screws or hex-head bolts, with a steel plank holddown, are to be used at the ends of planks. Self-tapping screws or carriage bolts are to be used as interior connection fasteners when required. Power actuated fasteners will not be allowed. Planks are to be drilled prior to installation of bolts and/or screws.

In addition to at least one fastener at each end of every plank (typical for all installations), planks for bridges shall be attached with a minimum of two fasteners at a location approximately near the center of the bridge width.

NOTE: Attachments at the ends of the planks may be modified as required when obstructions, such as interior beam elements prevent installation of the specified hold-down system.

530.033 Design Requirements The bridge structure and bearings shall be designed and signed by a Professional Engineer licensed in accordance with the State of Maine Regulations. Design shall meet the requirements of the latest versions and interim revisions of the AASHTO LRFD Bridge Design Specifications, and AASHTO Specifications for Design of Pedestrian Bridges. Hardwood plank decking shall be designed in accordance with the ANSI/AF&PA NDS, "National Design Standard for Wood Construction", as published by the American Forest & Paper Association. The following design requirements shall also apply:

The minimum thickness of all steel components shall be 5/16".

Design Loads:

- Dead Loads: The bridge structure shall be designed considering its own dead load (superstructure and original decking), as well as the midspan interpretive panel fixture.
- Pedestrian Loads: Pedestrian loading shall consist of a minimum uniform live load of 90 pounds per square foot.
- Vehicle Loads: H10.
- Concentrated Loads: A concentrated load of 1000 pounds placed on any area 2.5 ft x 2.5 ft square.
- Wind, snow, and seismic loading shall be in accordance with AASHTO Specifications and MaineDOT Bridge Design Guide.

Deflection:

- Vertical Deflection
 - Vertical deflection of the main trusses due to service pedestrian live load shall not exceed 1/500 of the span.
 - The deflection of the floor system members (floor beams and stringers) due to service pedestrian live load shall not exceed 1/360 of their respective spans.
- The horizontal deflection of the structure due to lateral wind loads shall not exceed 1/500 of the span under a 35 PSF wind load.

Welding

- Welding of bridge structure shall conform to Section 504 Structural Steel, AWS D1.1 for tubular members, and ANSI/AASHTO/AWS D1.5 Bridge welding code for structural steel members with the following additional requirements:
- All fracture critical members shall be identified on Plans and Shop Drawings. Fracture critical members shall be welded in conformance with the minimum preheat and interpass temperatures specified in Tables 12.4 or 12.5 of AWS D1.5, or 200 degrees Fahrenheit provided wall thickness of members are $\frac{3}{4}$ " or less. Filler metals shall meet the requirements of Tables 4.1, 4.2, or 4.3 of AWS D1.5.
- Welding using the GMAW process with a single gas or gas mixture containing less than 80 percent Argon shall be considered a short-circuiting process and shall not be used in bridge components with calculated stresses.
- All non-destructive testing of welds shall conform to the requirements of Section 6, AWS D1.5 with the exception of complete groove welds in tubular butt joints. These welds shall be non-destructively tested in accordance with AWS D1.1, Section 6.18.
- Welders shall be properly accredited operators, each of whom shall submit certification of satisfactorily passing AWS standard qualification tests for all positions with unlimited thickness of base metal, have a minimum of 6 months experience in welding tubular structures and have demonstrated the ability to make uniform sound welds of the type required.

530.034 Fabrication Unless addressed in this Special Provision, all structural steel and fabrication shall be in accordance with applicable sections of Standard Specifications Section 504 - Structural Steel and Section 713 - High Strength Bolts.

All splices, shop welded or otherwise shall not be placed within 15 feet of the midspan.

When the collection of water inside a structural tube is a possibility, either during construction or during service, the tube shall be provided with a drain hole at its lowest point to let water out.

530.035 Finishes The prefabricated multi-use bridge shall be hot-dip galvanized and painted with a two-coat paint system in accordance with Section 506 – Shop Applied Protective Coating - Steel. The two-coat paint system shall consist of an epoxy intermediate coat and a polyurethane top coat from the NEPCOAT QPL. Surface preparation necessary to provide adequate adhesion of the coating shall be performed according to ASTM D6386 and Section 506.23 – Top-coating Galvanized Surfaces.

The finish color of the bridge shall be Duncan “Rain Forest Green” (SW 4071, LRV 8%, Semi-Gloss) or similar; a sample and/or color chip to be used shall be provided to MaineDOT for approval prior to fabrication with the design intent of matching the green finish of the highway bridge railing.

530.04 Submittals The Contractor shall submit three (3) sets of Shop Drawings and Design Computations for the pedestrian bridge showing all details for the bridge fabrication to the Resident for review and approval. The shop drawings and design computations shall be prepared and stamped by a professional engineer licensed in the State of Maine. The calculations shall include all design information necessary to determine the structural adequacy of the bridge.

The following documentation shall also be submitted:

- The Contractor shall submit specifications for all materials and installation instructions.
- The Contractor shall submit the manufacturer’s recommended maintenance program.
- The Contractor shall submit a detailed erection plan for review and approval. The erection plan shall identify proposed crane models and locations, pick weights, attachment points, and all other information deemed pertinent and relevant to the safe completion of the bridge erection. The erection plan shall be prepared by a professional engineer licensed in the state of Maine and submitted to the Resident for approval.
- The Contractor shall require the supplier to provide a construction advisor to assist the Contractor in the construction of the bridge. The actual construction of the bridge is the responsibility of the Contractor.

530.05 Delivery and Erection Delivery of the bridge shall be arranged by the supplier and Contractor. The Contractor shall notify and coordinate delivery and erection of the bridge with the Resident and the City of Westbrook’s on-site representative.

530.06 Warranty The bridge manufacturer shall warranty their steel structure(s) to be free of design, material, and workmanship defects for a period of ten years from the date of delivery. Hardwood timber wood plank decking and blocking (if required) shall carry a ten-year warranty against rot, structural damage from termites, and fungal decay wood.

530.07 Method of Measurement Prefabricated Bridge Superstructure shall be measured as a unit including designing, fabricating, and installing a bridge superstructure as shown on the Plans or as ordered. The prefabricated bridge shall include all hardwood timber decking, deck expansion joints, railing, bridge bearings, anchor bolts, attachments, hardware, and other incidentals required for complete installation of the Prefabricated Bridge Superstructure

530.08 Basis of Payment The installed and accepted Prefabricated Bridge Superstructure will be paid for at the contract lump sum price, complete in place. Such payment shall be considered full compensation for fabrication, shop drawings, coordination, delivery, and erection of the prefabricated bridge, including all materials, labor, equipment, and incidentals required to complete the work. Payment for the proposed substructure is covered under separate pay items.

Payment will be made under:

Pay Item

530.01 Steel Pedestrian Bridge

Pay Unit

Lump Sum

SPECIAL PROVISION
SECTION 531
BRIDGE STRUCTURE - DETAIL BUILD

Description This work shall consist of the design, detailing, materials, fabrication, delivery, and construction of a superstructure alternative (Bid Alternate 2) for a simple span highway bridge founded on pile supported integral abutments in accordance with these specifications, and in close conformity with the lines and grades shown on the Plans or as directed by the Resident. This work shall include the following:

- Design, load rating, and detailing of the new bridge superstructure, which includes structural beams, closure pours, deck (if applicable), end diaphragm, temporary bearings, and wearing surface.
- Design and detailing of utility supports and attachment to the new superstructure.
- Design check of reinforced concrete integral abutments founded on H-piles for increased dead load and any associated substructure redesign.

Any details not included in this Specification, such as vertical alignment, horizontal alignment, bridge rail, curbs, and sidewalks, shall be as specified in the Contract Plans.

Detail-Build - Options

1. Precast/prestressed concrete PCI NEXT beam (D, E, or F) superstructure

Approved superstructure suppliers/fabricators are listed below (or Department accepted equals):

1. JP Carrara & Sons, Inc.
2464 Case Street
Middlebury, VT 05753 802-388-6363, Fax 802-388-9010
2. Strescon, Ltd.
400 Chelsey Drive
St. John, New Brunswick
Canada E2K 5L6 506-632-2600, Fax 506-632-7689
3. Strescon, Ltd.
131 Duke Street
Bedford, Nova Scotia
Canada B4A 3C3 902-494-7400
4. Oldcastle Precast
41 Alameida Road
Rehoboth, MA 02769 508-336-7600
5. Blakeslee Prestress Inc.
P.O. Box 510
Bradford CT 06405 203-481-5306, Fax 203-481-3562
6. Dailey Precast, LLC.
295 Airport Road
Shaftsbury, VT 05262 802-442-4418, Fax 802-442-0738

Design Requirements The bridge superstructure shall be designed by a licensed Professional Engineer (Engineer of Record, EOR) registered in the State of Maine. The design shall be in accordance with the latest editions of the AASHTO LRFD Bridge Design Specifications, the MaineDOT Bridge Design Guide (BDG), MaineDOT Standard Details, MaineDOT Standard Specifications, PCINE Guidelines for Northeast Extreme Tee Beam (NEXT Beam), and project-specific Special Provisions.

The bridge superstructure design, in its entirety, shall be independently checked by a licensed Professional Engineer (different than the EOR) registered in the State of Maine.

The superstructure design shall be load rated in accordance with the AASHTO Manual for Bridge Evaluation, latest editions, and the MaineDOT Load Rating Guide, using the LRFR Method.

The span length shall be 78 feet from centerline of bearing to centerline of bearing with a 0° skew, as shown on the MaineDOT Contract Plans. The bridge cross-section shall have the same cross slope, curbing, sidewalk, railings, membrane, and asphalt wearing surface as the Precast Bridge Unit option. The vertical and horizontal alignments shall be as shown on Contract Plans. The low chord elevation of the bridge shall be greater than or equal to EL. 10.8 (NAVD88).

The bridge superstructure shall be designed for a modified HL-93 live load. The modification to the HL-93 loading shall be an increase in the truck live load by 25% for the Strength I load combination only; all other load combinations shall use the standard HL-93 live load.

NEXT F options may use a 1-inch integral concrete wearing surface in lieu of a bituminous wearing surface with waterproofing membrane. The Next D and E options shall use 3 inches of hot mix asphalt over high performance waterproofing membrane.

Utility supports for the Gardiner Water District 18.06-inch (OD) water main shall be designed for a load of 120 pounds per linear foot and a maximum unsupported length of 10 feet. Any supports embedded in the deck must be stainless steel and must be installed during the fabrication process. Field installation of inserts or other methods of attaching utility supports to the deck are prohibited. All other components shall be stainless steel, or galvanized or metalized per Section 506 of the Standard Specifications.

The EOR shall verify that the increased dead load from the concrete superstructure does not affect the substructure design. If the pile loading or abutment bending exceeds design limits as specified in the design standards, the EOR shall submit a revised abutment and pile design.

Materials The requirements of the Special Provision are in addition to the Standard Specifications, Sections 502 – Structural Concrete and 535 – Precast, Prestressed Superstructures. QC/QA acceptance methods shall apply to any concrete not cast in a precast facility according to Special Provision Section 502 QC/QA Acceptance Methods.

Buy America **IS** applicable to this project.

- Concrete shall be Class P (beams), Class A (deck if used), or Class LP (curbs and sidewalks) as applicable.
- Reinforcing steel shall be stainless steel, ASTM A995 – Gr. 75.
- Prestressing strands shall be AASHTO 203 (ASTM A416), Grade 270, Low Relaxation.

Submittals Submittals shall be handled in accordance with Subsection 105.7 of the Standard Specifications. The Contractor shall electronically submit to the project Resident a formal design package submittal at the 50% design development stage containing plans that show the type of bridge superstructure to be constructed and an overall layout of the bridge including a plan, profile, and typical section drawing. The substructure design check and any changes to the substructure design shall also be submitted for review at this time. The Contractor shall address all comments from the Department before entering final design.

The final submittal shall include the final set of Design Drawings, Design Computations, Superstructure Load Rating Computations (including the Load Rating forms), and Design Check Computations for all bridge components. The Contractor shall submit the final submittal to the project Resident electronically. The Contractor shall address all comments from the Department on the final submittal and receive written approval from the Department prior to fabrication and commencement of construction. The Design Computations and Load Rating Computations shall be signed and sealed by the EOR and the Engineer responsible for the independent design check. The Design Drawings shall be signed and sealed by the EOR.

Upon completion of construction, the Contractor shall submit an electronic submission of as-built drawings signed and sealed by the EOR with any field changes or alterations noted. If any field changes or alterations occur that will affect the bridge structure load capacity, the load rating shall be updated.

Method of Measurement The Detail-Build bridge superstructure will be measured by the lump sum.

Basis of Payment The accepted bridge superstructure alternative will be paid for at the contract lump sum price for the pay item listed below. Such payment shall be full compensation for all design, detailing, materials, fabrication, delivery, and construction of the Detail-Build bridge superstructure, including structural beams, bridge deck (if applicable), closure pours, sidewalk, curbs, membrane (if applicable), wearing surface, and any related design, detailing, and construction of substructure modifications required as a result of the Detail-Build superstructure. The applicable sections of Division 500 of the Standard Specifications govern all structural work.

Payment will be made under:

Pay Item

Pay Unit

Gardiner
WIN 18736.00
September 27, 2018

531.51 Bridge Superstructure – Detail Build

Lump Sum

SPECIAL PROVISION
SECTION 534
PRECAST STRUCTURAL CONCRETE
(Precast Abutment & Approach Slab)

Section 534 of the Standard Specification is amended by addition of the following:

534.01 Description: This work shall consist of fabricating, delivering, and erecting the precast abutments, precast approach 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 fabricate these concrete elements in accordance with Section 502 rather than utilizing a precast concrete Fabricator.

534.02 Materials

If accelerated curing is to be used in production, the trial batch test specimens shall be similarly cured.

Reinforcing steel shall be stainless steel conforming to ASTM A995/A996M Grade 75.

534.04 Design Requirements Delete this Subsection in its entirety.

534.12 Inserts Refer to Subsection 535.12.

Bridge Street 18735.00:

Galvanized corrugated metal pipe (CMP) void inserts shall be non-absorbent and anchored securely.

Maine Avenue 18736.00:

The interior finish surface of the voids shall be intentionally roughened using a retarded finish per MNL 116. Stay-in-place forms will not be allowed including corrugated metal pipe.

534.16 Tolerances Tolerances for precast units shall be in conformance with the latest edition of MNL 116, as applicable, unless shown otherwise in the Plans.

534.20 Installation of Precast Units Lift and erect the units using the devices provided and in accordance with the erection drawings and approved devices cast into them. Support and secure elements as required to prevent movement and overturning and in a manner that assures keyways, inserts, and mechanical connections are in proper alignment.

Prior to grouting, ensure mating surfaces are clean and saturated with water to prevent absorption of water from the grout. Seal all edges to prevent loss of grout.

Grout material shall be flowable and have a minimum 28-day compressive strength of 6,000 psi. Grout material and application procedures shall be submitted for approval with the Working Drawings.

534.21 Method of Measurement Precast Abutment and Precast Approach Slab shall be measured by the lump sum, complete, in-place, and complete.

534.22 Basis of Payment The accepted Precast Abutment and Precast Approach Slab shall be paid for at the respective Contract lump sum price. Payment shall be full compensation for all labor, equipment, professional services, manufacturing, and furnishing all materials in the precast units including stainless reinforcing steel, galvanized voids, and related materials and work. Related materials and work includes, but is not limited to, erecting the precast units, dowels, mechanical couplers, optional shear keys, grout ports, voids, grouting, shims or leveling devices, void closure pour concrete, and concrete admixtures used. Section 502 pay adjustments for quality level shall not be made for precast concrete, unless the Contractor fabricates the units.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
534.76	Precast Abutment	Lump Sum
534.7601	Precast Approach Slab	Lump Sum

SPECIAL PROVISION
SECTION 603
PIPE CULVERTS AND STORM DRAINS

This section is amended by the addition of the following:

Basis of Payment.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
603.155	12" Reinforced Concrete Pipe, Class III	Linear Foot
603.175	18" Reinforced Concrete Pipe, Class III	Linear Foot
603.195	24" Reinforced Concrete Pipe, Class III	Linear Foot

SPECIAL PROVISION
SECTION 604
MANHOLES AND CATCH BASINS
(Special Catch Basin)

This Section is amended by addition of the following:

Description: This work shall consist of constructing a special catch basin at Station 5+90.70, 14.87' LT in accordance with the requirements of Section 604 of the Standard Specification and the Standard Details as applicable. Structure is to act as a junction structure between the proposed 15" and 18" Underdrain and existing 12" pipe.

Materials: The special catch basin shall consist of constructing a rectangular structure, 10' x 4' interior dimensions to accept an existing 12" pipe and proposed 15" and 18" underdrain. Special catch basin shall include Type A Catch Basin frame and cascading grate with concrete flat top in accordance with Section 604 of the Standard Specifications.

Submittals: The Contractor shall submit to the Resident a proposed method of configuration and construction of the special Catch Basin for approval prior to fabrication and construction.

Method of Measurement: The Department will measure the quantity of Special Catch basin by the each.

Basis of Payment: Special Catch Basin will be paid for at the contract unit price per each, complete in place and accepted. Payment shall be full compensation for furnishing and installing the catch basin, including all submittals necessary. Frames, grates and covers shall be considered part of the structure and no separate payment will be made.

Excavation and backfill will be considered incidental except as provided in Section 206 – Structural Excavation.

Basis of Payment.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
604.30	Special Catch Basin	Each

SPECIAL PROVISION
SECTION 604
MANHOLES, INLETS, AND CATCH BASINS
(Special Manholes)

604.06 Basis of Payment: This section shall be amended with the addition of the following:

<u>Pay Item</u>		<u>Pay Unit</u>
604.154	72" Manhole	Each
604.2521	60" Catch Basin A5-C	Each

Gardiner
WIN 18735.00
WIN 18736.10
WIN 22684.00
September 7, 2018

SPECIAL PROVISION
SECTION 604
MANHOLE, INLETS, AND CATCH BASINS
(Communications Manhole)

604.04 Altering, Adjusting, and Rebuilding Catch Basins and Manholes

This section is amended by addition of the following for this project:

Adjusting manholes to grade for payment under Section 604 will include adjustment to grade of risers and covers of communications manholes and vaults. The existing top assembly shall be removed, thoroughly cleaned, and reset to the new grade using approved clay brick and mortar.

604.06 Basis of Payment

This section is amended by addition of the following for this project:

Payment for the accepted quantity of adjustment to grade of the risers and covers of communications manholes and vaults will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
604.18 Adjusting Manhole or Catch Basin to Grade	Each

SPECIAL PROVISION
SECTION 604
MANHOLES, INLETS, AND CATCH BASINS
(Utility Vault)

Section 604 of the Standard Specifications is amended by the addition of the following:

Description: This work shall consist of installing utility vaults at locations shown on the Plans.

The proposed vaults shall be a standard precast with inside dimensions of 12'Lx6'Wx7'H. Unless otherwise shown on the Plans, the vaults behind each bridge abutment shall have plastic duct terminators installed in the ends. The vault near the Consolidated Communications Central Office shall have plastic duct terminators installed in the vault sides. See Plans for blackout requirements for the two vaults behind each bridge abutment.

Vault interior components similar to the attached INWESCO details shall be supplied and installed. 47-hole cable racking (Catalog No. 10A22), cable rack supports (Catalog No. 10A40), and corner cable rack supports (Catalog No. 10A50) shall be installed along both 12' long walls within each vault, as shown in the attached details. Twelve (12) 10" underground cable rack hooks (Catalog No. 10A37) shall be supplied for each vault with locking clips (Catalog No. 20B11).

Four (4) standard cable pulling eyes shall be installed in each vault, one at each wall.

Vaults shall be precast concrete, 2-piece construction with slab and adjacent wall sections monolithic. A 32" diameter manhole access opening and 12" square x 3" deep closed sump shall be provided.

Standard 8'-0" tall freestanding manhole ladders shall be supplied for each vault.

Consolidated Communications shall provide 30" diameter anti-skid manhole covers with frames for each vault, which will have an assembled height of 10". The Contractor shall install the manhole covers and frames, and adjust to finish grade with precast collar extension rings or brick and mortar as required.

This item shall also include reinforcing, forming, and placing Class A concrete around the conduit and blackout as shown in the Plans after the conduit has been raised to its permanent location within the vault.

Drawings: Prepare shop drawings in accordance with Standard Specification Section 105.7, Working Drawings. The Department and Consolidated Communications shall review the drawings in accordance with the applicable requirements of Section 105.7, Working Drawings.

Design Requirements The Contractor shall design the utility vaults in accordance with the AASHTO LRFD Bridge Design Specifications, latest edition. The HL-93 live load specified in the AASHTO LRFD Bridge Design Specifications shall be used for all limit states, except for

Strength I. The live load used for the Strength I limit state shall be the Maine Modified live load, which consists of the standard HL-93 Live Load with a 25 percent increase in the Design Truck only. (Wheel loads based on the Design Truck shall be increased 25 percent).

Materials

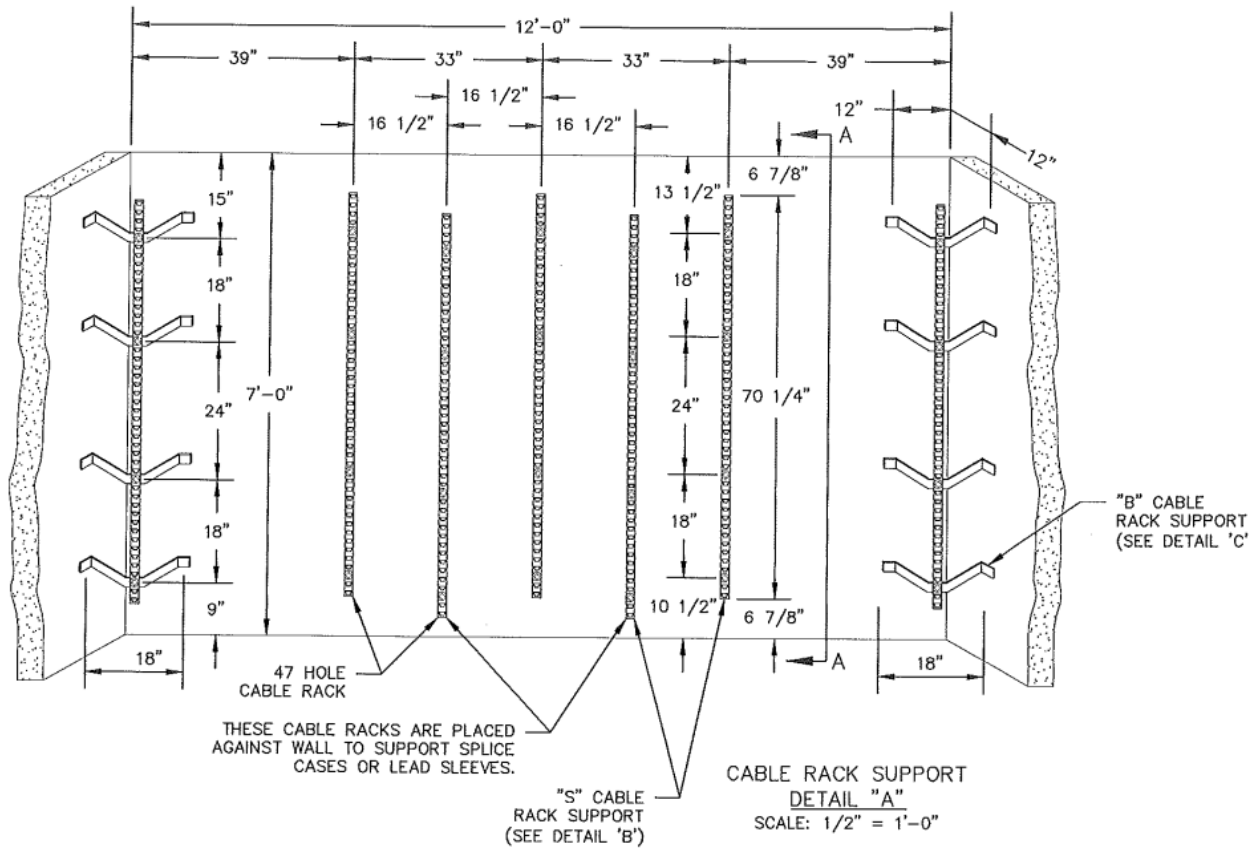
Utility construction work performed as part this federal-aid Project is subject to the requirements of Buy America in accordance with Federal Regulation 23 CFR 635.410 Section 1518. Specific requirements are presented in MaineDOT Standard Specification Section 100, Appendix A, Section 3.A., Buy America.

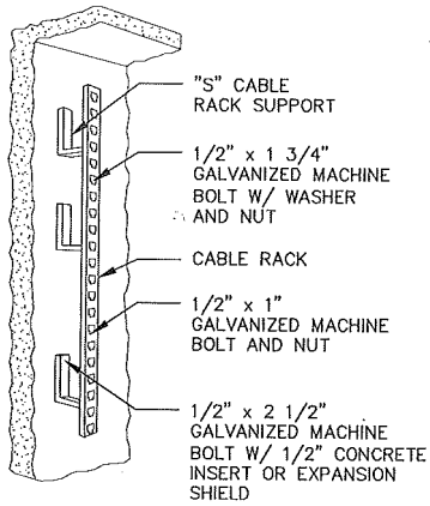
Method of Measurement

Utility Vaults will be measured by each unit, complete, in-place and accepted.

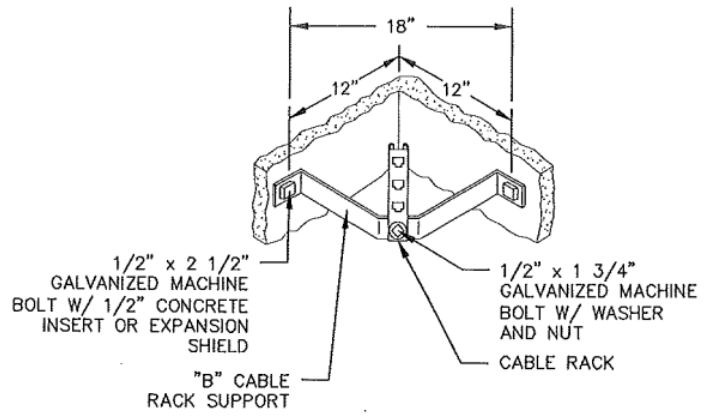
Basis of Payment: The Utility Vaults will be paid for at the Contract unit price per each in place and accepted. This payment shall be full compensation for designing, preparing shop drawings, furnishing and installing the utility vault including the precast vault sections, racking, ladders, excavation and backfill and any other material, labor, equipment, and incidentals necessary to complete the work.

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
604.158	Utility Vault	Each

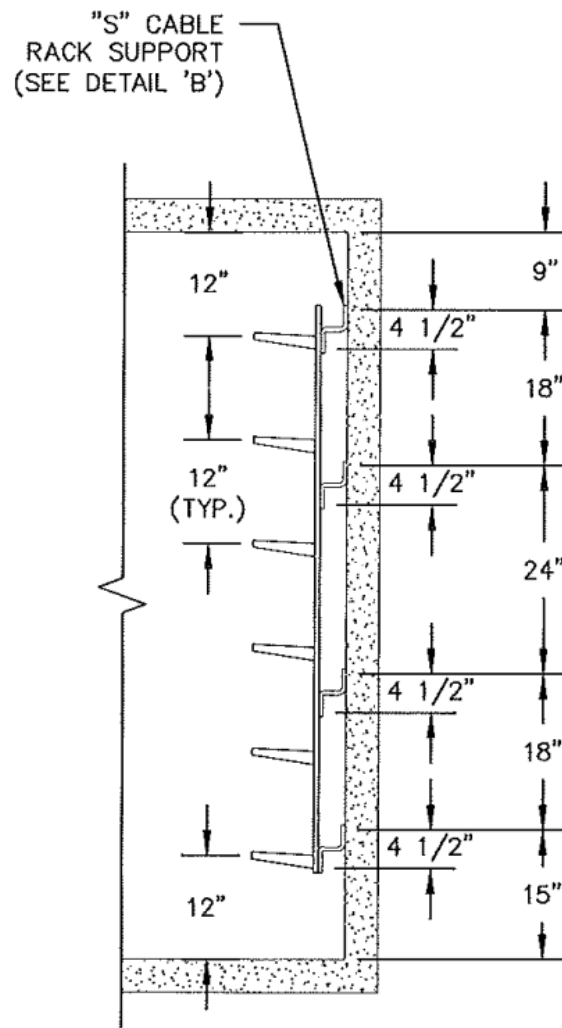




"S" CABLE RACK SUPPORT
DETAIL "B"
NOT TO SCALE



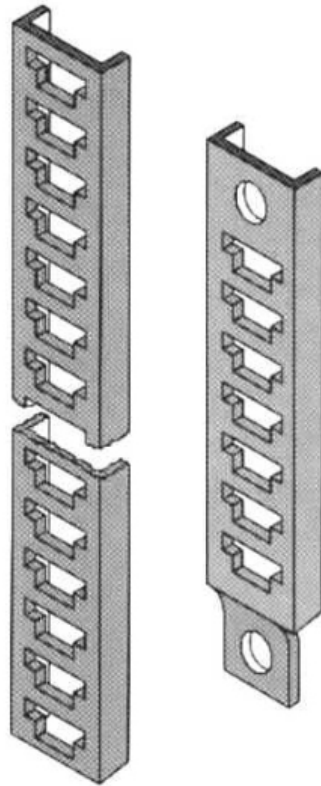
"B" CABLE RACK SUPPORT
DETAIL "C"
SCALE: 1" = 1'-0"



SECTION A-A
SCALE: 1/2" = 1'-0"

UNDERGROUND CABLE RACKS

Cable racks support cable runs in manholes and vaults.



FEATURES:

- HOT DIP GALVANIZED per ASTM A123 / A153
- Manufactured from 1-1/2 x 9/16 x 3/16-inch hot-rolled steel channel
- T-slots spaced at 1-1/2-inch
- 8, 14, and 18-hole racks available with mounting slots at each end that interlock into another rack
- Racks without mounting slots are mounted through T-slots
- Use cable hooks 10A35 through 10A39, 10C38, 10A60, 10B60, 10A61, and 10B61 with these racks

PLEASE CONTACT OUR FACTORY FOR THE FOLLOWING:

- Sizes not shown
- Stainless steel racks
- Plastic-coated racks hot-dip galvanized prior to coating

PRODUCT DIMENSIONS AND SPECIFICATIONS:

Common sizes are displayed.

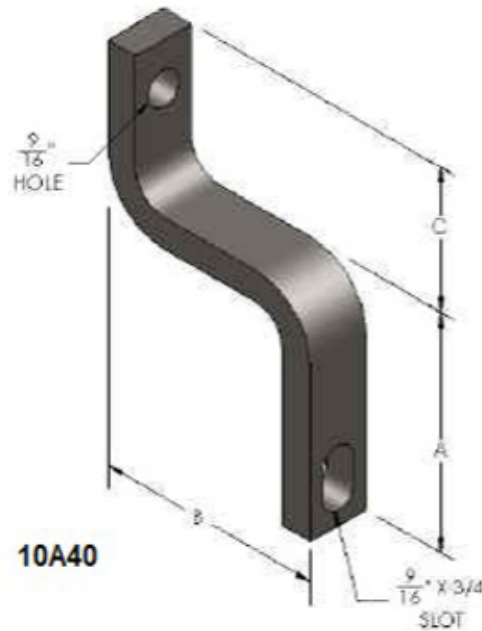
Contact a sales representative if the size is not shown or for specific product drawings.

Catalog No.	# of Support Holes	Overall Length	Mounting Hole Spacing	Appx. Shipping Wt. Lbs. per 100 Pcs.
10A05	8	15	13-1/2	139
10B05	8	11-3/4		119
10A07	12	17-3/4		179
10A08	14	24	22-1/2	230
10B08	14	20-3/4		210
10C08	15	22-1/4		225
10A09	16	23-3/4		240
10A11	18	30	28-1/2	290
10G11	18	26-3/4		270
10B11	19	28-1/4		285
10C11	20	29-3/4		300
10D11	21	31-1/4		316
10E11	22	32-3/4		331
10F11	23	34-1/4		346
10A12	24	35-3/4		361
10B12	25	37-1/4		376
10A13	27	40-1/4		407

10B13	28	41-3/4		422
10A14	32	47-3/4		482
10A15	35	52-1/4		528
10A16	37	55-1/4		558
10A17	39	58-1/4		588
10A18	40	59-3/4		603
10A19	43	64-1/4		649
10A22	47	70-1/4		710
10A24	51	76-1/4		770
10A25	54	80-3/4		816
10A28	64	95-3/4		967
10B28	65	97-1/4		982
10A30	69	103-1/4		1043
10A32	80	120		1210
10A34	160	240		2420

CABLE RACK SUPPORTS

These steel supports are used to mount cable racks away from the wall because of obstructions, limited space, or water seepage.



- HOT DIP GALVANIZED per ASTM A123 / A153

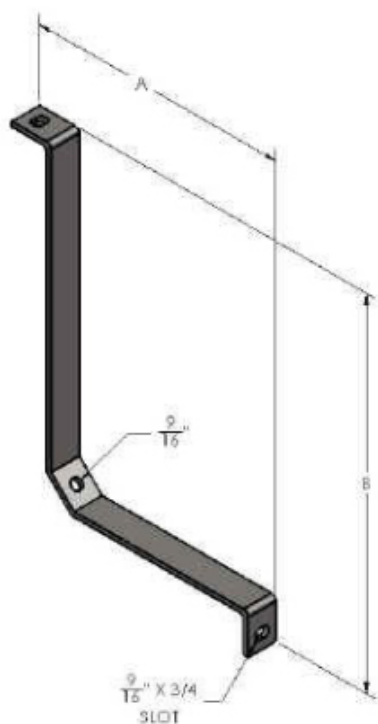
PRODUCT DIMENSIONS AND SPECIFICATIONS:

Common sizes are displayed.

Contact a sales representative if the size is not shown or for specific product drawings.

Catalog No.	Material Inches	Dimension - Inches			Appx. Shipping Wt. Lbs. per 100 Pcs.
		A	B	C	
10A40	1/2 X 1	3-3/4	3-5/8	2-1/4	110
10A44	1/2 X 1	5-1/4	6-9/16	2-3/8	175
10A46	1/2 X 1-1/4	5-1/4	6-9/16	2-3/8	230

CORNER CABLE RACK SUPPORTS



These supports are used to mount cable racks at corner locations where necessitated by minimum cable bend radii.

- HOT DIP GALVANIZED per ASTM A123 / A153
- Manufactured from 1/4 x 1-1/2-inch steel

PRODUCT DIMENSIONS AND SPECIFICATIONS:

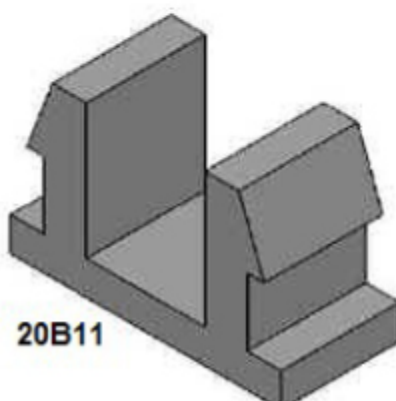
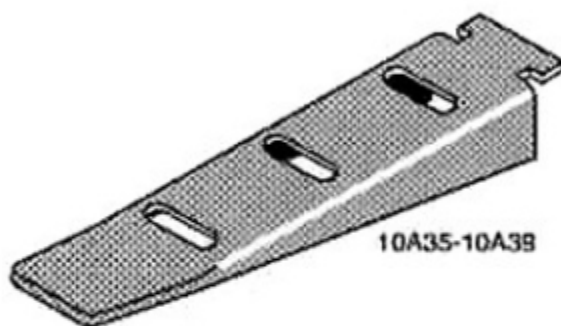
Common sizes are displayed.

Contact a sales representative if the size is not shown or for specific product drawings.

Catalog No.	Dimension - Inches		Appx. Shipping Wt. Lbs. per 100 Pcs.
	A	B	
10A50	12	12	245
10A53	12-1/2	9-1/4	230
10A55	18	12	315
10A56	18	18	365

UNDERGROUND CABLE RACK HOOKS

Hooks fit in cable racks, the cable rests on these hooks.



FEATURES:

- Formed from 3/16-inch steel
- HOT DIP GALVANIZED per ASTM A123 / A153
- Smooth top surface to protect cables from damage
- Insulator 11A31 fits these hooks (see [Underground Cable Support Insulators](#))

PLEASE CONTACT OUR FACTORY FOR THE FOLLOWING:

- Stainless steel hooks
- Plastic-coated hooks hot-dip galvanized prior to coating

PRODUCT DIMENSIONS AND SPECIFICATIONS:

Common sizes are displayed.

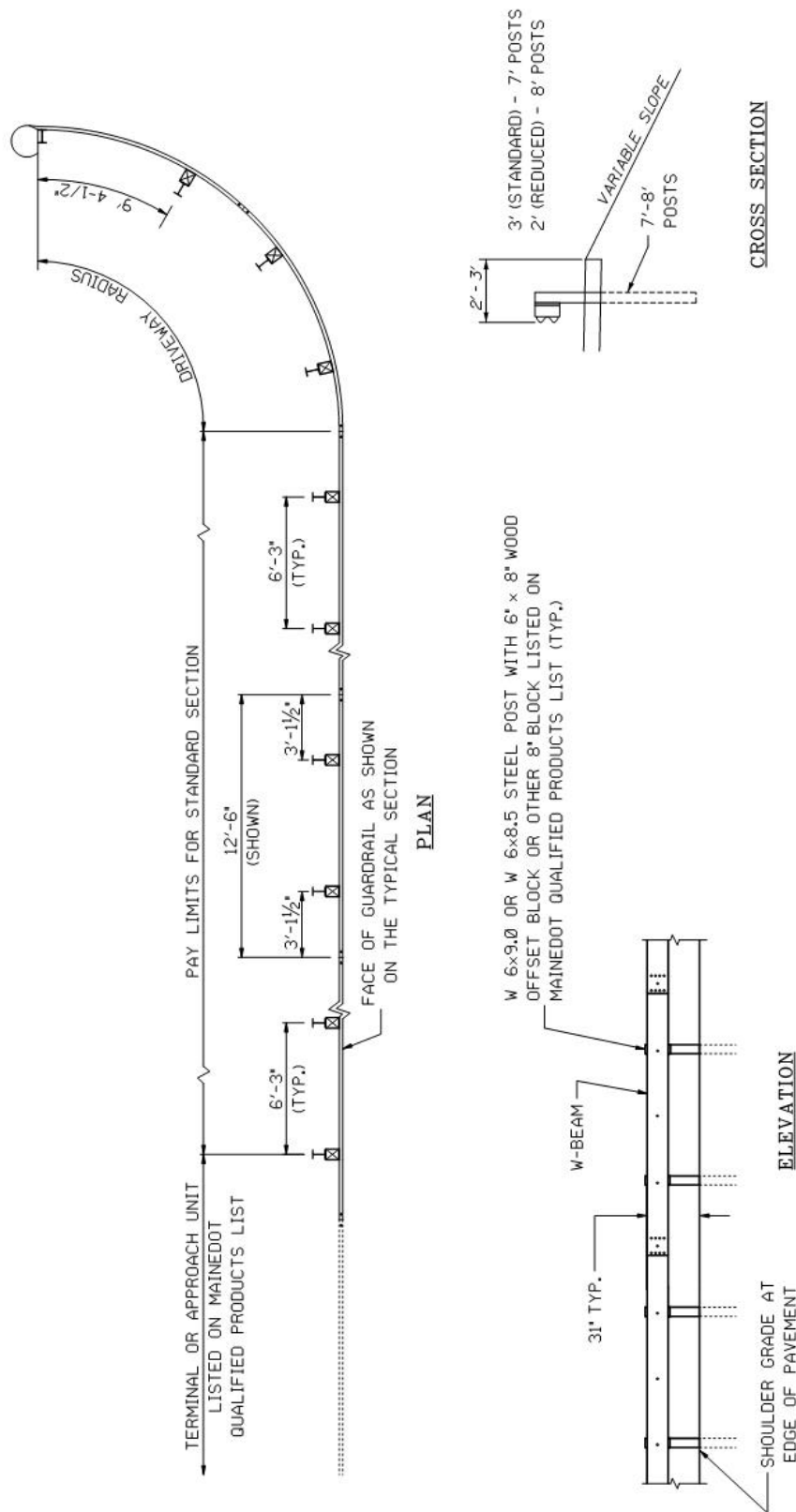
Contact a sales representative if the size is not shown or for specific product drawings.

Catalog No.	Extension From Face of Rack (Inches)	Appx. Shipping Wt. Lbs. per 100 Pcs.
10A35	4	53
10A36	7-1/2	90
10A37	10	125
10A38	14	190
10A39	18	270

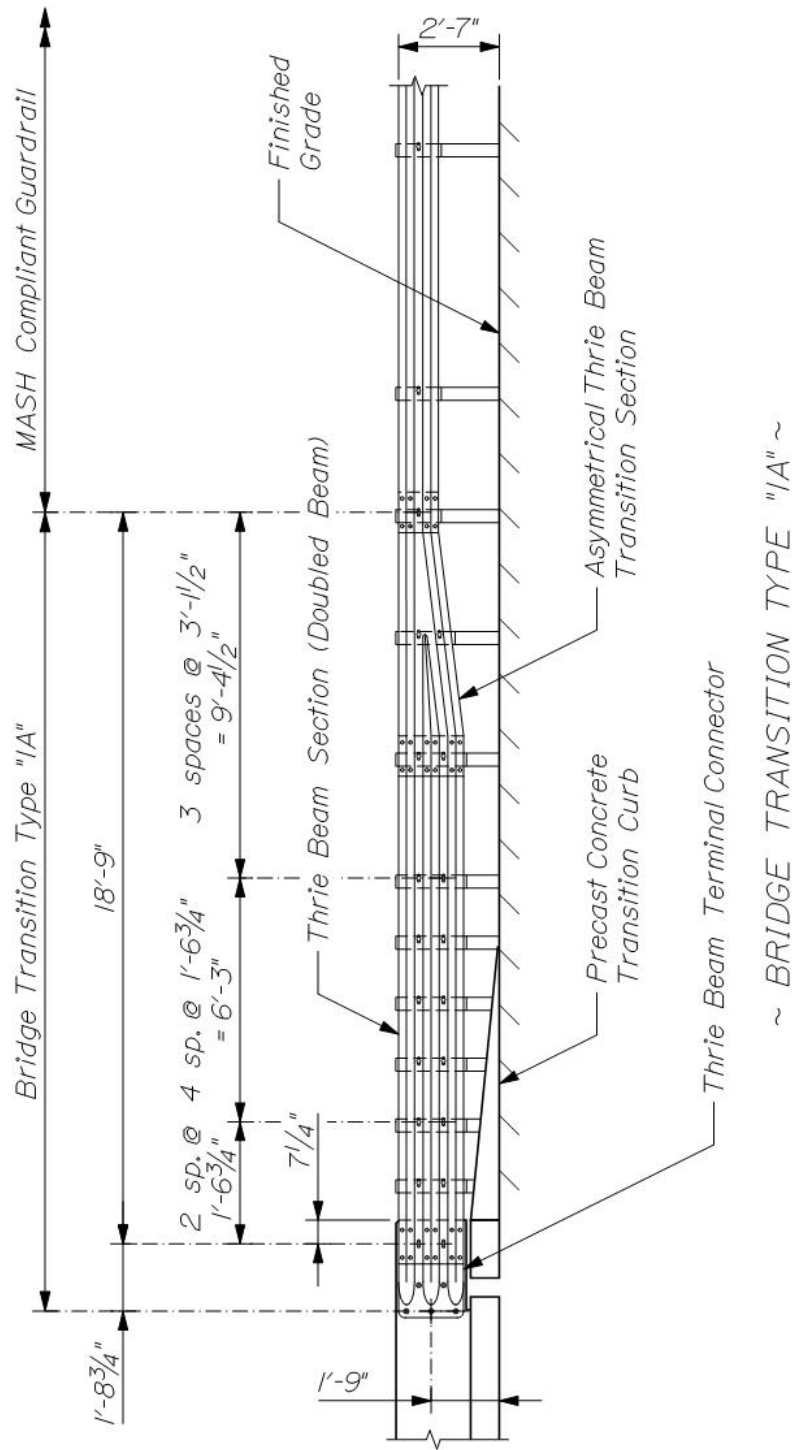
SPECIAL PROVISION
SECTION 606
GUARDRAIL

606.09 Basis of Payment: This section shall be amended with the addition of the following:

<u>Pay Item</u>	<u>Pay Unit</u>
606.1301 31" W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, Single Faced)	Linear Foot
606.1302 31" W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, Double Faced)	Linear Foot
606.1303 31" W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, 15' Radius and Less)	Linear Foot
606.1304 31" W-Beam Guardrail - Mid-Way Splice (Steel Post, 8" Offset Blocks, Over 15' Radius)	Linear Foot
606.1305 31" W-Beam Guardrail - Mid-Way Splice Flared Terminal (31" Height)	Each
606.1306 31" W-Beam Guardrail - Mid-Way Splice Tangent Terminal (31" Height)	Each
606.1307 Bridge Transition (Asymmetrical) – Type 1	Each
606.1308 Buried-in-Slope Guardrail End, Mid-Way Splice	Each



31" W-BEAM GUARDRAIL - MID-WAY SPLICE



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.

Suppl.
Std. Detail

BRIDGE TRANSITION - TYPE "IA"

606(2/A)

Sept. 6, 2017

SPECIAL PROVISION
SECTION 606
GUARDRAIL
(Anchorage Assembly)

Description This work shall consist of furnishing and installing anchorage assemblies in accordance with current Standard Specifications and as shown in the attached details at the locations indicated on the plans.

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

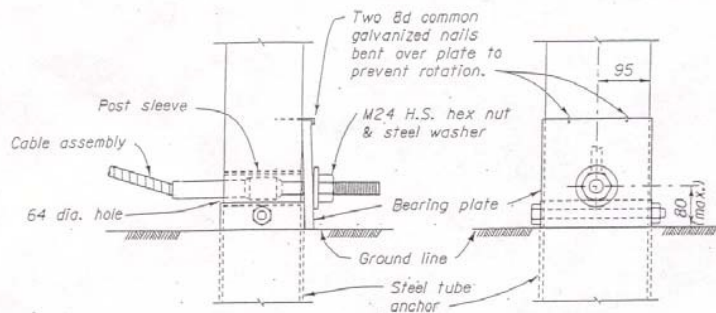
CONSTRUCTION REQUIREMENTS

Method of Measurement Anchorage assemblies will be measured by the unit (each) complete in place and will include all components shown on the attached details.

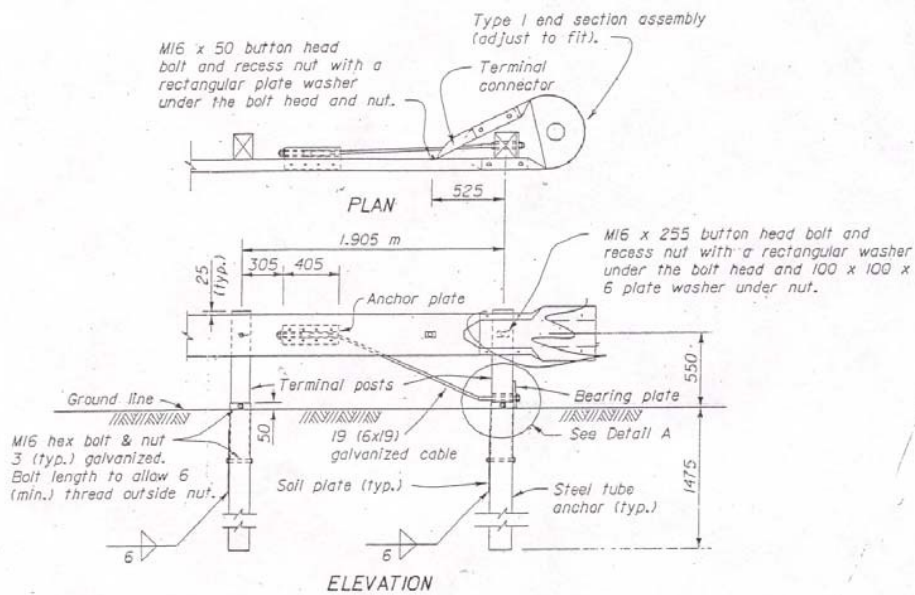
Basis of Payment The accepted quantity of anchorage assemblies will be paid for at the contract unit price per each, complete in place and will include all components shown on the attached details. Payment shall be full compensation for furnishing and installing all components as shown on the attached details and for incidentals necessary to complete the work.

Payment will be made under:

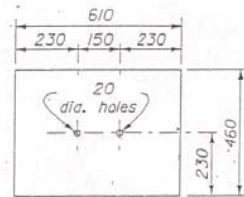
	<u>Pay Item</u>	<u>Pay Unit</u>
606.259	Anchorage Assembly	Each



DETAIL A



ANCHORAGE ASSEMBLY

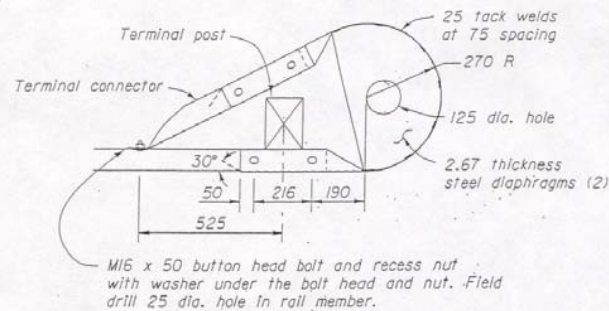


SOIL PLATE
(2 reqd.)

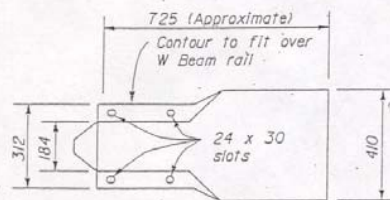
NOTES:

1. Unless otherwise shown, dimension are in millimeters.
2. Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.
3. Furnish hardware in metric sizes shown. Equivalent imperial sizes may be used when metric sizes are not available.

Anchorage Assembly

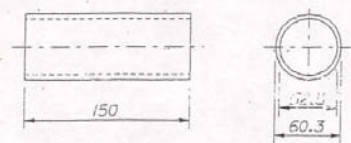
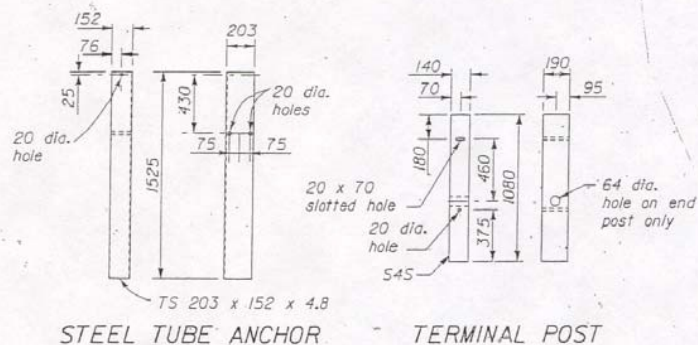


PLAN

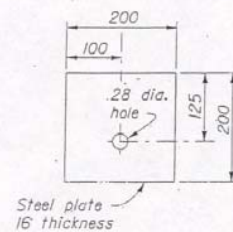


ELEVATION

TYPE I END SECTION ASSEMBLY



GALVANIZED STANDARD PIPE
POST SLEEVE



BEARING PLATE

Anchorage Assembly

SPECIAL PROVISION
Section 608
Brick Sidewalk with Bituminous Base

Section 608 of the Standard Specifications is amended for this project by addition of the following:

Description: This work shall consist of furnishing all materials and labor for Brick Sidewalk with Bituminous Base to conform to the plans and as directed by the Resident Engineer.

608.02 Materials: Brick for Brick Sidewalk with Bituminous Base shall meet requirements of Section 704.02 and ASTM C-902. Brick shall be Molded Paving Brick by Morin Brick of Auburn, Maine and shall be of comparable color, size and texture to the existing sidewalk paving bricks on Water Street in Gardiner. Prior to ordering, a final sample strap demonstrating full color range shall be submitted to the Resident Engineer for final approval.

608.411 Brick Sidewalk Construction: Subgrade shall be shaped parallel to the proposed surface of the walk and shall be thoroughly compacted. All depressions occurring shall be filled with a suitable material and again compacted until the surface is smooth and hard.

After the subgrade has been prepared, a foundation of Aggregate Subbase Course Gravel shall be placed to the specified compacted thickness.

A layer of hot mix asphalt (HMA) with minimum compacted thickness of two inches (2") shall be placed on the completed aggregate foundation course. The HMA surface shall be parallel to the proposed finish grade.

A sand-cement base course 1" thick made of thoroughly blended washed concrete sand mixed 6:1 with 1 part Portland Cement shall be placed on the HMA base course and thoroughly compacted to a hard, smooth surface parallel to the proposed finish slope and grade of the walk.

After the sand-cement base course has been installed, brick shall be placed in running bond pattern detailed with a single running edge course at the back side of the walkway, adjusted to full brick dimension as shown on the plan. The brick shall be set per pattern with a narrow hand set joint typical 1/16" width [min 1/32" - 3/32"]. Brick shall be saw cut to fit spaces requiring less than a whole brick; no cut shall be less than 2" in [two inches] length, and no open spaces will be allowed. Final patterns shall be running bond per plan or as directed by the Resident Engineer or MaineDOT Landscape Architect.

Individual bricks shall be hand placed with joints, and then set by hammering with a heavy rubber masonry mallet until the bricks reach a firm, unyielding, bedded set course. After this

tamping a sufficient amount of sand-cement mix shall be spread over the surface and thoroughly swept to fill all joints.

After filling the joints the brick surface shall be covered by plywood and mechanically compacted with a plate vibrator with rubber pad to ensure filling of all the joints. Care shall be taken to avoid raking out the joints during removal of excess sand.

A final application of sand only shall be applied and wet with clean, potable water and left on the surface for several days before final sweeping. At the completion of the project, a final sand/sweeping operation will be overseen by the Resident.

Basis of Payment: All items described herein are incidental to the following pay item:

<u>Pay Item</u>	<u>Pay Unit</u>
608.15 Brick Sidewalk with Bituminous Base	SY

SPECIAL PROVISION

SECTION 608

SIDEWALKS

(Concrete Sidewalk with Brick Border)

Subsection 608.01 Description is amended by the addition of the following:

Construct 4" reinforced concrete sidewalks, as shown on the plans.

Subsection 608.05 Method of Measurement is amended by the addition of the following:

Concrete Sidewalk With Brick Border will be measured by the square yard of finished surface, including areas below the brick pavers. No additional measurement will be made for overlapping areas or areas where the thickness is greater than 4".

Subsection 608.06 Basis of Payment is amended by the addition of the following:

Concrete Sidewalk With Brick Border will be paid for at the Contract Unit Price per square yard.

No additional payment will be made for areas where the thickness is greater than 4" including, but not limited to transitions underneath brick sidewalk areas. The additional concrete will be considered included in the contract unit price for reinforced concrete sidewalk.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
608.171	Concrete Sidewalk With Brick Border	Square Yard

SPECIAL PROVISION
SECTION 608
SIDEWALKS
(Curb Ramp Detectable Warning Field)

This section is amended by addition of the following:

Description This work shall consist of furnishing and installing curb ramp detectable warning plates with truncated domes in brick sidewalk in accordance with the requirements of Section 608 of the Standard Specifications and the Standard Details as applicable at the locations shown on the plans or as established by the Resident.

Materials The curb ramp detectable warning plates with truncated domes standard detail shall be modified for placement within the limits of brick sidewalk per the following amended standard detail.

Method of Measurement Measurement shall be in accordance with Section 608 of the Standard Specifications.

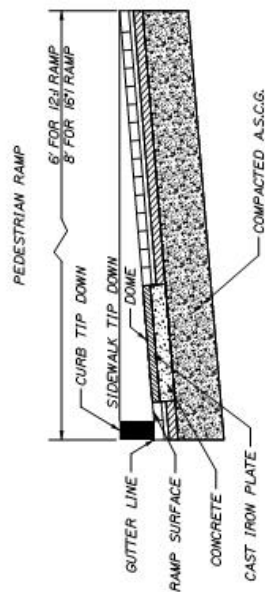
Basis of Payment: The accepted quantity of Curb Ramp Detectable Warning Field will be paid for at the contract unit price per square foot. Payment will include all materials and labor required to install the detectable warning plates, complete and in place.

Payment will be made under:

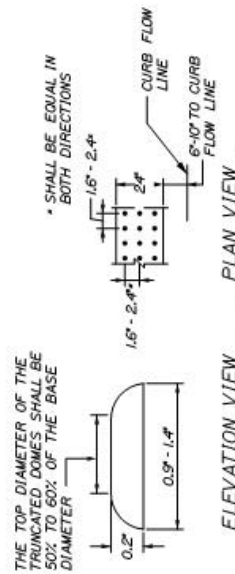
<u>Pay Item</u>	<u>Pay Unit</u>
608.26 Curb Ramp Detectable Warning Field	Square Foot

VIEWS AND DETAILS OF THE DETECTABLE WARNING
BRICK SIDEWALK LOCATIONS

(NOT TO SCALE)



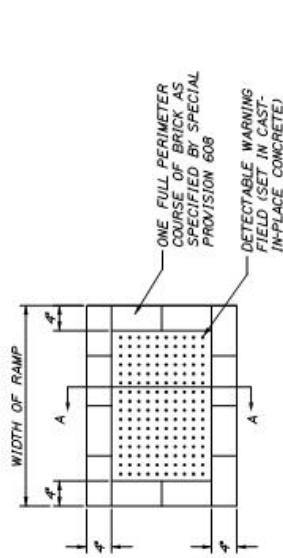
SIDE SECTION VIEW OF
DETECTABLE WARNING, CURB, AND GUTTER



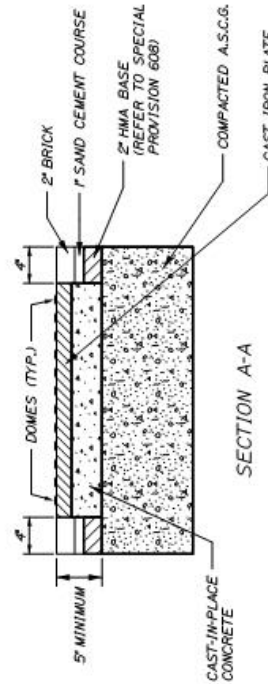
ELEVATION VIEW

PLAN VIEW

HOME AND DETECTABLE WARNING DETAILS



PLAN VIEW OF
DETECTABLE WARNING FIELD



NOTES:

1. ALL DETECTABLE WARNING AREAS SHALL START 6'-10" FROM THE FLOW LINE OF THE CURB, BE 2'4" IN DEPTH, AND COVER THE COMPLETE WIDTH OF THE RAMP AREA ONLY.
2. THE DETECTABLE WARNING PANEL SHALL HAVE ONE FULL COURSE OF BRICKS AROUND THE FULL PERIMETER OF THE PANEL. THIS PERIMETER SHALL BE SET TO CREATE A FLUSH SURFACE BETWEEN THE BRICK AND THE PANEL.

DETECTABLE WARNINGS
SPECIAL PROVISION 608

Gardiner
WINS 18735.00,
18736.00,
18736.10,
22684.00
September 4, 2018

SPECIAL PROVISION
SECTION 609
Curb

609.10 Basis of Payment: This section shall be amended with the addition of the following:

	<u>Pay Item</u>	<u>Pay Unit</u>
609.2341	Terminal Curb Type I – 4ft. - Circular	Each
609.2381	Terminal Curb Type I – 8ft. – Circular	Each

Gardiner
WINS 018735.00
018736.00
018736.10
September 17, 2018

SPECIAL PROVISION
SECTION 615
LOAM

Description

This work shall consist of furnishing and placing a 6-inch compost layer composed of:

33% Loam

33% Erosion Control Mix [619.1401]

33% Compost

for seeding, in reasonably close conformity with the thicknesses and locations called for on the Plans or as directed by the Resident for revegetation over riprap, and incidental trail landscaping.

Materials

- 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:
Green material consisting of chipped, shredded, or ground vegetation, or clean processed recycled wood products (MDEP Type IA, IB)
Biosolids (MDEP Type II)
Manure
Mixed food waste (MDEP Type 1B, IC)
- 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 regulate 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.

Placing Seeding Layer Mix

The seeding layer shall be thoroughly mixed and a sample approved by the Resident Engineer prior to spreading. The blanket layer shall be placed in the locations as shown in the Plans, by the contractor using conventional earthmoving equipment, distributed by hand using a shovel or by mechanical means or pneumatic blower. It shall be spread in a uniform 6" layer. The blanket layer shall be spread in a manner as to establish a loose, friable seed bed.

Basis of Payment

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
615.085 Loam Woodwaste Mulch Mix	Cubic Yard [CY]

SPECIAL PROVISIONS
SECTION 618.146
Seeding Hydromulch Medium

GENERAL - 1.01 SUMMARY

- A. This section specifies a generic hydraulically applied hydromulch Medium (HM) Flexterra FGM or equal: composed of long strand, thermally refined wood fibers, crimped, interlocking man-made fibers and performance-enhancing additives. The HM requires no curing period and upon application forms an intimate bond with the soil surface to create a continuous, porous, absorbent and flexible erosion resistant blanket that allows for rapid germination and accelerated plant growth.
- B. Related Sections: Other Specification Sections, which directly relate to the work of this section include, but are not limited to follow:

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions. Include required substrate preparation, list of material and application rate.

1.03 DELIVERY, STORAGE AND HANDLING

- A. Deliver material 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, from weather, excessive temperatures and construction operations.

PRODUCT – 2.01 MATERIALS

- A. Hydromulch Medium shall be and conform to the follow property values when uniformly applied at a rate of 3500 pounds per acre (80 -100 lb per unit).

	TEST METHOD	ENGLISH	SI
PHYSICAL			
Mass Per Unit Area	ASTM D6566 ¹	11.5 oz/yd ²	390 g/m ²
Thickness	ASTM D6525 ¹	.19 in	4.8 mm
% Ground Cover	ASTM D7367 ¹	99%	99%
Water Holding Capacity	ASTM D7367	1500%	1500%
Flexural Rigidity (wet)	ASTM D6575	0.138 oz-in	10,000 mg-cm
Cure Time	Observed	< 2 hr	< 2 hr
Color (fugitive dye)	Observed	Green	Green
	TEST METHOD	ENGLISH	SI
ENDURANCE			
Functional Longevity ²	Observed	≤ 18 months	≤ 18 months
PERFORMANCE			
Cover Factor ³ (6 in/hr event)	ASTM D7101 ¹	0.0066	0.0066
% Effectiveness ⁴	ASTM D7101 ¹	≥ 99%	≥ 99%
Cover Factor ³	Large Scale ⁵	≤ 0.01	≤ 0.01
% Effectiveness ⁴	Large Scale ⁵	≥ 99.0%	≥ 99.0%
Shear Stress	ASTM D7207 ¹	1 lb/ft ²	48 Pa

1. ASTM Test methods developed for Rolled Erosion Control Products and have been modified to accommodate hydraulically applied erosion control Products
2. Functional longevity is an estimate of product functionality and is dependent upon moisture, light, microbial and other environmental conditions.
3. Cover Factor is calculated as soil loss ratio of treated surface versus an untreated control surface
4. % Effectiveness = Once minus Cover Factor multiplied by 100%
5. Large scale testing conducted at Utah Water Research Laboratory, San Diego State University/ Soil Research laboratory, Texas Transportation Institute and TRI/Environment Inc. For specific testing information please contact profile technical service representative at 866-325-6262

EXECUTION

3.01 SUBSTRATE AND SEEDBED PREPARATION

- A. Examine substrates and conditions where materials will be applied. Apply protect to geotechnically stable slopes that have been designed to constructed to divert runoff away from that face of the slope. Do not proceed with installation until satisfactory conditions are established.
- B. Depending upon project sequencing and intended application, prepare seedbed in compliance with Section 1.01B.

3.02 INSTALLATION

- A. Strictly comply with Manufacturer's installation instructions and recommendations. Use approved hydro-spraying machines with fan type nozzle (50-degree tip) whenever possible to achieve best soil coverage. Apply HM from opposing directions to assure 100% soil surface coverage. Slope interruption devices or water diversion techniques are recommended when slope lengths exceed (75 ft) 23meters.
- B. Erosion Control and Re-vegetation : apply HM in a two-step process:
 Step One: Apply 50% of seed with a small amount of FGM for visual metering and install preliminary seed layer as directed.
 Step Two: Mix balance of seed and apply HM to a rate of 50lbs/125 gallons of water over freshly seeded surfaces. Confirm loading rate with equipment manufacturer. Do not leave seeded surfaces unprotected, especially if precipitation is imminent.
- C. Mixing: A mechanically agitated hydraulic-application machine is recommended:
 - i. Fill tank to middle of agitator shaft or tank about 1/3 full of water. Turn on pump to wet or purge lines. Begin agitating. Keep adding water slowly while adding the HM at a steady rate.
 - ii. Consult application and loading charts to determine number of bags to be added. Mix at a rate of 50 lb of HM per 125 gallons. Contact Equipment Manufacturer to confirm optimum mixing rates.
- D. Application Rate: The HM shall be installed to a rate of 3500 lb/acre.

Pay Item

Pay Unit

618.146 Seeding Hydromulch Medium

UNIT [1,000 Sq. Ft.]

SPECIAL PROVISIONS
SECTION 618
LANDSCAPE
(Special Seed Mix)

The following list of items provides a Special Provision Seed Mix to be used on the 6' wide Erosion Control Mulch/Compost/Loam of rip rap channel portions, and trail side landscape areas of this project. This Seed Mix is to be used in conjunction with a FGM Hydrogrowth Mulch Medium in lieu of Method 3 Seeding per **Standard Specifications**.

FLOODPLAIN RIPARIAN Custom Floodplain/Riparian Mix

- 0.200 *Panicum* Deertongue, 'Tioga'
- 0.170 *Elymus Virginiana* Wildrye
- 0.160 *Sorghastrum nutans* Indiangrass
- 0.100 *Andropogon scoparius* Big Bluestem, 'Niagara'
- 0.060 *Panicum virgatum* Switchgrass, 'Shelter'
- 0.040 *Calamagrostis Canadensis* Canada Bluejoint
- 0.030 *Carex vulvoides* Fox Sedge
- 0.030 *Carex scoparius* Blunt Broom Sedge
- 0.010 *Carex lupinus* Hop Sedge
- 0.030 *Rudbeckia hirta* Blackeyed Susan
- 0.025 *Asclepias incarnata* Swamp Milkweed
- 0.010 *Eupatorium perfoliatum* Boneset
- 0.010 *Eupatorium maculatum* Spotted Joe Pye Weed
- 0.020 *Juncus effuses* Soft Rush
- 0.020 *Juncus tenuifolia* Path Rush
- 0.015 *Aster Noviae-Angliae* New England Aster
- 0.010 *Lobelia siphilitica* Great Blue Lobelia
- 0.010 *Anemone canadensis* Canadian Anemone
- 0.010 *Helianthus helianthoides* Oxeye Sunflower
- 0.010 *Mimulus ringens* Square Stemmed Monkeyflower
- 0.010 *Zizia aurea* Golden Alexanders
- 0.010 *Iris versicolor* Blueflag
- 0.010 *Cimicifuga racemosa* Black Cohosh

This mix shall be applied by hydroseeding at the rate of 1 lb per unit (1,000 sq. ft.) with the incorporation of FGM Hydrogrowth Mulch Hydroseed Medium at the rate of 80-100 lb per unit[1,000 sq.ft./ unit per manufacturer's directions.

All seed shall be certified as to mixture, germination, purity, and live seed.

- 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 years crop unless recent tests by an approved testing agency demonstrate the approved requirements.

Pay Item

Pay Unit

618.143 Special Seed Mix

UNIT [1,000 sq.ft.]

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 three (3) projects where prefabricated Drainage Geocomposite system has been used.

B. Submit Letter of Certification that material meets or exceeds physical properties per the following table.

C. 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 Fabric Properties	Typical Value	Test Method
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 PROVISION
SECTION 620
GEOTEXTILES
(Synthetic Compressible Inclusion)

Subsection 620.01 Description is amended by the addition of the following:

This work shall consist of furnishing and installing Synthetic Compressible Inclusion (SCI) panels to the lines, grades, thicknesses, and locations specified on the Plans or as directed by the Resident.

Subsection 620.02 Materials is amended by the addition of the following:

Synthetic Compressible Inclusion (SCI) panels shall be furnished in 3-inch thicknesses as shown on the Plans. The SCI panels shall have a size tolerance of +1/8 inch for each dimension and meet the physical properties given below.

PHYSICAL PROPERTIES:

ASTM D1622 Density (Nominal)	1.0 pcf
ASTM D1621 Strength at 10% Deformation	<5 psi
ASTM D1623 Tensile Strength	16 psi
ASTM D732 Shear Strength	55 psi
ASTM D1621 Modulus of Elasticity	<100 psi

PHYSICAL STANDARDS

ASTM D3345-74 Insect Resistance (ants, termites etc.)

The SCI panels shall be produced by a manufacturer with an in place, third party certification, Quality Control program which is monitored by an independent testing organization.

The SCI panels shall be labeled with the manufacturer's name and product type.

Adhesive for installing SCI panels shall be supplied by the SCI panel manufacturer.

The Contractor shall submit two copies of the third party certified test report showing that the SCI panels meet the physical properties and standards listed above.

GeoTech TerraFlex manufactured by licensees of GeoTech Systems Corporation, 9912 Georgetown Pike, Suite D-2, Great Falls, Virginia 22066, (703) 759-0300, is an approved material.

The Department may randomly test SCI panels delivered to the job site. If any panel does not conform to the specified physical properties, the sampled shipment will be rejected.

Subsection 620.03 Placement is amended by the addition of the following:

Exercise care to prevent damage to the SCI panels during delivery, storage, and construction. Damaged panels shall not be used.

SCI panels shall be protected from: (1) Organic solvents such as acetone, benzene, and paint thinner; (2) Petroleum based solvents such as gasoline and diesel fuel; (3) Open flames; (4) Prolonged exposure to sunlight (no more than 90 days) during shipping and onsite storage.

Place 1-inch daubs of adhesive spaced at 18 inches across the top of each panel and press the panel against the vertical surface. Stagger panel joints. Trim the panels as necessary to maintain proper coverage throughout the panel height. Trim or cut the panels using a handsaw or an alternative cutting method approved by the Resident.

Subsection 620.09 Method of Measurement is amended by the addition of the following:

Synthetic compressible inclusion shall not be measured separately for payment but will be considered incidental to related contract items.

Subsection 620.10 Basis of Payment is amended by the addition of the following:

Synthetic compressible inclusion will not be paid for separately but will be considered incidental to related contract items.

SPECIAL PROVISIONS
SECTION 621
LANDSCAPE
(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* designee will be available to inspect plant materials and inspect planting at that time.

No Landscape Warranty Bond will be required, a two-year warrantee will be included incidental to planting.

PROJECT ITEM	PLANT MATERIAL	Unit	Quant.	Total
	WIN 018736.00 MAINE AVE. BRIDGE			
621.388	Evergreen Shrub Gr. A 12" – 15" Cont.	Ea.		24
	(Juniperus 'Bar Harbor') 'Bar Harbor' Juniper		12	
	(Juniperus 'Blueberry Delight')		12	
621. 5351	Deciduous Shrub Gr. A 15" – 18" Cont.			24
	(Spiraea alpinum 'Little Princess') Meadowsweet	Ea.	12	
	(Cornus sericea 'Isanti') Dwarf Red Twig Dogwood		12	
621.54	Deciduous Shrub Gr. A 18" – 24" Cont.	Ea.		12
	(Rosa rugosa) Beach Rose		12	
621.71	Herbaceous perennials 1 Gallon Cont. Group A	Ea.		12
	(Matteucia struthiopteris) Ostrich Fern		12	
621.713	Herbaceous perennials 1 Quart Cont.	Ea.		12
	(Mertensia virginica)		12	
	WIN 0187350.00 BRIDGE ST. BRIDGE			
621.71	Herbaceous perennials 1 Gallon Cont.	Ea.		60
	Coreopsis 'Moonbeam'		15	
	Nepeta 'Walker's Low'		15	
	Perovskia 'Little Spire'		15	
	Hemerocallis ' Happy Returns'		15	
	WIN 018736.10 MULTIUSE KENNEBEC TRAIL			
621.178	Small Deciduous Trees Gr. A 6' – 8' Cont.			6
	(Acer rubrum) Red Maple	Ea.	3	
	(Acer saccharinum) Silver Maple		3	
621.388	Evergreen Shrub Gr. A 12" – 15" Cont.	Ea.		24
	(Juniperus 'Bar Harbor') 'Bar Harbor' Juniper		12	

Gardiner
WINS 018735.00,
018736.00
018736.10

September 18, 2018

	(Juniperus 'Blueberry Delight')		12	
621.5351	Deciduous Shrub Gr. A 15" – 18" Cont.	Ea.		36
	(Spiraea alpinum 'Little Princess') Meadowsweet		12	
	(Cornus sericea 'Isanti') Dwarf Red Twig Dogwood		12	
	(Rubus x hybrid) Blackberry		12	
621.71	Herbaceous perennials 1 Gallon Cont.	Ea.		42
	(Monarda fistulosum) Beebalm		6	
	(Matteucia struthiopteris) Ostrich Fern		12	
	(Osmunda cinnamomea) Cinnamon Fern		12	
	(Thalictrum rochebrunianum) Meadow Rue		12	
621.713	Herbaceous perennials 1 Quart Cont.	Ea.		48
	(Erythronium americanum) Trout Lily		48	

SPECIAL PROVISION
SECTION 627
PAVEMENT MARKINGS
(Removeable Pavement Marking Tape)

Description

This work shall consist of furnishing, installing, maintaining and removing removable pavement marking tape in accordance with these specifications, the plans or as directed by the Resident. The tape can be white or yellow in color.

Construction

Removable pavement marking tape shall be applied at locations shown on the plans by mechanical or manual methods. Mechanical applications shall be suitable for all markings. Manual applications shall normally be used for transverse lines, symbols and legends. Follow manufacturer's recommendations for equipment operation and maintenance, and product applications.

Removable pavement marking tape shall be removed prior to placing subsequent pavement courses, but not until immediately prior to beginning paving operations.

The removable pavement marking tape shall be stored and applied as directed by the manufacturer. The Contractor shall provide a copy of the manufacturer's storage and application recommendations and the manufacturer's certificate of compliance to the Resident upon delivery of the material to the project. The certificate shall include the process, batch, or lot number(s) and corresponding date(s) of manufacture.

Materials

Materials shall be delivered to the project in original containers. Each container shall be clearly marked to indicate the color of the material, a specific description of the contents, and the process batch or lot numbers.

Material found to be discolored or damaged in any way or material manufactured more than one year prior to installation shall not be used.

Use removable pavement marking tape consisting of polymeric backing materials with a retroreflective surface. Ensure that the underside of the tape is pre-coated with a pressure sensitive adhesive to bond the tape to the roadway surface and is capable of withstanding traffic immediately after installation and for the duration of the intended service. Use a primer only if recommended by the manufacturer.

Provide tape that has a minimum skid resistance of 35 British petroleum number (BPN) when tested according to ASTM E 303. Lead based pigment in traffic tape shall not be used. Provide tape that conforms to the requirements specified in the table below:

Requirements for Temporary Pavement Tape		
Property	White	Yellow
Minimum Specific Luminance (mcd/sq foot/foot-candles) ASTM D 4061 ¹	500	300
Minimum Tensile Stress (psi) ² ASTM D 638	40	40
FED-STD-595B Color Chip No.	37778	33538
1. Use an entrance angle of 88.76° and an observation angle of 1.05°		
2. Perform tensile stress testing with a testing speed of 6 inches per minute.		

Use tape that is capable of being removed manually, intact, or in large pieces, without the use of solvents, burning, grinding, or blasting and without damage to the underlying surface.

Method of Measurement

Retroreflective temporary pavement marking tape will be paid for at the contract unit price per square foot. Payment shall be made in full compensation for furnishing, installing, maintaining, removal and incidentals necessary to complete the work.

<u>Pay Item</u>	<u>Pay Unit</u>
627.513 Temporary Pavement Marking Tape, Yellow or White	Square Foot

SPECIAL PROVISIONS
SECTION 634
HIGHWAY LIGHTING
(Ornamental Lighting)

Description. The Contractor shall furnish and install all materials and equipment required for complete, functioning and accepted ornamental light standards with light emitting diode luminaires, as shown on the plans and as directed.

General. Light standards with LED luminaires for highway lighting and sidewalk lighting on this project shall be as manufactured by Holophane Lighting and specified on the plans and in this special provision. Contact:

Acuity Brands Lighting, Inc.
Northeast Sales Support Team
Attention: Jim Bailey
West Gardiner, Maine 04345
Tel.: 1-207-582-5106
E-mail: JBailey@holophane.com

All materials and installation requirements for Ornamental Lighting shall comply with Section 634 of the Standard Specifications except as modified on the project plans or in this Special Provision.

Method of Measurement. Ornamental Lighting, satisfactorily installed and accepted, will be measured for payment by the single unit each. The under-bridge light will not be paid for directly but will be considered incidental to the Highway Lighting pay item.

Basis of Payment. The accepted quantity of Ornamental Lighting will be paid for at the contract unit price each. Payment for each shall be full compensation for the ornamental light standard, ornamental pole base, bracket arm, decorative arm fitter, weather-resistant (WR) receptacles, ornamental fixture housing with house side shield, light emitting diode luminaire fixture and incidentals necessary for installation of the pole and fixture. Conduit for power to Ornamental Lighting, foundations, and junction boxes will be paid separately under applicable Section 626 pay items of the contract. All other work and materials necessary to provide the highway and sidewalk lighting system shown on the plans, including the under-bridge light and junction box, will be paid by lump sum payment under Item 634.160 Highway Lighting.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
634.2101	Type A Lighting Standard	Each
634.2102	Type B Lighting Standard	Each
634.2103	Type C Lighting Standard	Each

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 634.09 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 634.09 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
(Flashing Sign Assembly)

This section is amended by addition of the following:

Description

The Contractor shall furnish and install Flashing Sign Assemblies at pedestrian crossings where shown on the plans. Their installation shall be as described in this special provision.

Materials

Signs for Flashing Sign Assemblies shall be sheet aluminum and meet requirements of Section 645 for Type II regulatory, warning and route marker assembly signage. Each signage assembly shall include a flashing 30"x30" W11-2 pedestrian crossing sign, static 24"x12" W16-7p diagonal arrow plaque, and static 9"x12" R10-25 pedestrian pushbutton signs. Sheeting used shall be 3MTM DG3 diamond grade prismatic sheeting or approved equal.

All wire used within each Flashing Sign Assembly for powering LED's in the signage shall be military grade MIL-W-16878D, Type D, vinyl nylon jacket, unless otherwise approved. Wiring shall be encapsulated inside a 1" x 0.375" aluminum extrusion secured to the sign. LED connectors shall be Deutsch DTM series, or approved equal. LED connectors shall conform to Ingress Protection IP-67 rating, be dustproof, and be waterproof in immersion to a depth of one meter for thirty minutes.

Eight (8) LEDs shall be incorporated in each flashing W11-2 sign, evenly spaced around the perimeter of the sign with one at each sign corner and others at the midpoints of each side. The flashing signage shall comply with illumination requirements of Section 2A.07 of the current edition of the Federal Highway Administration Manual on Uniform Traffic Control Devices.

LEDs shall be amber, high power 1 watt Luxeon® LEDs with a maximum light intensity of up to 550,000 millicandelas (mcd) with a viewing angle of 15 degrees. LEDs shall be capable of operating in a temperature range of -40°F to +176°F without failure or degradation of output. LEDs shall be visible for up to two miles at night and up to one mile in daylight. Each LED shall be sealed in a 0.875 inch diameter, heat dissipating plastic enclosure resistant to weather and vibration. All LED enclosures shall be mounted in a one inch hole and ultrasonically welded to the sign. LEDs shall be wired in strings to activate simultaneously and in parallel to allow other LEDs to continue flashing in the event of failure of an individual LED.

Each Flashing Sign Assembly shall be mounted on a 14 foot long 4 inch I.D. non-tapered Schedule 40 aluminum or galvanized steel pole with pole cap. Steel poles shall have a 0.75" minimum thickness galvanized ASTM A36 steel base plate circumferentially welded to the pole shaft. Anchor bolts for attachment of base plates to foundations shall be 0.75" x 17" (minimum) x 3" threaded. Four anchor bolts shall be provided for each support pole.

Where designated on the plans, poles for Flashing Sign Assemblies shall be installed with breakaway bases. Breakaway devices shall conform to the latest edition of “AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals” and NCHRP 350. Breakaway devices shall be designed such that anchor bolts will not bend upon vehicle impact. A frangible coupling such as Transpo “Pole-Safe” 5000 series with female anchor, Manitoba safety base with reaction plate, a frangible aluminum pedestal base, or other approved equal meeting requirements of Section 721 shall be used. Electrical conductors at the pole base shall have a fusible breakaway device that will disconnect all ungrounded conductors simultaneously.

Each support pole shall be installed with a square aluminum pedestal base with grounding lug.

Pedestrian pushbutton assemblies for activating flashing sign indications shall be installed on each Flashing Sign Assembly support pole for each crossing approach (if more than one direction), mounted at 42 inches above sidewalk grade and within 10 inches of the edge of sidewalk. Pushbuttons shall meet Americans with Disabilities Act vibrotactile technical requirements for accessible pedestrian signals (APS). The pushbutton assembly shall include a raised directional arrow indicating the direction of crossing. Audible locator and percussive crossing tones and a speech message are required. Speech message shall be “Bridge Street Turn Lane. Yellow lights are flashing for Bridge Street Turn Lane.” Speech message shall be repeated at least twice for each pushbutton activation.

Construction and Operation

Sign assemblies shall be installed with anti-vandal fasteners to mount components to flashing signs and signs to the support pole.

The light intensity of the amber LED 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 March 2014. All LED indications within a flashing sign shall flash simultaneously at a rate of more than 50 and less than 60 times per minute.

The LEDs in the W11-2 pedestrian crossing signage, normally dark, shall initiate operation only upon pedestrian pushbutton actuation, and shall cease operation at a predetermined time after the pedestrian actuation. The duration of operation of the flashing LEDs following each actuation shall be as noted on the plans. All Flashing Sign Assemblies associated with a given crosswalk shall, when activated, simultaneously commence operation of their flashing indications and shall cease operation simultaneously. Communication between the devices may be either by spread spectrum wireless or hardwired.

Static MUTCD R10-25 pedestrian instruction signage with the legend PUSH BUTTON TO TURN ON WARNING LIGHTS shall be mounted adjacent to or integral with each pedestrian pushbutton.

The Contractor shall provide a three-year unconditional warranty against all defects in material and workmanship for LED flashing signs.

Method of Measurement

All Flashing Sign Assemblies associated with a single crosswalk shall constitute a single installation. When a third, intermediate, Flashing Sign Assembly is provided on a splitter or refuge island between traffic lanes but operates concurrently with other flashing sign assemblies at each end of the same crosswalk without independent activation, the assembly shall be considered part of the total installation for that crosswalk and no additional payment will be made. Flashing Sign Assembly will be measured for payment by each installation complete in place.

Basis of Payment

Flashing Sign Assembly will be paid for at the contract unit price for each complete crosswalk installation, which payment will be full compensation for furnishing and installing all materials including, but not limited to, the LED-enhanced signage, flasher, timer, lockable NEMA controller cabinet if controls are not combined in a highway traffic signal cabinet, steel poles with base plate or aluminum poles, anchor bolts and pedestal base, breakaway devices, APS pedestrian push button assemblies, static crosswalk signage, radio communication devices and all appurtenances and incidentals required for a complete and functioning installation. Wiring and necessary incidental electrical work and materials will be included in the lump sum payment for Item 634.160 Highway Lighting. Foundations and conduit will be paid under applicable Section 626 pay items.

Payment will be made under:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
643.64	Flashing Sign Assembly	Each

SPECIAL PROVISION
SECTION 643
TRAFFIC SIGNALS
(Emergency Preemption)

This section is amended by addition of the following, to supplement notes on the project plans:

An optical preemption receiver is specified on the project plans to be installed on an existing traffic signal mast arm pole at the Route 201/24/27 intersection at the west end of the Veteran's Memorial Bridge over the Kennebec River for the Bridge Street approach. The emergency vehicle preemption at this intersection shall be installed and functional prior to the full bridge closures of WIN 18735.00 and WIN 18736.00.

Emergency vehicle signals shall be transmitted by optical emitters installed by others in emergency vehicles. The optical preemption receiver to be furnished and installed by the manufacturer shall be manufactured by Tomar Electronics, Inc. Prior to ordering, the Contractor shall confirm operational compatibility of the new receiver with existing Tomar preemption emitters of City of Gardiner emergency vehicles.

The emergency optical preemption receiver shall be attached to the mast arm with approved mast arm mount hardware manufactured by Tomar or other approved manufacturer. Preemption cable and conduit, as required, shall be installed to connect the new equipment to the existing traffic signal controller and preemption strobe.

Preemption signals shall be services on a priority basis with the Bridge Street approach receiver having first priority. In response to a preemption signal received by an optical receiver, the controller shall hold or advance to and hold the green indication for a minimum of ten seconds or until the preemption signal ceases. During a preemption call on an approach, a green ball for through and right-turning traffic and a green arrow shall be displayed for left-turning traffic on the approach for which the call was received. All other approaches shall have a red ball displayed for all movements. The confirmation strobe shall be illuminated whenever any emergency vehicle preemption green indication is on. The controller then shall time preemption phase clearance of 3.0 seconds yellow and 2.5 seconds all red and service subsequent emergency vehicle phases as necessary. The controller shall resume normal signal operation after servicing the last preemption call and preemption clearance. Minimum green and normal vehicle clearance shall be provided on phases that are terminated by preemption demand.

Settings in the existing traffic signal controller shall be modified by the Contractor as necessary to provide full functionality of the optical preemption equipment for the Bridge Street approach.

Basis of Payment

Furnishing and installation of optical preemption receivers, attachment hardware, cabling, and all labor, materials and equipment necessary to provide fully functioning emergency preemption for the Bridge Street approach will be incidental to payment under Item 643.80, except that any conduit required will be paid by the linear foot under applicable Section 626 pay items.

SPECIAL PROVISION
SECTION 643
TRAFFIC SIGNALS
(Rectangular Rapid Flashing Beacon)

This section is amended by addition of the following:

Description The Contractor shall furnish and install rectangular rapid flashing beacons including signage assemblies at pedestrian crossings where shown on the plans. Their installation shall be as described in this special provision.

Materials

Each rectangular rapid flashing beacon (RRFB) assembly shall consist of two rectangular-shaped yellow indications, 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.

Each RRFB signage assembly shall be mounted on a 14 foot long 4 inch I.D. non-tapered Schedule 40 aluminum or galvanized steel pole with pole cap. Steel poles shall have a 0.75" minimum thickness galvanized ASTM A36 steel base plate circumferentially welded to the pole shaft. Anchor bolts for attachment of base plates to foundations shall be 0.75" x 17" (minimum) x 3" threaded. Four anchor bolts shall be provided for each support pole.

Where designated on the plans, poles for RRFB signage assemblies shall be installed with breakaway bases. Breakaway devices shall conform to the latest edition of "AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" and NCHRP 350. Breakaway devices shall be designed such that anchor bolts will not bend upon vehicle impact. A frangible coupling such as Transpo "Pole-Safe" 5000 series with female anchor, Manitoba safety base with reaction plate, a frangible aluminum pedestal base, or other approved equal meeting requirements of Section 721 shall be used. Electrical conductors at the pole base shall have a fusible breakaway device that will disconnect all ungrounded conductors simultaneously.

Each support pole shall be installed with a square aluminum pedestal base with grounding lug.

Signs for RRFB signage assemblies shall be sheet aluminum and meet requirements of Section 645 for Type II regulatory, warning and route marker assembly signage. The signage assemblies shall include a W11-2 pedestrian crossing sign, W16-7p diagonal arrow plaque, and R10-25 pedestrian pushbutton signs.

Pedestrian pushbutton assemblies for activating RRFB indications shall be installed on each RRFB support pole for each crossing approach (if more than one direction), mounted at 42 inches above sidewalk grade and within 10 inches of the edge of sidewalk. Pushbuttons shall meet Americans with Disabilities Act vibrotactile technical requirements for accessible pedestrian signals (APS). The pushbutton assembly shall include a raised directional arrow indicating the direction of crossing. Audible locator and percussive crossing tones and a speech message are required. Speech message shall be "Bridge Street. Yellow lights are flashing for Bridge Street.", or, "Maine Avenue. Yellow lights are flashing for Maine Avenue.", as applicable. Speech message shall be repeated at least twice for each pushbutton activation.

Construction and Operation The two RRFB indications in an assembly shall be aligned horizontally, with the longer dimension horizontal and with a minimum space between the two indications of approximately seven inches (7"), measured from inside edge of one indication to inside edge of the other indication.

The outside edges of the RRFB indications, including any housing, shall not project beyond the outside edges of the W11-2 sign in the beacon signage assembly.

As a specific exception to 2009 MUTCD Section 4L.01 guidance, the RRFB indications shall be located between the bottom of the W11-2 crossing warning sign and the top of the supplemental W16-7p downward diagonal arrow plaque, rather than 12 inches above or below the sign assembly.

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). 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.

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 March 2014.

The RRFBs, normally dark, shall initiate operation only upon pedestrian pushbutton actuation, and shall cease operation at a predetermined time after the pedestrian actuation. The duration of operation of the RRFBs following each actuation shall be as noted on the plans. All RRFBs associated with a given crosswalk shall, when activated, simultaneously commence operation of their alternating rapid flashing indications and shall cease operation simultaneously. Communication between the devices may be either by spread spectrum wireless or hardwired.

MUTCD R10-25 pedestrian instruction signage with the legend "PUSH BUTTON TO TURN ON WARNING LIGHTS" shall be mounted adjacent to or integral with each pedestrian pushbutton.

Method of Measurement

All rectangular rapid flashing beacon and sign assemblies associated with a single crosswalk shall constitute a single installation. When a third, intermediate, beacon and sign assembly is provided on a splitter or refuge island between traffic lanes but operates concurrently with other flashing beacons at each end of the same crosswalk without independent activation, the assembly shall be considered part of the total installation for that crosswalk and no additional payment will be made. Rectangular Rapid Flashing Beacon will be measured for payment by each installation complete in place.

Basis of Payment

Rectangular Rapid Flashing Beacon will be paid for at the contract unit price for each complete crosswalk installation, which payment will be full compensation for furnishing and installing all materials including, but not limited to, the RRFB LED arrays, flasher, timer, lockable controller cabinet, aluminum poles or steel poles with base plate, anchor bolts and pedestal base, breakaway devices, APS pedestrian push button

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assemblies, crosswalk signage, radio communication devices and all appurtenances and incidentals required for a complete and functioning installation. Wiring and necessary incidental electrical work and materials will be included in the lump sum payment for Item 634.160 Highway Lighting. Foundations and conduit will be paid under applicable Section 626 pay items.

Payment will be made under:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
643.62	Rectangular Rapid Flashing Beacon	Each

SPECIAL PROVISION
SECTION 643
TRAFFIC SIGNALS

The provisions of Section 643 of the Standard Specifications shall apply with the following additions and modifications:

643.0211 Additional Materials Materials also shall meet the requirements in the following Special Provisions to Division 700 - Materials:

Traffic Signal Control System	718.13
Emergency Vehicle Preemption System	718.14

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 power service and meters, meter disconnects and enclosures, lighting bracket arm, controller, malfunction monitor units, vehicular and pedestrian signal heads with countdown timers, retroreflective backplates, cabinets, astro-brackets, APS pushbuttons, wiring, signal cable, LED lamps, luminaire and lighting cabinet, Tomar emergency vehicle preemption equipment, pole risers, and incidentals required for a completely functioning traffic signal installation, other than related labor, materials and equipment included in other pay items of the contract.

The cloud-based traffic signal control system will be incidental to payment under Item 643.80, which payment will be full compensation for furnishing and installing all materials, including, but not limited to supervisory cloud-based software installation, control cabinet switches for cloud based monitoring and adjustment, cell modem for communication, training, and all appurtenances and incidentals required for a complete functioning installation with remote access by MaineDOT. In addition, payment for signal system start-up, system loading and acceptance testing shall be considered incidental to Item 643.80.

Payment will be made under the following:

<u>Pay Item</u>	<u>Pay Unit</u>
643.80 Traffic Signals at: Bridge & Water Streets	Lump Sum

SPECIAL PROVISION
SECTION 645
HIGHWAY SIGNS
(Relocate Existing Sign Assembly and Post)

Description: This work shall consist of removing the existing A1 Diner sign and post, storing this sign and post during the Bridge Street Bridge Closure Period, and resetting this sign in its final location as shown in the Plans. This work shall also consist of furnishing and installing any necessary hardware to complete this work. All work shall conform to Standard Specification Section 645 – Highway Signing unless otherwise specified below.

Materials: Any required additional materials shall meet the requirements specified in Standard Specification Subsections 645.02-General, 645.021-Materials, and 645.023-Support Structures.

Construction: Construction requirements for the installation of the signs shall meet the requirements of Standard Specification Section 645.061- Installation of Type II Signs as appropriate. Welding shall be meet the requirements of Section 504. Welds shall be cleaned and field painted to match the color of the existing sign post.

Method of Measurement: The relocation of existing sign assembly and post shall be measured by each unit.

Basis of Payment: The accepted salvaged and relocated sign assembly and post will be paid for at the contract unit price each. Such price will be full compensation for removing, storing and resetting the sign, post, assembly hardware and all incidentals necessary to complete the work. The relocation, including the base plate and anchor rods, welding, field painting, furnishing and placing assembly hardware, and other incidentals, will not be paid for directly but will be considered incidental to the cost of this special work item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
645.1061 Relocate Existing Sign Assembly and Post	Each

SPECIAL PROVISION
SECTION 645
HIGHWAY SIGNING
(Special Signing)

This work shall consist of furnishing all materials and equipment necessary for the fabrication, finishing, and installation of the Interpretive Panel supports, bases, and mounting brackets, as well as the installation of the three (3) MaineDOT supplied Interpretive Panels, in accordance with these specifications, as shown on the Plans, and as directed by the Resident.

Materials:

- A. Mounting Bracket & Pipe Clamp. All steel shall be deburred and smooth to the touch, with no sharp or jagged edges and shall be color galvanized.
- B. Hardware. Security nut shall be Bryce Fastener Inc. 3/8" Thread diameter Penta-Nut nut or equal, and shall be stainless steel.

Fasteners for securing interpretive sign to backing plate to be supplied by Panel manufacturer (by others).

- C. Granite Posts. The granite posts shall be Swenson Granite Works "Woodbury" Granite Post or equal, tight grained and a salt and pepper light gray color. The granite posts shall be from one quarry source to ensure consistency of granite color and grain structure. Granite posts shall be set plumb, with tops of both posts level relative to each other and the finished grade. The Contractor shall submit a sample or photograph of the proposed granite for approval.
- D. Earthwork. Areas around the Interpretive Sign Panel Holder System disturbed during excavation and installation shall be seeded and mulched if the disturbed area is grass, or shall have a 3" uniform layer of erosion control mix if a non-grass area.

Finish: The mounting brackets and pipe clamps shall be color galvanized accordance with Section 506, Shop Applied Protective Coating – Steel. The finish color shall be Duncan "Rain Forest Green" (SW 4071, LRV 8%, Semi-Gloss) or similar; a sample and/or color chip to be used shall be provided to MaineDOT for approval prior to fabrication with the design intent of matching the green finish of the highway bridge railing. Hardware shall be field-painted after installation with 2-coats of color-matched paint from the same paint supplier.

Submittals. The Contractor shall submit for review: all product data and manufacturer specifications, and installation instructions for all items furnished.

Method of Measurement. Special Signing will be measured for payment by the Lump Sum, complete and in place.

Basis of Payment. The accepted Special Signing will be paid for at the contract Lump Sum price.

Payment will be full compensation for the furnishing of all materials, labor, and incidentals required for all fabrication, finishing, painting, installation of the Interpretive Panel Bases, earthwork, and the installation of the three (3) Interpretive Panels, complete and in place.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
645.51	Special Signing	Lump Sum

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22684.00
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SPECIAL PROVISION
SECTION 652
MAINTENANCE OF TRAFFIC

652.1 Description. The Contractor shall submit Traffic Control Plans for applicable lane shifts, lane closures, shoulder closures, sidewalk closures and roadway closures.

652.2 Signs. Advanced Signing information is shown on the Plans for the temporary lane shifts and the local and separate truck detour for the Bridge Closure Periods (roadway closures). Additional construction signing may be required.

652.3.3 Submittal of Traffic Control Plan. This Subsection is amended by the addition of the following:

The traffic control plan shall address the temporary pedestrian and East Coast Greenway (bikeway) detour routes required for the project. The traffic control plan shall address the maintenance of delivery truck, trash and recycling pickup, and emergency response access during the lane closures and Bridge Closure Periods (roadway closure) as required in Special Provision Section 105.

The Contractor, in cooperation with the Resident, shall conduct an emergency response coordination meeting with the local fire and police department prior to the Preconstruction Conference and preparation of the Traffic Control Plan.

The traffic control plan shall address the maintenance of access to the public parking along Arcade, on-street parking, and public access to the surrounding businesses as required in Special Provision Section 107.

The Contractor shall submit Traffic Control Plans for temporary lane closures to install the work zone traffic control.

652.3.3.f Notification Procedure. The Contractor shall provide a schedule of anticipated lane closures and bridge work zones to the Resident and provide a minimum notice of 72 hours of proposed changes to the lane closures and work zones. The Contractor shall provide a schedule of each full bridge closure period to the Resident a minimum of 30 days prior to its anticipated start. The Contractor shall provide a minimum notice of 10 days prior to any proposed changes to either full bridge closure period.

652.3.4 General. The following is added:

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; negative verbal or physical gestures; etc.).

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Channelization.

When directed by the Resident, drums or other channelization devices shall be placed in the closed lane at a maximum spacing of 2 x speed limit.

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.

Portable-Changeable Message Signs (PCMS). A total of 7 (seven) PCMS shall be used at the following locations during construction, final locations to be approved by the Resident.

- Route 201 southbound, north of the project
- Route 201 northbound, south of the project
- Route 126 eastbound, west of the project
- Route 24 northbound at intersection with Route 197 eastbound in Richmond
- Route 17 westbound just prior to intersection with Windsor Road in Windsor/Chelsea
- Two general locations along the Route 9/27 corridor on the east side of the Kennebec River or other locations as needed

The Contractor shall coordinate with the Resident to utilize existing PCMSs on I-95 and I-295 south of the Route 126 and 201 exits to divert northbound traffic headed to Togus to the I-95 Augusta exit. Other messaging to encourage diversion of other traffic shall not be utilized due to downtown Gardiner business concerns.

652.3.5 Traffic Control. Alternating one-way traffic shall be maintained with flaggers only. Traffic shall be maintained on pavement only. See Special Provision Section 105 – Intent of the Contract for details on the Bridge Closure Periods, Arcade closure details, and time restrictions on Bridge Street and Maine Avenue single lane closures. Maximum stopped delay at work zones in lane closures shall not exceed 5 minutes.

The WIN 22684.00 signalized intersection work areas shall maintain a minimum of one 11 foot lane in all directions utilizing flaggers as needed. Milling and paving, underground conduit placement, and removal and installation of the traffic signals shall be done at night with Traffic Officers.

Traffic officers shall also be used during the P.M. peak traffic hours of 4:00 P.M. to 6:00 P.M. during the Maine Avenue Bridge Closure Period at the signalized intersections on both ends of the Route 201/24/27 Kennebec River Bridge (Veteran's Bridge).

The temporary right hand turn lane from Bridge Street southbound onto Water Street westbound

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as shown in the Plans shall be in place and open to traffic prior to either Bridge Closure Period. The temporary intersection improvements at the Summer and Winter Street intersection and the temporary signals at the Winter and Water Street intersection shall be in place as shown in the Plans and open to traffic prior to the Bridge Street Bridge Closure Period. The existing traffic signals at the Water Street/Maine Avenue/Church Street intersection shall be uncovered and retimed as shown in the Plans prior to either Bridge Closure Period. Emergency vehicle preemption shall be in place as shown in the Plans at the Bridge Street and Water Street intersection and the Bridge Street approach to the Route 201/24/27 intersection (Veteran's Bridge) prior to the Maine Avenue Bridge Closure Period.

See Special Provision Section 105 – Convenience of the Public and Section 107 – Time for details on maintenance of public access to businesses and parking. Access to the rear of Water Street buildings and to parking in Arcade shall be maintained from either Maine Avenue or Water Street at all times. At a minimum, a single lane of alternating traffic flow with flaggers shall be provided. Minimum lane width for this access shall be 10 feet.

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:

<u>Manufacturer</u>	<u>Product</u>
Pexco Plaistow, New Hampshire 603-382-6533	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.

	<u>Pay Item</u>	<u>Pay Unit</u>
652.313	Temporary Pedestrian Barricade – ADA Compliant	Linear Foot

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:

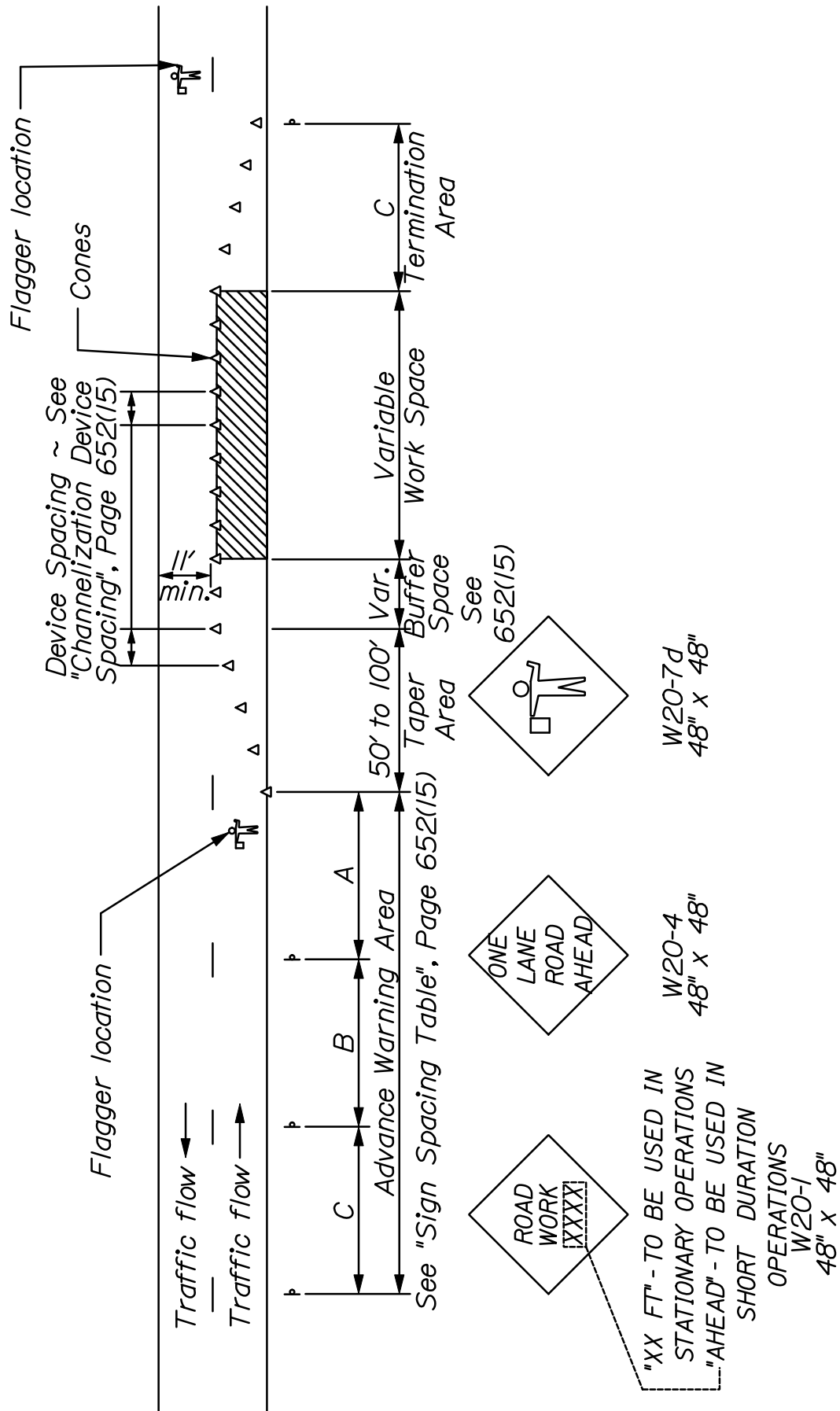
Be Prepared to Stop
Low Shoulder
Bump
Pavement Ends

The above lists of Approach signs and Work Area signs are representative of the contract requirements. Other sign legends may be required.

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. To encourage quality paving in warm-weather conditions, the length can be extended to 4,000 feet depending on the traffic impacts. 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.



~ TYPICAL APPLICATION: TWO -WAY, TWO LANE ROADWAY,
CLOSING ONE LANE USING FLAGGERS ~

* Formulas for L are as follows:

For speed limits of 40 mph or less:

$$L = \frac{WS^2}{60}$$

For speed limits of 45 mph or greater:

$$L = WS$$

* Formulas for L are as follows:

A minimum of 5 channelization devices shall be used in the taper.

TYPE OF TAPER	TAPER LENGTH (L)*
Merging Taper	at least L
Shifting Taper	at least 0.5 L
Shoulder Taper	at least 0.33 L
One-Lane, Two-Way Traffic Taper	100 ft maximum
Downstream Taper	100 ft per lane

CHANNELIZATION DEVICE SPACING

The spacing of channelization devices shall not exceed a distance in feet equal to 1.0 times the speed limit in mph when used for taper channelization, and a distance in feet of 2.0 times the speed limit in mph when used for tangent channelization.

GENERAL NOTES;

1. Final placement of signs and devices may be changed to fit field conditions as approved by the Resident.

2. Maintain same number of lanes for a shifting taper.

3. Shoulder taper allowed when a minimum of 10 feet can be open from centerline for lane.

SIGN SPACING TABLE			
Road Type	Distance Between Signs**		
	A	B	C
Urban 30 mph or less	100	100	100
Urban 35 mph and greater	350	350	350
Rural	500	500	500
Expressway / Urban Parkway	1000	1500	2640

**Distances are shown in feet.

SUGGESTED BUFFER ZONE LENGTHS

Speed (mph)	Length (feet)	Speed (mph)	Length (feet)
20	115	40	325
25	155	45	360
30	200	50	425
35	250	55	495

SPECIAL PROVISION
SECTION 718
TRAFFIC SIGNALS MATERIAL

The provisions of Section 718 of the Standard Specifications shall apply with the following additions and modifications:

718.13 Traffic Signal Control System The traffic signals shall meet the following minimum performance standards:

(a) General The system must satisfy the following basic requirements:

1. The control system must be able to communicate with Ethernet based traffic controllers and provide multiple signal grouping operation.
2. All communications between a cloud based system and the local controllers shall comply with NTCIP protocol.
3. Cloud based signal system software shall be configured to be able to communicate directly to NEMA TS2 Type 1 and Type 2 controllers. Remote interface units are unacceptable. The system shall have the capability to provide a continuous once per second or less monitoring of all controllers that may be connected to the system now or in the future.
4. Traffic signals must be able to be accessed remotely through a secure internet connection via web interface hardware and/or software.
5. Video detectors shall provide feedback of the video images for display via the cloud based interface. The display is to be both Microsoft Explorer hyperlink based and through compatible video detection software (Traficam PC or Traficon Configuration Tool as an example) to view live video detection returns.
6. The system shall be set up to remotely contact an individual or a group of users via email of user defined alarms. User defined alarms will be assigned during training (see (d) Training).

(b) Functional Requirements The system shall satisfy the following functional requirements:

- Timing plan data shall be stored locally at the intersection and selected in the time of day and manual modes based on local or remote commands.
- The Contractor shall produce computer graphic representations of the intersection(s) for the purposes of monitoring system status. The Contractor shall also load them into the central monitoring computer station as applicable. When instructed by the computer operator, the computer graphic maps shall be linked to on-street or virtual masters or local controller units, and allow for a dynamic representation of system status for the operator. Project plans may be used as the paper base for the maps.

- At a minimum, the maps shall contain the following information:

Intersection Maps

- Graphical representation of the intersection (scaled maps are not required)
- Intersection ID
- Municipality
- Street Names
- System Name
- North Arrow
- Lane Configuration
- Real Time Signal Display Status; Vehicle and Pedestrian
- Vehicle and System Detector Per Phase Call Status
- System Parameters Status (Cycle, Split, Offset)
- Intersection Operational Status (Flash, Coordinated, Free, On-line, Preemption)
- Controller Cabinet Location (static)
- Time/Date

System Map

- Graphical representation of the system showing all intersections within the Subsystem (scaled maps are not required)
- Municipality
- Street Names
- Subsystem Number, if applicable
- North Arrow
- Coordinated Phase Green at Each Location
- System Parameters Status (Cycle, Split, Offset)
- Intersection Operational Status (Flash, Coordinated, Free, On-line, Preemption)

(c) Technical Support Telephone technical support shall be provided free for the life of the system. Support must be available Monday through Friday, during normal business hours of the manufacturer. Local technical support must be available for a period of three months after the “System Startup” project phase is completed.

(d) Training The Contractor shall provide, at a minimum, two days of hands-on training class, which covers general operations and maintenance of the traffic signals. The training shall be designed for MaineDOT personnel and any other operators and technicians who may use and monitor the system. The Contractor should budget for up to six (6) attendees. Training documentation shall include operating manuals for all system equipment and components (see Section (e) Manuals/Documentation, for requirements). Documentation shall also be provided, explaining the operation of all cloud based system features. A quick start guide shall be provided which covers the

operations of the basic system features for occasional users. Hard present clear and organized instruction. The initial training shall consist minimally of the following:

- System operation, system performance analysis, and revision of system operating parameters based on the analysis.
- Explanation of the communication system and cloud based interface.
- How to enter commands.
- Operation of all devices.
- Generation and editing of intersection controllers.
- Uploading/downloading of intersection controller databases.
- Procedure for enabling dynamic displays.
- Basic troubleshooting procedures to isolate malfunctions.

A course syllabus for each proposed training day for approval by the Engineer at least seven (7) business days prior to the scheduled course. Each syllabus shall include a description of the topics covered, the level of detail to be covered in the class, and the number of teaching hours included in the class. The Supplier shall also supply a list of equipment, software, and manuals to be provided for the training at least five (5) business days prior to the scheduled course. All training classes shall make use of the system data collected during the Start-up Phase of the project.

(e) Manuals/Documentation Operating manuals shall be supplied for all equipment and components of the system. Hard copies of all training handouts and operational manuals shall also be supplied. Each set of operating manuals shall provide all necessary instructions for day-to-day use of the system by the end user. The manuals shall contain, as a minimum, the following information:

- Table of Contents
- System Overview (to include operation of all system features).
- Complete step-by-step instructions for performing each available function with sample screens, sample reports, and examples.
- Quick Start Guide with instructions for performing the basic and common functions.
- Updated manuals and system documentation must be provided as part of any system upgrade received by the City of Gardiner.

The controller cabinet shall contain a door sticker with laminated chart showing intersection layout and detection information. A print of the as-built intersection plan would be acceptable. The cabinet shall additionally be provided with operating manuals.

(f) Acceptance Testing It is expected that the completed signal system shall be fully functional at central control and at the remote locations for a period of thirty (30) consecutive days without malfunction. Minor malfunctions of inoperability not the fault of the Supplier, as judged by the Department, are not included in the 30-day

period. If the system fails to operate as intended by this specification or the Supplier's claims, the malfunction shall be corrected by the Supplier at its cost and a new 30-day testing period shall begin. This process shall continue until a completely operable system is demonstrated for a consecutive 30-day period.

Acceptance testing must demonstrate to the Department's reasonable satisfaction that the hardware and licensed software function in accordance with the specifications, requirements, through-puts, functionalities, performance criteria or other benefits stated in documentation, promotional materials, proposals, and/or demonstrations given to MaineDOT and the City of Gardiner.

- (g) System Maintenance The system must come with a minimum five (5) year software maintenance agreement to become effective when the proposed system has been accepted, in writing, by MaineDOT.

Software updates shall be provided free of charge for at least five (5) years from date of system acceptance. Software corrections or required modifications for proper system operation per these specifications shall be furnished to MaineDOT at no additional cost during the warranty period.

Hardware equipment shall be warranted for three years, effective when the installed and functional system has been accepted in writing by MaineDOT. Third party hardware and software licenses and warranties shall be passed to MaineDOT.

- (h) License Agreement The supplier of any traffic signal software and other associated software shall provide a software license to MaineDOT. If additional systems are installed and connected, any additional software licenses required shall be at the same cost as the remote licenses furnished for the initial project. Suppliers shall attach a copy of its standard Software License Agreement (SLA). The SLA, as negotiated, shall be made a part of the final equipment ordering contract. The licensing arrangement must address access to the system by agencies other than MaineDOT. The supplier shall carry out no work that will infringe on the licensing of third party hardware and software.

718.14 Emergency Vehicle Preemption System The emergency vehicle preemption systems shall be installed in the same cabinets as the controllers.

The emergency vehicle preemption control systems shall consist of a data-encoded phase selector to be installed within the traffic control cabinet. The unit will serve to validate, identify, classify, and record the signal from the optical detectors located on support structures at the intersections. Upon receiving a valid signal from the detectors, the phase selectors shall generate a preempt call to the controllers initiating preemption operations as shown on the plans. The phase selectors shall have full ID and logging capabilities and be rack-mounted plug-in four channel, dual priority devices. The phase selectors shall plug into shelf-mounted single card chassis. Programming the phase selectors shall be via a PC-based computer utilizing unit specific software. One copy of the software, shall be supplied and licensed to the City of Gardiner. A

hard copy of final programming data shall be left in the control cabinets. The Contractor shall supply a complete set of interface cables for phase selector to laptop connection in each controller cabinet. The phase selectors shall be connected to the Ethernet Switch in each cabinet, such that the phase selector logs and configuration can be remotely accessed through the communications system. The Contractor shall supply and install any required converters, such as device servers or other devices, to interface the phase selector to the Ethernet switch in each cabinet. The Contractor shall also supply any required cables.

The Contractor shall be responsible for the proper programming of the phase selector, orientation of the optical detectors, and all other work necessary to provide a complete and operating emergency vehicle preemption system. The Contractor may be required to field adjust the location of the optical detectors in the presence of the Resident and the City of Gardiner Fire Department to properly detect preemption calls from approaching vehicles. The emergency vehicle preemption installed under this project shall be functionally compatible with the proposed cloud based signal control system and allow remote access to the phase selectors.

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.

Method of Measurement:

Test Pits will be measured for payment by each.

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 the 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:

Pay Item	Pay Unit
803.01 Test Pits	Each

SPECIAL PROVISION
SECTION 841
BOLLARDS
(Collapsible)

Description: This work shall consist of furnishing and installing all materials and equipment necessary for the assembly, delivery, and installation for the collapsible bollards, in accordance with these specifications, as shown on the plans, and as directed by the Resident.

Collapsible bollards shall be Traffic Guard, LLC Double Post Collapsible Bollards or approved equal.

Materials: Each bollard shall be supplied with two padlocks. All padlocks shall be Master Lock commercial grade-all weather locks. All padlocks shall be installed and locked after installation and the keys provided to the Resident.

Construction Method: Bollards shall be located per the plans and installed with manufacturer's recommendations.

Method of Measurement: Collapsible bollards will be measured for payment by each unit satisfactorily constructed, installed, and accepted. Excavation and concrete will not be measured for payment but shall be incidental to the work under this item.

Basis of Payment: Collapsible bollards shall be paid for at the contract unit price per each, which shall be full compensation for all materials, labor, and incidentals required to complete the work.

Payment will be made under:

	<u>Pay Item</u>	<u>Pay Unit</u>
841.49	Bollard – Collapsible	Each

SPECIAL PROVISION
SECTION 845
STRUCTURAL STEEL UTILITY SUPPORT

Description: This work shall consist of furnishing and installing structural steel utility supports and related connection plates, denoted **Utility Support Type T2** on the Plans.

Materials: 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.

Structural steel utility supports shall conform to ASTM A709, Grade 50 and shall be hot dip galvanized in accordance with Section 506, Shop Applied Protective Coating - Steel. Structural Steel Utility Supports shall be fabricated in accordance with the requirements of Section 504, Structural Steel.

Installation: The Contractor shall install utility support angles at each location indicated on the Drawings.

Drawings: Prepare shop drawings in accordance with Section 105.7, Working Drawings. The Department and Consolidated Communications shall review the drawings in accordance with the applicable requirements of Section 105.7, Working Drawings.

Method of Measurement: Structural steel utility supports properly placed and accepted shall be measured for payment by the lump sum.

Basis of Payment: The accepted quantity of Structural Steel Utility Support for the bridge crossing shall be full compensation for furnishing and installing structural steel supports and connection plates as shown on the Plans. Price shall include all equipment, tools, labor, and incidental materials related thereto. The permanent installation of the utility hangers and conduit from the temporary utility support system, described in Special Provision Section 524, Temporary Structural Support – Consolidated Communications, shall be performed by others.

Payment will be made under:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
845.10	Structural Steel Utility Support - Consolidated Communications	Lump Sum

SPECIAL PROVISION
SECTION 910
SPECIAL WORK
(Utility Conduit – Consolidated Communications– Approaches Only)

Description: This item shall consist of all Consolidated Communications approach conduit work shown in the Plans, as referenced in Special Provision Section 104 - Utilities, and described herein. This special provision is limited to the work from the tie-in points identified by Consolidated Communications and shown on the Plans. Utility work on the bridge between the two vaults located behind the proposed bridge abutments is addressed separately.

The bridge approach work shall consist of furnishing and installing all materials and labor for the installation of twelve (12) 4-inch conduits, all trenching and backfilling, sand bedding, concrete encasement, conduit sweeps, mule tape, tracer wire, warning tape, vault connections, and all associated hardware and incidentals related to these items necessary to complete the work.

The work shall consist of removing abandoned conduits to a distance of 5 feet behind the existing bridge abutments. The abandoned conduits shall be plugged behind the abutments and within the Consolidated Communications manhole at STA 70+78.35, 27.25 feet right.

Required Pre-Installation Meeting: Before beginning any utility installation work, a utility meeting shall be held with all utilities, the MaineDOT Resident, and the MaineDOT Utility Coordinator.

Materials: 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.

The Contractor shall be responsible for the furnishing and fabrication of all material and associated hardware as shown in the Plans and described herein. 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 PVC type “C” telecommunication conduit.

All concrete for concrete encasement of conduit shall be Fill Class concrete in accordance with the applicable requirements of Section 502 – Structural Concrete. Concrete Fill shall be modified to have minimum compressive strength of 3,500 psi for Work specified herein.

Mule tapes (required by Consolidated Communications in lieu of pull strings) shall be rated for 5,000 pounds and extend through the entire run of each conduit to north and south tie-in points as shown on the Plans.

Construction Requirements:

Consolidated Communications Inspector (Charlie Roscoe, tel. 207-653-2622) is to be present while conduit work is in progress.

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, and Manufacture's Specifications, as well as any local ordinances that may apply unless otherwise noted on the Plans or in the Special Provisions.

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.

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 shall be 36 inches over the top of the concrete encasement. Concrete encasement shall be as shown on the Plans. After the trench has been excavated as specified, the bottom of the trench shall be prepared with 3 inches of sand bedding material. After placing the conduit and concrete encasement, sand shall be placed around the sides and over the top of the encasement. Backfill to a compacted depth of 6" above the top of the conduit shall be sand, free from rocks or hard lumps. The entire trench shall be backfilled with an approved material, placed in layers not exceeding six inches (6"), and thoroughly tamped.

All underground conduits shall not interfere with poles, guardrail posts, sign foundations or other objects. Conduits shall be made watertight by joining with solvent or in accordance with the manufacturer's specifications. If necessary, PVC conduit shall be bent (12 foot minimum radius) 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.

The Contractor shall install mule tape in all Consolidated Communications 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.

After the new conduit is installed and cables are relocated to the new duct bank, the old conduit shall be abandoned in place. The ends of the old conduit shall be capped 5' behind the

existing abutments, within the vault at the southeast corner of Frosty's (~Station 70+70, RT.), and at all other cutoff locations to prevent future deterioration.

Consolidated Communications' Central Office Tie-in: The Contractor shall coordinate with Consolidated Communications for conduit installation at the Central Office at the corner of Mechanic Street and Brunswick Avenue a minimum of 60 days ahead of the planned work. Consolidated Communications will core-drill through the basement wall and the Contractor shall install conduit projecting a minimum of 6" into the basement and install watertight caps. Consolidated Communications will then seal the basement around the conduit.

Method of Measurement

Special Work – Utility Conduit (Consolidated Communications - Approaches Only) will be measured for payment as one lump sum.

Basis of Payment: Payment for Special Work – Utility Conduit (Consolidated Communications - Approaches Only) shall be full compensation for all materials, equipment, labor, and hardware necessary to install the utility conduits and cap abandoned conduits. Payment for work shall include furnishing and installing PVC conduits and pull-line (mule tape) for each conduit, furnishing and installing the concrete encasement, required excavation and backfilling, paving, sidewalk and curb repair, and connections to new and existing vaults and through the Consolidated Communications Central Office basement wall.

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
910.301	Special Work – Utility Conduit (Consolidated Communications - Approaches Only)	Lump Sum

SPECIAL PROVISION
SECTION 910
SPECIAL WORK
(Skehan's Tax Sign Removal)

Description: This work shall consist of removing and disposing of Skehan's Tax business sign, in accordance with these specifications, as shown on the plans, and as directed by the Resident.

Schedule of Work: Skehan's Tax existing business sign shall be removed in the Bridge Street Bridge Pre-Closure Period prior to Consolidated Communication's underground duct bank work or other work that compromises its foundation. The Contractor shall notify the Resident a minimum of 45 days in advance of the planned existing sign removal. The Contractor shall have the final slope grading of Skehan's lawn (Sta. 74+50 Lt. to Sta. 74+90 Lt.) completed within 2 weeks of the sign removal and shall be complete by August 31, 2019. The Contractor shall provide the Resident with at least 2 week's notice of when the area is prepared for new sign installation by the abutter.

Method of Measurement. Skehan's Tax Sign Removal will be measured for payment by the Lump Sum once the work has been completed and the required notice has been provided to the abutter for installation of their new sign by others.

Basis of Payment. The accepted Skehan's Tax Sign Removal will be paid for at the contract Lump Sum price. Payment will be full compensation for the removal and disposal of Skehan's Tax business sign and foundation, protecting the existing electrical feed for reuse by the abutter, and all labor and incidentals.

Payment will be made under

<u>Pay Item</u>	<u>Pay Unit</u>
910.301 Special Work – Skehan's Tax Sign Removal	Lump Sum

COPY NO. _____

**MAINE AVENUE AND BRIDGE STREET BRIDGES
WATER MAIN REPLACEMENT**

**GARDINER WATER DISTRICT
GARDINER, MAINE**

**BIDDING AND CONTRACT
REQUIREMENTS AND SPECIFICATIONS**

SEPTEMBER 2018

13882A

**GARDINER WATER DISTRICT
GARDINER, MAINE
BIDDING AND CONTRACT REQUIREMENTS
AND SPECIFICATIONS
FOR
MAINE AVENUE AND BRIDGE STREET BRIDGES WATER MAIN
REPLACEMENT**

SEPTEMBER 2018

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END OF SECTION

SECTION 01010 SUMMARY OF WORK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Replacing the water main on the Bridge Street Bridge and Maine Avenue Bridge associated with the Maine Department of Transportation's replacement of the bridges, including replacement of buried main on each side of the two bridges.
 - 1. Construction of New 12-inch Water main using Pre-Insulated Ductile Iron Restrained Joint Pipe on the bridge decks. The work will also include:
 - a. Installation of buried mains on each side of the bridge
 - b. Connections to the existing buried mains on each side of the bridge
 - c. Water main hanger assemblies and steel utility supports on both bridges
 - d. Pre-Insulated heat traced water service to A-1 Diner building on Bridge Street bridge
 - e. Other appurtenances as shown on the Drawings and specified herein.
 - 2. Remove and/or relocate equipment as indicated on the Drawings.
- B. Removals, Relocations and Rearrangements
 - 1. Examine the existing site for the work of all trades which will influence the cost of the work under the bid. This work shall include removals, relocations and rearrangements which may interfere with, disturb or complicate the performance of the work under the bid involving systems, equipment and related service lines, which shall continue to be utilized as part of the finished project. The Contractor is responsible for all coordination in this regard.
 - 2. Provide in the bid a sufficient amount to include all removals, relocations, rearrangements and reconnections herein specified, necessary or required to provide approved operation and coordination of the combined new and existing systems and equipment.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

3.1 MAINTAIN EXISTING WORKS

- A. Existing Operations:
 - 1. Refer to construction sequence below. Uninterrupted service shall be provided at all times during construction except for planned shutdown events.
- B. Minimize Interference
 - 1. The Contractor shall at all times conduct his operations so as to interfere as little as possible with existing works. The Contractor shall develop a program, in cooperation with the Owner, Water District Engineer, MDOT, water customers and interested officials, which shall provide for the construction and putting

into service of the new works in the most orderly manner possible. This program shall be adhered to except as deviations therefrom are expressly permitted.

3.2 CONSTRUCTION SEQUENCE

A. Maine Avenue Bridge Construction

1. Prior to full closure and bridge deck reconstruction, install new shutoff valves in pre-closure, including new t-connection to the Arcade feed for the existing hydrant. Coordinate with Gardiner Feed, Harvey's/Tiger Town, The Depot, Emergency Response team, and the sewer department regarding the limited service outage this work will require. Duration of outage will be less than one day.
2. Prior to full closure and bridge deck reconstruction, disconnect and remove water main on bridge. This will require a shutdown of the existing water main.
3. Prior to full closure, install new water main pipe and hangers on Stantec's prefabricated beam and deck units.
4. During construction of abutment, install 24" casing pipe through the abutment on each end of the bridge.
5. During post-closure, install new 12" water to interconnection points on either end of bridge and install new 12" and 6" gate valve on south end of bridge.
6. Following the installation of all water mains, complete testing procedure as outlined in the specifications.

B. Bridge Street Bridge Construction

1. Prior to full closure and the disconnection of water main on bridge, install stub for the future A1 Diner service on the south end of the bridge and install new 12" gate valve on water main south of the new interconnection. Temporarily relocate the Diner's existing 1" service on south end of the bridge to the face of the existing abutment to clear it of the foundation work area.
2. Prior to closure and bridge deck reconstruction, disconnect and remove water main on bridge. This will require a shutdown of the existing water main.
3. During construction of abutment, install 24" casing pipe through the abutment on each end of the bridge. Install sleeve for A1 Diner service on south end of bridge.
4. During Pre-closure, the new 12" water main and hangers will be placed on the new bridge superstructure during traditional beam and concrete deck construction on the downstream temporary foundations.
5. During full closure and bridge deck replacement, the new superstructure and water main will be laterally slid over onto the new bridge abutments. Additionally, install new underground 12" water main to interconnection points on south end of bridge and to existing 12" gate valve on north end of the bridge. Install new underground service connection for the A1 Diner.
6. Following the installation of all water mains, complete testing procedure as outlined in the specifications.

- #### C.
- The Contractor shall submit to the Water District Engineer for review and acceptance a complete schedule of his proposed sequence of construction operations prior to commencing any work. This schedule shall include the Contractor's plans for doing the work.

- D. The Contractor must submit to the Water District Engineer a written request to deviate from the above sequences, provided he can demonstrate to the Water District Engineer that the continuity and degree of treatment will not be adversely affected.

END OF SECTION

SECTION 01150

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. For lump sum items, payment shall be made to the Contractor in accordance with an accepted Progress Schedule and Schedule of Values on the basis of actual work completed.
- B. For unit-price items, payment shall be based on the actual amount of work accepted and for the actual amount of materials in place, as shown by the final measurements.
 - 1. All units of measurement shall be standard United States convention as applied to the specific items of work by tradition and as interpreted by the Water District Engineer.
 - 2. At the end of each day's work, the Contractor's Superintendent or other authorized representative of the Contractor shall meet with the Utilities' Project Representative and determine the quantities of unit price work accomplished and/or completed during the work day.
 - 3. The Utilities' Project Representative will then prepare two "Daily Progress Reports" which shall be signed by both the Utilities' Project Representative and Contractor's Representative.
 - 4. Once each month the Utilities' Project Representative will prepare two "Monthly Progress Summation" forms from the month's accumulation of "Daily Progress Reports" which shall also be signed by both the Utilities' Project Representative and Contractor's Representative.
 - 5. These completed forms will provide the basis of the Water District Engineer's monthly quantity estimate upon which payment will be made. Items not appearing on both the Daily Progress Reports and Monthly Progress Summation will not be included for payment. Items appearing on forms not properly signed by the Contractor will not be included for payment.
 - 6. After the work is completed and before final payment is made there for, the Water District Engineer will make final measurements to determine the quantities of various items of work accepted as the basis for final settlement.
 - 7. As administrator to the construction contract, MaineDOT's on-site Resident shall be responsible for authorizing all payments relating to the Utility Work, issuing all directives to the Project's Contractor and making the final determination in the event of any disagreements. The Utilities' Project Representative shall provide to MaineDOT's Resident all the Daily Progress Reports of completed and accepted utility work, as well as Monthly Progress Summation Reports. The reports will be used by MaineDOT to authorize payment to the project Contractor.

1.2 SCOPE OF PAYMENT

- A. Payments to the Contractor will be made for the actual quantities of the Contract items performed and accepted in accordance with the Contract Documents. Upon completion of the construction, if these actual quantities show either an increase or decrease from the quantities given in the Bid Form, the Contract unit prices will still prevail as per MaineDOT Standard Specifications.
- B. The Contractor shall accept compensation, as herein provided, in full payment for furnishing all materials, labor, tools, equipment, and incidentals necessary to the completed work and for performing all work contemplated and embraced by the Contract; also for all loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work and until its final acceptance by the Water District Engineer, and for all risks of every description connected with the prosecution of the work, except as provided herein, also for all expenses incurred in consequence of the suspension of the work as herein authorized.
- C. The payment of any partial estimate or of any retained percentage except by and under the approved final invoice, in no way shall affect the obligation of the Contractor to repair or renew any defective parts of the construction or to be responsible for all damage due to such defects.

1.3 INCIDENTAL WORK

- A. Incidental work items for which separate payment is not made include (but are not limited to) the following items:
 - 1. Clearing, grubbing and stripping
 - 2. Dust control
 - 3. Dewatering
 - 4. Clean-up and Erosion control
 - 5. Loam, seeding, grading, liming, fertilization, mulching and watering
 - 6. Pipe bedding and backfill
 - 7. Restoration of property, and replacement of fences, curbs, structures, sign posts, guard rails, rock wall, mail boxes, traffic loop detectors and other minor items disturbed by the water main construction activities
 - 8. Utility crossings and relocations, unless payment is otherwise made
 - 9. Trench boxes, steel and/or wood sheeting as required, including that left in place
 - 10. Project record documents
 - 11. Cleaning, testing and disinfection of all water lines and appurtenances
 - 12. Buried Utility Markings
 - 13. Temporary utility services to buildings as required to maintain service during construction
 - 14. Flagging Services and Maintenance of Traffic Control during pre and post closure water main construction activities
 - 15. Quality assurance testing
 - 16. Temporary construction and other facilities not to be permanently incorporated into the Work necessary for construction sequencing and maintenance of operations

17. Weather protection
18. Visits to the Project site or elsewhere by personnel or agents of the Contractor, including manufacturer's representatives, as may be required
19. On-site and other facilities acceptable to Water District Engineer for the storage of materials, supplies and equipment to be incorporated into the Work
20. Removal of existing pavement and driveway restoration
21. Trench Excavation (except ledge)

1.4 DESCRIPTION OF PAY ITEMS

- A. The following sections describe the measurement of and payment for the work to be done under the respective items listed in the Bid Form.
- B. Each unit or lump sum price stated in the Bid Form shall constitute full compensation, as herein specified, for each item of the work completed.

Item Nos. 802.10 & 822.322–12-inch & 6-inch Ductile Iron Water Pipe

- A. Method of Measurement: The quantity of water main to be paid for under Item Nos. 802.10 & 822.322 shall be the actual length in feet as measured along the center line of the pipe as laid including all fittings.
- B. Basis of Payment: Installation of water main shall be paid for at the unit price per linear foot stated in the Bid Schedule. Said unit price shall be full compensations for installing all pipes (excluding pre-insulated water mains), fittings of all sizes (except valves), solid sleeves, polyethylene encasement, bronze wedges, mechanical joint restrainer glands; labor, equipment, tools, and other materials required for the installation of the pipelines; for clearing and grubbing, cutting trees; for dewatering; for installing the pipelines; for excavating, removing, and disposal of the existing water mains where required; laying, setting, and jointing all pipes and fittings; for furnishing and placing all temporary sheeting and bracing; for rigid board insulation (use of at the owner's direction only); furnishing and installing all pipe bedding, blanket, and backfill; for compaction of trenches; for cleaning, testing, and disinfecting water mains; connections to existing water mains and abandoning existing water mains; for all labor, tools, and construction equipment; and for all other work and expenses incidental thereto.

Item No. 822.302 – Construction of the Bridge Crossing Pre-Insulated Water Mains and Appurtenant Work

- A. Method of Measurement: Lump Sum
- B. Basis of Payment: Payment of the lump sum price for Item No. 822.302 shall be full compensation for furnishing all labor, materials, tools and equipment required to construct all the water related work complete to the limits shown on the Drawings and as specified and all its appurtenances in its entirety, including pre-insulated piping and fittings, casing spacers, seals, intermediate hanger supports, adjustable roller supports, shields, and all required appurtenances, except for work included for payment under other items. Subbase, paving, pavement markings, traffic control, flagpersons, and all other work related to construction of the bridge will be paid for under the MaineDOT general bid items.

Item No. 501.25 – 24-inch Galvanized Steel Casing Pipe

- A. Method of Measurement: The quantity of casing pipe to be paid for under Item No. 501.25 shall be the actual length in feet as measured along the center line of the pipe as laid, including all casing spacers and seals.
- B. Basis of Payment: Installation of casing pipe shall be paid for at the unit price per linear foot stated in the Bid Schedule. Said unit price shall be full compensation for furnishing all labor, materials, tools, and equipment to construct all steel casing sleeves and all required appurtenances, except for work included for payment under other items.

Item Nos. 823.311 & 823.33 – Installation of 12-inch and 6-inch Gate Valves and Valve Boxes

- A. Method of Measurement: The quantity of gate valves to be paid for under Item Nos. 823.311 & 823.33 shall be defined as the actual number of valves and valve boxes installed complete in place.
- B. Basis of Payment: Installation of gate valves shall be paid for at the unit price per each stated in the Bid Schedule. Said unit price shall be full compensation for installing all materials, labor, equipment, and tools; for installing, setting, and jointing; for restraining joints; for testing all valves and valves boxes; and for all other work and expenses incidental thereto.

Item No. 824.32 - Remove/Reset Hydrant

- A. Method of Measurement: The quantity of hydrant removals and relocations to be paid for under Item No. 824.32 shall be defined as the actual number of hydrants removed and relocated as directed by the Water District Engineer.
- B. Basis of Payment: Payment for the removal/resetting of hydrants under Item No. 824.32 will be made at the unit price per each stated in the Bid Schedule. Said unit price shall be full compensation for all labor, materials, and equipment necessary to carefully remove and relocate existing Gardiner Water District hydrants, for installing, setting, and jointing, for excavation; for all thrust blocks; restraining joints; for the hydrant gate valve and box, tee, and piping; and for all other work and expenses incidental thereto.

Item No. 825.90 – Installation of 1-inch Pre-Insulated HDPE Service Pipe

- A. Method of Measurement: Lump Sum
- B. Basis of Payment: Payment of the lump sum price for Item No. 825.90 shall be full compensation for furnishing all labor, materials, tools and equipment required to construct all the water service pipe related work complete to the limits shown on the Drawings and as specified and all its appurtenances in its entirety, including pre-insulated water service piping and fittings, all casing sleeves, seals, hanger supports, electrical heat trace wiring and controls, and all required appurtenances, except for work included for payment under other items.

Item No. 825.331 – Installation of 1-inch Curb Stops

- A. Method of Measurement: The quantity of curb stops to be paid for under Item No. 825.331 shall be defined as the actual number of curb stops installed complete in place.
- B. Basis of Payment: Curb stops and boxes shall be paid for at the unit price per each stated in the Bid Schedule. Said unit price shall be full compensation for all fittings, labor, equipment, tools and other materials required for the installation of the curb stop and box; for trench dewatering; for excavating and backfilling; for replacing or rebuilding shrubs, fences, lawns, trees, and other materials except other such items specifically included in the Bid Schedule; and for all other work and expenses incidental thereto.

Item No. 825.321 – Installation of 1-inch Corporation Stops

- A. Method of Measurement: The quantity of corporation stops to be paid for under Item No. 825.321 shall be the actual number furnished and installed for service connections.
- B. Basis of Payment: Corporation stops shall be paid for at the unit price per each stated in the Bid Schedule. Said unit price shall be full compensation for all fittings, labor, equipment, and tools necessary for the installation of the corporation stops; tapping the main; and for all the work and expenses incidental thereto.

Item No. 803.01 - Test Pit Excavation and Backfill

- A. Method of Measurement: The quantity to be paid for under Item No. 803.01 shall be the actual number of exploratory excavations as authorized by the Water District Engineer.
- B. Basis of Payment; Test pit excavations shall be paid for at the unit price per each as stated in the Bid Schedule. Said unit price shall be full compensation for furnishing all labor, tools, and equipment; for backfilling and compacting; for temporary pavement; and for all other work and expenses incidental thereto.

Item Nos. 403.213 & 403.2131 – Furnish and Install 12.5mm Hot Mix Bituminous Concrete Pavement for Temporary Trench Patches

- A. Method of Measurement: The quantity to be paid for under Item Nos. 403.213 & 403.2131 shall be the actual tons of pavement rolled and compacted in place, calculated by the following formula: $[0.055 \times \text{length (ft)} \times \text{width (ft)} \times \text{depth (in)}] / 9$. The measurement of pavement eligible for payment shall be based on the temporary trench patch details included in the contract drawings, which specify depth of pavement based on location on project. The actual width will be used in computing area whenever the width of the pavement removed and replaced is less than the above-specified limits.
- B. Basis of Payment: The pavement shall be paid for at the unit price per ton stated in the Bid Schedule. Said unit price shall be full compensation for furnishing all materials, labor, equipment, and tools necessary for furnishing and installing all aggregate base in existing paved areas disturbed by the work, placement of pavement and aggregate in two courses; for all maintenance and repair of pavement; and for all other work and expenses incidental thereto. This item includes pavement of roadways, sidewalks and driveways disturbed by the work.

END OF SECTION

SECTION 01340

SUBMITTALS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included:
 - 1. Submit to the Water District Engineer, Shop Drawings, Operation and Maintenance Manuals, Manufacturers' Certificates, Project Data, and Samples required by the Specification Sections.
- B. Related Work Specified Elsewhere:
 - 1. Project Record Documents: Section 01720

1.2 SHOP DRAWINGS

- A. Shop Drawings are required for each and every element of the work. Each shop drawing shall be assigned a sequential number for purposes of easy identification, and shall retain its assigned number, with appropriate subscript, on required resubmissions.
- B. Shop Drawings are generally defined as all fabrication and erection drawings, diagrams, brochures, schedules, bills of material, manufacturers data, spare parts lists, and other data prepared by the Contractor, his subcontractors, suppliers, or manufacturers which illustrate the manufacturer, fabrication, construction, and installation of the work, or a portion thereof.
- C. The Contractor shall submit to the Water District Engineer a minimum of 6 copies of Shop Drawings and approved data and 1 electronic copy. The Water District Engineer will retain 3 copies (for Owner's, Water District Engineer's and Field Representative's files) and return 3 copies to the Contractor for distribution to subcontractors, suppliers and manufacturers. If the Contractor requires more than 3 then the number of copies submitted shall be adjusted accordingly. All shop drawing comments will be summarized on the Submittal Review Form.
- D. The Contractor shall provide a copy of the completed Submittal Certification Form (copy provided for Contractor's use at the end of this Specification Section) which shall be attached to every copy of each shop drawing. Shop Drawings shall show the principal dimensions, weight, structural and operating features, space required, clearances, type and/or brand of finish or shop coat, grease fittings, etc., depending on the subject of the drawing. When it is customary to do so, when the dimensions are of particular importance, or when so specified, the drawings shall be certified by the manufacturer or fabricator as correct for the work.
- E. Shop Drawings shall be submitted as a complete package by specification section, unless otherwise reviewed and approved by the Water District Engineer. It is the intent that all information, materials and samples associated with each specification section be included as a single submittal for the Water District Engineer's review. Any deviation from this requirement, such as submitting miscellaneous metals grouped by structure, shall be requested in writing with an anticipated shop drawing breakdown/schedule prior to any associated submittal.
- F. The Contractor shall be responsible for the prompt and timely submittal of all shop

and working drawings so that there shall be no delay to the work due to the absence of such drawings.

- G. No material or equipment shall be purchased or fabricated especially for the Contract until the required shop and working drawings have been submitted as hereinabove provided and reviewed for conformance to the Contract requirements. All such materials and equipment and the work involved in their installation or incorporation into the Work shall then be as shown in and represented by said drawings.
- H. Until the necessary review has been made, the Contractor shall not proceed with any portion of the work (such as the construction of foundations), the design or details of which are dependent upon the design or details of work, materials, equipment or other features for which review is required.
- I. All shop and working drawings shall be submitted to the Water District Engineer by and/or through the Contractor, who shall be responsible for obtaining shop and working drawings from his subcontractors and returning reviewed drawings to them. Shop drawings shall be of standardized sizes to enable the Owner to maintain a permanent record of the submissions. Approved standard sizes shall be: (a) 24 inches by 36 inches; (b) 11 inches by 17 inches, and (c) 11 inches by 8-1/2 inches. Provision shall be made in preparing the shop drawings to provide a binding margin on the left-hand side of the sheet. Shop drawings submitted other than as specified herein may be returned for resubmittal without being reviewed.
- J. Only drawings which have been checked and corrected by the fabricator should be submitted to the Contractor by his subcontractors and vendors. Prior to submitting drawings to the Water District Engineer, the Contractor shall check thoroughly all such drawings to satisfy himself that the subject matter thereof conforms to the Drawings and Specifications in all respects. All drawings which are correct shall be marked with the date, checker's name, and indication of the Contractor's approval, and then shall be submitted to the Water District Engineer.
- K. If a shop drawing shows any deviation from the Contract requirements, the Contractor shall make specific mention of the deviations in his letter of transmittal. Shop Drawings that contain significant deviations that are not brought to the attention of the Water District Engineer may be subject to rejection.
- L. Should the Contractor submit equipment that requires modifications to the structures, piping, electrical conduit, wires and appurtenances, layout, etc., detailed on the Drawings, he shall also submit details of the proposed modifications. If such equipment and modifications are accepted, the Contractor, at no additional cost to the Owner, shall do all work necessary to make such modifications.
- M. A maximum of two submissions of each Shop Drawing will be reviewed, checked, and commented upon without charge to the Contractor. Any additional submissions which are ordered by the Water District Engineer to fulfill the stipulations of the Drawings and Specifications, and which are required by virtue of the Contractor's neglect or failure to comply with the requirements of the Drawings and Specifications, or to make those modifications and/or corrections ordered by the Water District Engineer in the review of the first two submissions of each Shop Drawing, will be reviewed and checked as deemed necessary by the Water District Engineer, and the cost of such review and checking, as determined by the Owner, and based upon Water District Engineer's documentation of time and rates

established for additional services in the Owner-Water District Engineer Agreement for this Project, may be deducted from the Contractor to make all modifications and/or corrections as may be required by the Water District Engineer in an accurate, complete, and timely fashion. Resubmittals for the sole purpose of providing written responses to review comments will not be considered a resubmittal counting towards the two-submission limit.

1.3 SAMPLES

- A. The Contractor shall submit samples when requested by the Water District Engineer to establish conformance with the specifications, and as necessary to define color selections available.

1.4 MANUFACTURER'S CERTIFICATES

- A. Prior to accepting the installation, the Contractor shall submit manufacturer's certificates for each item specified.
- B. Such manufacturer's certificates shall state that the equipment has been installed under either the continuous or periodic supervision of the manufacturer's authorized representative, that it has been adjusted and initially operated in the presence of the manufacturer's authorized representative, and that it is operating in accordance with the specified requirements, to the manufacturer's satisfaction. All costs for meeting this requirement shall be included in the Contractor's bid price.

1.5 SUBMISSION REQUIREMENTS

- A. Accompany submittals with transmittal letter, containing:
 - 1. Sequential Transmittal Number
 - 2. Date.
 - 3. Project title and number.
 - 4. Contractor's name and address.
 - 5. The sequential shop drawing number (called the Water District Engineer's Shop Drawing number) of each shop drawing, project data and sample submitted.
 - i. Water District Engineer's shop drawing number shall start at 001 for the first shop drawing in the first transmittal and continue sequentially until the last shop drawing is submitted.
 - ii. Resubmissions shall be denoted with a letter following the number. For example the first resubmission of Shop Drawing 001 shall be numbered 001A, a second resubmission of shop 001 shall be numbered 001B, and that sequence shall continue for any subsequent resubmissions.
 - iii. O+M submittals shall be numbered with separate and unique Water District Engineer's shop drawing numbers.
 - 6. The Contractor's Shop Drawing number (if a different numbering system to the Water District Engineer's number is used by the Contractor).
 - 7. Notification of deviations from Contract Documents.
 - 8. Other pertinent data.
- B. A completed Submittal Certification Form shall be attached to each copy of each shop drawing and must include:
 - 1. Identification of deviations from Contract Documents.

2. Contractor's stamp, initialed or signed, certifying review of the submittal, verification of field measurements and compliance with Contract Documents.
 3. Where specified or when requested by the Water District Engineer, manufacturer's certification that equipment, accessories and shop painting meet or exceed the Specification requirements.
 4. Where specified, manufacturer's guarantee.
- C. Requirements for Electronic Submittals:
1. Each individual shop drawing or O&M submittal shall be contained in one PDF.
 2. The first page of the PDF shall be the Submittal Certification Form, which clearly identifies the submittal, specification section and shop drawing number. File names shall also identify the submittal contained in the PDF. Example file name: 02444-(Shop Drawing No.).pdf
 3. The electronic copy in PDF form shall be **exactly** as submitted in the hard copy. Electronic copies in PDF form shall be submitted on a CD or DVD and shall accompany the hard copies.
 4. PDF versions of 24x36 drawings shall be converted to 24 x 36 PDFs so as not to lose the clarity of the original drawing.
 5. Electronic submittals that are not submitted in accordance with the requirements stated above will not be reviewed by the Water District Engineer.

1.6 RESUBMISSION REQUIREMENTS

- A. Revise initial drawings as required and resubmit as specified for initial submittal.
- B. Indicate on drawings any changes which have been made other than those required by Water District Engineer. All renumbering of shop drawings, relabeling of individual pieces or assemblies or relocating of pieces or assemblies to other Drawings within the submittal shall be clearly brought to the attention of the Water District Engineer.

1.7 ENGINEER'S REVIEW

- A. The review of shop and working drawings hereunder will be general only, and nothing contained in this specification shall relieve, diminish or alter in any respect the responsibilities of the Contractor under the Contract Documents and in particular, the specific responsibility of the Contractor for details of design and dimensions necessary for proper fitting and construction of the work as required by the Contract and for achieving the result and performance specified thereunder.
- B. The Water District Engineer's review comments will be summarized on a Submittal Review Form, which includes an action code. A description of each action code is provided below.
 1. **No Exceptions Taken (Status 0 on shop drawing log).** The shop drawing complies with the Contract Document requirements. No changes or further information are required. Where appropriate, the submittal review form will be used to alert the Contractor, Owner and Field personnel of remaining items within that specification section that still needs to be submitted.
 2. **Make Corrections Indicated (Status 1 on shop drawing log).** The shop drawing complies with the Contract Document requirements except for minor

changes, as indicated. Resubmittal is not required unless it is specifically called for; however, Water District Engineer requires that all comments will be addressed by the Contractor, unless otherwise notified in writing prior to execution of the relevant work.

3. **Conditional to Remarks (Status 2 on shop drawing log).** The shop drawing potentially complies with the Contract Document requirements, contingent upon satisfactory resolution of review comments. Remarks will explicitly list what information needs to be resubmitted. Resubmittal from the Contractor should include a cover letter or summary which indicates how each review comment has been addressed.
4. **Revise and Resubmit (Status 3 on shop drawing log).** The shop drawing does not comply with the Contract Document requirement as submitted, but may with changes indicated and/or submission of additional information. The entire package must be resubmitted with the necessary information and a cover letter which indicates how each review comment has been addressed and where to find the information in the resubmittal.
5. **Rejected (Status 4 on shop drawing log).** The shop drawing does not comply with the Contract Document requirements, for the reasons indicated in the remarks, and is unacceptable.
6. **In Review (Status 5 on shop drawing log).** The shop drawing is currently under review.
7. **For Information Only (Status 6 on shop drawing log).** The shop drawing review was informational only. No comments are provided.

SUBMITTAL CERTIFICATION FORM

PROJECT: _____ CONTRACTOR'S PROJ. NO: _____

CONTRACTOR: _____ ENGINEER'S PROJ. NO: _____

ENGINEER: _____

TRANSMITTAL NUMBER: _____ SHOP DRAWING NUMBER: _____

SPECIFICATION SECTION OR DRAWING NO: _____

DESCRIPTION: _____

MANUFACTURER: _____

The above referenced submittal has been reviewed by the undersigned and I/we certify that the material and/or equipment meets or exceeds the project specification requirements with

☐ NO DEVIATIONS
or

☐ A COMPLETE LIST OF DEVIATIONS AS FOLLOWS^a:

By: _____ By: _____

Contractor^b

Manufacturer^c

Date: _____ Date: _____

^a Any deviations not brought to the attention of the Water District Engineer for review and concurrence shall be the responsibility of the Contractor to correct, if so directed.

^b Required on all submittals

^c When required by specifications Page ____ of ____

General Contractor's Stamp

END OF SECTION

SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included:
 - 1. Keep accurate record documents for all additions, substitutions of material, variations in work, and any other additions or revisions to the Contract.
- B. Related Work Specified Elsewhere:
 - 1. Shop Drawings, Project Data, and Samples are specified in "General Conditions" and Section 01340, Submittals.

1.2 MAINTENANCE OF DOCUMENTS

- A. Maintain at job site, one copy of:
 - 1. Contract Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Reviewed Shop Drawings
 - 5. Change Orders
 - 6. Any other modifications to the Contract
 - 7. Field Test Reports
- B. Store documents in files and racks specifically identified for this use, that are apart from documents used for construction.
- C. File documents in a logical manner indexed for easy reference.
- D. Maintain documents in clean, dry, legible condition.
- E. Do not use record documents for construction purposes.
- F. Make documents available at all times for inspection by the Water District Engineer and Owner, and by the end of the project, transmit these documents to the Water District Engineer.

1.3 RECORDING

- A. Label each document "PROJECT RECORD" in large high printed letters.
- B. Keep record documents current and do not permanently conceal any work until required information has been recorded.
- C. General Field Recording Issues:
 - 1. All ties should be taken from existing, permanent features such as utility poles, corners of houses and hydrants. Porches, sheds or other house additions should be avoided for they could be torn down. A minimum of two ties should be taken.
 - 2. Stations should be recorded to the nearest foot.
 - 3. Inverts should be recorded to the nearest hundredth of a foot.
 - 4. Elevations should be recorded to the nearest hundredth of a foot.
 - 5. Building dimensions should be recorded to the nearest 1/4".
- D. Project Record Drawings - Legibly mark Contract Drawings to record existing utilities and actual construction of all work, including but not limited to the

following (where applicable):

1. Existing Utilities
 - a. Water mains and services, water main gate valves, sewer mains and services, storm drains, culverts, steam lines, gas lines, tanks and other existing utilities encountered during construction must be accurately located and shown on the Drawings. In congested areas supplemental drawings or enlargements may be required.
 - b. Show any existing utilities encountered in plan and profile and properly labeled showing size, material and type of utility. Ties should be shown on plan. Utility should be drawn to scale in section (horizontally and vertically) and an elevation should be called out to the nearest hundredth of a foot.
 - c. When existing utility lines are broken and repaired, ties should be taken to these locations.
 - d. If existing water lines are replaced or relocated, document the area involved and pipe materials, size, etc. in a note, and with ties.
2. Water Mains and Force Mains
 - a. Show ties to the location of all valves, bends (horizontal and vertical), tees and other fittings. The use of thrust blocks should be recorded.
 - b. Revise elevations indicated on the Drawings to reflect actual construction.
3. House Services
 - a. Draw all house services (even to empty lots) on plan, and show ties.
4. Ledge
 - a. Ledge profiles should be shown. Note whether the plotted ledge profile reflects undisturbed or expanded conditions.
5. Roads
 - a. Show centerline road profile and level spot elevations.
 - b. Show pavement widths.
 - c. On road cross sections, show the pavement cross slope.
 - d. Show any deviations from the design plans.
- E. Specifications and Addenda - Legibly mark up each section to record:
 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
 2. Changes made by Change Order, Field Order, or other method.

1.4 SUBMITTALS

- A. At the completion of the project, deliver record documents to the Water District Engineer.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
 1. Date, project title and number.
 2. Contractor's name and address.
 3. Title and number of each record document with certification that each document is completed and accurate.
 4. Signature of Contractor, or his authorized representative.
- C. Failure to supply all information on the Project Record Drawings as specified in Part 1.3 may result in additional retainage from monthly partial payment requests, and in non-approval of final payments of the Contract and/or if contract time (as

specified in accordance with the Standard General Conditions of the Construction Contract) has elapsed, this shall be grounds for the enactment of the liquidated damages as specified.

END OF SECTION

SECTION 02614

PRE-INSULATED WATER MAIN AND WATER SERVICE PIPE

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Furnish and install pre-insulated pipe system and accessories where shown on the Drawings.
- B. Related work specified elsewhere (when applicable):
 - 1. Trench excavation and backfill are specified in Division 2.
 - 2. Carrier pipe materials are specified elsewhere.

1.2 QUALITY ASSURANCE

- A. Provide pipe and fittings manufactured in America.
- B. Acceptable Manufacturers:
 - 1. Urecon, Ltd.
 - 2. Or approved equal meeting all requirements of Part 2 of this Section.
- C. Manufacturer shall submit shop drawings for approval.
 - 1. Shop drawings shall show jacket system, insulation, end seals, joint kits, etc.
 - 2. The entire system shall be factory engineered.
 - 3. The product shall be manufactured in accordance with ISO 9001-2000 Standards or approved equal.
- D. A representative of the manufacturer shall be present for all critical periods.
 - 1. Critical periods shall include but not be limited to:
 - a. Inspection of materials for damages after receipt at jobsite.
 - b. Supervision of joint assembly.
 - c. Supervision of hydrostatic testing.
 - d. Other supervision as required to provide a complete integral system.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Core Pipe
 - 1. 12-inch Water Main - Ductile Iron Restrained Joint Pipe is detailed in Specification Section 02615.
 - 2. 1-inch Water Service – HDPE, CTS size, 200 psi rated domestic water pipe as detailed in Specification 02627.
- B. Insulation
 - 1. Material: rigid polyurethane foam, factory applied.
 - 2. Thickness: 2 in. minimum or as required.
 - 3. Density: (ASTM D 1622) 2.2 to 3.0 lbs/ft³.
 - 4. Closed cell content: (ASTM D 2856) 90%, minimum.
 - 5. Water absorption: (ASTM D 2842) 4.0% by volume.
 - 6. Thermal conductivity: (ASTM C518) 0.14 to 0.17 Btu• in/ft²•hr•°F.
- C. Outer Jacket

1. 18-gauge, hot-dipped galvanized steel, spiral lock seam jacket.
 2. Jacket outer diameter shall be 18-inches minimum for 12-inch ductile iron water main and as recommended by the manufacturer for water service pipe.
- D. Insulation Kits for Fittings
1. Insulation kits for fittings shall consist of rigid polyisocyanurate or urethane foam insulation complete with a thin elastomeric coating on the outside surfaces for strength during transit and installation, and fabricated galvanized steel or aluminum outer protective jacket consistent with that on the factory insulated pipe. All kits to be supplied complete with stainless steel bands, band-it clips, and screws to suit.
- E. Special Heat Trace Raceways
1. Heat tracing raceways shall consist of an extruded molding large enough to accept heat trace cable and shall be applied to the pipe prior to application of the insulation. The raceway will be securely fastened to the pipe to prevent the ingress of foam therein during the insulation process. Each raceway shall be checked after insulating to insure it is not plugged. The ends shall be sealed prior to shipping to prevent any foreign material from entering the raceway while in transit or during installation.
 2. Two raceways will be provided for each pipe run; one placed at 12:00 o'clock for heat trace cable, and one at 6:00 o'clock for temperature sensor.
- F. Electric Heat Tracing System
1. Heat trace cable shall be constant wattage, 8W/ft at 240VAC, parallel resistance type consisting of two #12 Teflon jacketed AWG tinned-copper bus wires and thermally stable nichrome heating wire, metallic ground braiding, moisture resistant. Heat trace cable shall be equal to Urecon Thermocable Part Number C26-240-COJ. All heat tracing cables and related accessories shall be UL/CSA approved and comply with CSA Heat Tracing Standard C22.2 No. 130.2-93.
 2. Heat trace cable shall be installed in raceway slot provided on pre-insulated water pipe. Cable shall come equipped with two Urecon PFK-4 power feed kits, A1333-COJ power and end termination kits.
 3. Temperature Sensors shall be 100 ohm platinum RTD with minimum 100 feet of lead wire, such as Urecon URTD-30-R.
 4. Heat Trace Controller shall be a state-of-the-art electronic thermostat designed to control two heating cables operating at 240VAC, with a total current draw of 30 Amps, such as Urecon UTC-2230-21.
 - a. The controller shall have an internal 2-pole, 30A, 240VAC circuit breaker that provides a local means of disconnect. The controller shall also be able to supply 120VAC power at 2 Amps.
 - b. The controller shall have ground fault detection circuitry with an "Alarm and Trip" activation when a ground fault is present.
 - c. The controller shall have three temperature sensor inputs: two for pipe temperature control and one for high temperature limit for any plastic piping that may be used.
 - d. The controller shall have a low temperature, factory set, alarm for each pipe sensor.
 - e. Heat Trace on-off control deadband shall be 1.8 degrees F.
 - f. The controller shall have a factory-programmable override input that will force an output to suit the application.

- g. The controller shall have an automatic cycle function that momentarily turns on the heat trace cable(s) daily to monitor ground fault conditions.
 - h. The controller shall have LED indications for Power On, Temperature Controller Calling for Heat, and Alarm Activated.
 - i. The Controller shall have a non-volatile programming memory to retain programming parameters during a power outage.
 - j. Controller shall be mounted inside a stainless steel NEMA 4X enclosure approximately 16"H x 12"W x 8"D, such as Hoffman Concept series C-SD16128SS6 with C-P1612 backplate. Enclosure shall be lockable to prevent unauthorized entry or vandalism. Enclosure shall have warning label on cover indicating "DANGER 240VAC".
 - k. Provide a red, strobe light to mount on top of main enclosure; connect to internal source of 120VAC via an auxiliary alarm contact. Light shall activate whenever the controller is in an alarm condition. Light shall be Federal Signal Model 651, Part Number 412027 with protective wire guard 210781, or equal.
- 5. All heat trace controls and components shall be from the same manufacturer.
 - 6. Installation shall be in accordance with manufacturer's instructions.
- G. Pipe Spacers
- 1. Pipe spacers for use between the insulated jacket and bridge abutment casing pipe shall be a two-piece 14-gauge T-304 stainless steel assembly with stainless steel bolts. Assembly shall be the restrained positioning type. The runners shall be an ultra-high molecular weight polymer with a maximum coefficient of friction 0.12. The assembly shell liner shall be 0.090" (2.3 mm) ribbed PVC with 85-90 durometer. Spacer assembly shall be as manufactured by Cascade Waterworks MFG. Co. or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All pre-insulated piping shall be installed per the manufacturer's recommendations.
- B. Bridge crossing water main pipe section shall be pressure tested and disinfected in accordance with Specification Section 02675 - Cleaning, Testing and Disinfection of Water Mains.

END OF SECTION

SECTION 02615

DUCTILE IRON PIPE & FITTINGS FOR POTABLE WATER

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Provide and install ductile iron pipe and fittings of the type(s) and size(s) in the location(s) shown on the Drawings and as specified herein.
- B. Related Work Specified Elsewhere:
 - 1. Pipe and Pipe Fittings - General is specified in the appropriate Section in this Division.
 - 2. Excavation, Bedding and Backfill are specified in this Division.
 - 3. Water Main Anti Corrosion Encasement is specified in this Division

1.2 QUALITY ASSURANCE

- A. Standards (As Applicable):
 - 1. Cement-mortar lining for water: ANSI A21.4 (AWWA C104).
 - 2. Rubber gasket joints: ANSI A21.11 (AWWA C111).
 - 3. Ductile iron pipe thickness: ANSI A21.50 (AWWA C150).
 - 4. Ductile iron pipe centrifugally cast in metal or sand lined molds: ANSI A21.51 (AWWA C151).
 - 5. Pipe flanges and fittings: ANSI B16.1 and ANSI A21.10 (AWWA C110).
 - 6. Threaded, flanged pipe: ANSI A21.15 (AWWA C115).
 - 7. Cast and ductile iron fittings: ANSI A21.10 (AWWA C110).
 - 8. Ductile iron compact fittings: ANSI 21.53 (AWWA C153).
- B. Acceptable Manufacturers for Pipe:
 - 1. US Pipe
 - 2. American Pipe
 - 3. McWane
 - 4. Or equivalent.
- C. Acceptable Manufacturers for Fittings:
 - 1. Any manufacturer will be considered

1.3 DELIVERY, STORAGE & HANDLING

- A. Exercise extra care when handling ductile iron pipe because it is comparatively brittle.
- B. Exercise extra care when handling cement lined pipe because damage to the lining will render it unfit for use.
- C. Protect the spherical spigot ends and the plain ends of all pipe during shipment by wood lagging securely fastened in place.

PART 2 - PRODUCTS

2.1 PIPE MATERIALS

- A. General:

1. All exterior (buried) ductile iron pipe shall have push-on or mechanical joints unless otherwise specified or shown on the Drawings. Pipe within valve pits and other structures is considered interior pipe and shall be flanged.
 2. All exterior pre-insulated bridge crossing pipe shall be restrained joint DI having similar bell diameter as push on pipe to minimize required insulation diameter. Restrained joint bridge crossing pipe shall be TR-Flex by U.S. Pipe, Flex-Ring by American Ductile Iron Pipe, or approved equal.
 3. Unless otherwise shown on the Drawings or in the pipe schedule, the minimum thickness of ductile iron pipe shall be:
 - a. For pipe 4 inches in diameter and smaller: Class 51.
 - b. For pipe 6 inches in diameter and larger: Class 52
Pipe with flanges: Class 53.
 4. Pipe for use with sleeve type couplings shall have plain ends (without bells or beads) cast or machined at right angles to the axis.
 5. Pipe shall be double thickness cement lined and seal coated unless noted otherwise on the Drawings, and except for air piping lines which shall be completely unlined.
 6. Pipe for use with split type couplings shall have ends with cast or machined shoulders or grooves that meet the requirements of the manufacturer of the couplings.
 7. Factory applied bituminous coatings (in accordance with AWWA C151) shall be furnished on the exterior of all underground piping unless specified otherwise.
 8. The outside of pipe within structures and exposed shall not be coated with bituminous coating, but shall be thoroughly cleaned and given one shop coat of Intertol Rustinhibitive Primer 621 by Koppers Co.; Multiprime by PPG Industries; Chromox 13R50 Primer made by Mobil Chemical Co.; or equivalent.
- B. Joints (as shown on Drawings or as specified):
1. Push-on and Mechanical Joint:
 - a. The plain ends of push-on pipes shall be factory machined to a true circle and chamfered to facilitate fitting the gasket.
 - b. Provide gaskets manufactured from a composition material suitable for exposure to the fluid to be contained within the pipe. On high temperature applications such as air lines, the gaskets shall be suitable for service from 40 °F to 250°F.
 - c. Bolts and nuts for buried mechanical joints shall meet the AWWA C-111 requirements and be made of high strength, low alloy steel.
 2. Flanged:
 - a. Provide specially drilled flanges when required for connection to existing piping or special equipment.
 - b. Flanges shall be long-hub screwed tightly on pipe by machine at the foundry prior to facing and drilling.
 - c. Gaskets:
 - (1) Ring type of rubber with cloth insertion.
 - (2) Thickness of gaskets 12 inches in diameter and smaller: 1/16 inch.
 - (3) Thickness of gaskets larger than 12 inches in diameter: 3/32 inch.
 - d. Fasteners:

- (1) Make joints with bolt, studs with a nut on each end, or one tapped flanged with a stud and nut.
 - (2) The number and size of bolts shall meet the requirements of the applicable ANSI standard.
 - (3) Nuts, bolts, and studs shall be Grade B meeting the requirements of ASTM A307.
 - (4) After jointing, coat entire joint with bituminous material compatible with pipe coating unless other coating required by Section 09900.
 - e. When applicable, provide and install flange clamps as shown on the Drawings.
3. Joint Bracing:
 - a. Provide joint bracing to prevent the piping from pulling apart under pressure as required and as shown on the Drawings.
 - b. Types of bracing:
 - i. Use in conjunction with mechanical joint fittings.
 - ii. The joint restraint ring and its wedging components shall be made of ductile iron conforming to ASTM A536-80.
 - iii. Dimensions of the restrainer must allow use with standard M.J. bell conforming to AWWA C111 and AWWA C153.
 - iv. Restrainer must restrain up to 350 psi of working pressure in 3-inch to 16-inch sizes and 250 psi of working pressure in 18-inch to 48-inch sizes with a 2:1 safety factor.
 - v. Torque limiting twist off nuts shall be used to ensure proper actuation of the restraining wedges (used on i,ii,iii below).
 - c. Acceptable Manufacturers
 - i. Sigma Super Lug
 - ii. Ford Uni-Flange Series 1400
 - iii. EBBA Mega Lug
 - iv. Romac Grip Ring
 - v. Star Grip Series 300
 - vi. Romac Romagrip

2.2 FITTINGS

- A. Standard Fittings:
 1. 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"
 2. Pressure rating of 350 psi for D.I. compact fittings and 250 psi for all others unless indicated otherwise on the Drawings or as specified.
 3. Joints the same as the pipe with which they are used or as shown on the Drawings.
 4. Fittings shall be cement line AWWA C104 (latest revision) or fusion bonded epoxy coated with a 5-mil nominal thickness per AWWA C550 and C116.
 5. Interior seal coated AWWA C104 with minimum of 4 mils dry film thickness.
 6. Exterior bituminous coated, 4 mils minimum dry film thickness or fusion bonded epoxy coated with 5-mil nominal thickness per AWWA C550 and C116.

7. 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).

PART 3 - EXECUTION

3.1 INSPECTION

- A. Provide all labor necessary to assist the Water District Engineer to inspect pipe, fittings, gaskets, and other materials.
- B. Carefully inspect all materials at the time of delivery and just prior to installation.
- C. Carefully inspect all pipe and fittings for:
 1. Defects, such as weak structural components, that adversely affect the execution and quality of work.
 2. Deviations beyond allowable tolerances for pipe clearances.
- D. Immediately remove all rejected materials from the project site.

3.2 INSTALLATION

- A. General:
 1. Install in strict accordance with the pipe and fitting manufacturer's instructions and recommendations and as specified or as shown on the Drawings.
 2. Concrete thrust blocks or other acceptable thrust resistant system is required at all fittings on pressure pipe. Where thrust blocks are used, these shall be placed against undisturbed soil or screened gravel compacted to 95 percent and shall be placed so that the joints are accessible for repairs.
- B. Assembling Joints:
 1. Push-on Joints:
 - a. Insert the gasket into the groove of the bell.
 - b. Uniformly apply a thin film of special lubricant over the inner surface of the gasket that will contact the spigot end of the pipe.
 - c. Insert the chamfered end of the plain pipe into the gasket and push until it seats against the bottom of the socket.
 2. Bolted Joints:
 - a. Remove rust preventive coatings from machined surfaces prior to assembly.
 - b. Thoroughly clean and carefully smooth all burrs and other defects from pipe ends, sockets, sleeves, housings and gaskets.
 - c. After jointing coat all bolts with bituminous material compatible with the pipe coating required herein.
 3. Flanged Joints:
 - a. Insert the nuts and bolts (or studs), finger tighten, and progressively tighten diametrically opposite bolts uniformly around the flange to the proper tension.
 - b. Execute care when tightening joints to prevent undue strain upon valves, pumps, and other equipment.
 4. Mechanical Joints:
 - a. Thoroughly clean, with a wire brush, surfaces that will be in contact with the gaskets.
 - b. Lubricate the gasket, bell, and spigot by washing with soapy water.

- c. Slip the gland and gasket, in that order, over the spigot and insert the spigot into the bell until properly seated.
 - d. Evenly seat the gasket in the bell at all points, center the spigot, and firmly press the gland against the gasket.
 - e. Insert the bolts, install the nuts finger tight, and progressively tighten diametrically opposite nuts uniformly around the joint to the proper tension with a torque wrench.
 - f. The correct range of torque (as indicated by a torque wrench) and the length of wrench (if not a torque wrench) shall not exceed:
 - (1) Range or Torque: 60-90 ft.-lbs.
 - (2) Length of Wrench: 10 inches.
 - g. If effective joint sealing is not attained at the maximum torque specified above, disassemble, thoroughly clean, and reassemble the joint. Do not overstress the bolts to tighten a leaking joint.
5. Bell and Spigot Joints:
- a. Thoroughly clean the bell and spigots and remove excess tar and other obstructions.
 - b. Insert the spigot firmly into place and hold securely until the joint has been properly completed.
- C. Fabrication:
- 1. Tapped Connections:
 - a. Make all tapped connections as shown on the Drawings or as required by the Water District Engineer.
 - b. Make all connections watertight and of adequate strength to prevent pullout.
 - c. Drill and tap normal to the longitudinal axis of the pipe.
 - d. Taps in fittings shall be located where indicated by the manufacturer for that particular type of fitting.
 - e. The maximum sizes of taps in pipes and fittings without busses shall not exceed the sizes listed in the appendix of ANS A21.51 based on 2 full threads for ductile iron and 3 full threads for cast iron.
 - 2. Cutting:
 - a. Perform all cutting as set forth in AWWA C600.
 - b. Carefully chamfer all cut ends to be used with push-on joints to prevent damage to gaskets when pipe is installed.
- D. Pipe Deflection:
- 1. Push-on and Mechanical Joints:
 - a. The maximum permissible deflection of alignment at joints shall be limited to that given in AWWA C600.
 - 2. Flexible Joints:
 - a. The maximum deflection in any direction shall not exceed the manufacturer's instructions and recommendations.

END OF SECTION

SECTION 02616

DUCTILE IRON MAIN ANTI-CORROSION POLYETHYLENE ENCASEMENT (POLYWRAP)

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Furnish all materials and install polyethylene encasement (polywrap) of ductile iron water and sewer main for all ductile iron main, valves and fittings and as specified herein.
- B. Related Work Specified Elsewhere: Ductile Iron pipe and fittings, trench excavation, valves.

1.2 QUALITY ASSURANCE

- A. A competent laboratory must be maintained by the manufacturer of the polywrap at the point of manufacture to insure quality control.
- B. During all periods of shipment and storage, the fabric shall be wrapped in a heavy duty protective covering to protect the fabric from direct sunlight, ultraviolet rays, and temperatures greater than 140°F, mud, dirt, dust and debris.

1.3 SUBMITTALS

- A. Manufacturer shall furnish certified test reports with each shipment of material attesting that the polywrap meets the requirements of this Specification.
- B. Contractor shall submit product information they intend to use and the installation method they intend to employ.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. **Linear low density polyethylene (LLDPE)** Polyethylene encasement protection wrap for ductile iron pipe. 8 mil thickness. Tubes or sheets

TABLE 1

<u>Geotextile Mechanical Property</u>	<u>Test Method</u>	<u>Minimum Permissible Value</u>
Tensile Strength (both directions)	ASTM D882	3600 psi
Elongation	ASTM D882	800 percent
<u>Geotextile Mechanical Property</u>	<u>Test Method</u>	<u>Minimum Permissible Value</u>
Dielectric Strength	ASTM D149	800 V/mil
Impact Resistance	ASTM D1709-B	600 g
Propagation Tear Resistance Strength	ASTM D1922	2550 gf

- B. Polywrap shall meet all requirements of ANSI/AWWA C105/A21.5
- C. Polywrap shall consist of 3 layers of co-extruded linear low density polyethylene fused into a single layer, minimum 8 Mil thickness.
- D. Inside surface of Polywrap shall be infused with an antimicrobial compound to mitigate microbiologically induced corrosion (MIC) and a volatile corrosion inhibitor to control galvanic corrosion.
- E. The polywrap shall meet or exceed the minimum values stated above as determined by the most recent test methods specified above. The product must be marked with the specification conformance, applicable pipe sizes and the words “corrosion protection”.

PART 3 - EXECUTION

3.1 DUCTILE IRON PIPE AND FITTINGS

Installation of the polywrap shall be done in accordance with one of the three recommended methods as outlined in ANSI/AWWA C105/A21.5. Methods A and B use polyethylene tubes, and method C uses polyethylene sheets.

- A. Method A uses one length of polyethylene tube, overlapped at the joints, for each length of pipe. A minimum of 2' overlap shall be used. The polyethylene wrap shall be cut approximately 2 feet longer than that of the pipe section. After assembling the pipe joint, the polyethylene shall be overlapped approximately one (1) ft. and at all joints sealed with approved adhesive tape. Additional taping shall be used at 3 foot (3') intervals along the pipe. Any rips, punctures or other damage to the polyethylene shall be repaired immediately with adhesive tape. All copper service connections shall be wrapped for a distance of 3 feet from the centerline of the main. Before installing the polyethylene wrap, the exterior of the pipe shall be free of foreign material.
- B. Method B uses a length of polyethylene tube for the barrel of the pipe and a separate length of polyethylene tube or sheet for the joints. The national standard does not recommend Method B for bolted-type joints unless an additional layer of polyethylene is provided over the joint area as in Methods A and C. If this method is chosen an additional layer of polyethylene will be provided over the joint area.
- C. In Method C, each section of pipe is completely wrapped with a flat polyethylene sheet.

3.2 JOINTS, VALVES, APPURTENANCES AND TAPS

- A. All ductile iron pipe, fitting and valves will be wrapped in accordance with C105/A21.5.
- B. Pipe-shaped appurtenances: bends, reducers, offsets, and other pipe-shaped appurtenances in shall be covered in the same manner as the pipe.
- C. Odd-shaped appurtenances: Wrap odd-shaped appurtenances such as valves, tees, and crosses with a flat sheet or split length of polyethylene tube by passing the sheet under and then over the appurtenance and bringing it together around the body of the appurtenance. Make seams by bringing the edges of the polyethylene together, folding over twice, and taping them down.
- D. Joints: Overlap joints as in normal installation; then tape the polyethylene securely in place at valve stems and other penetrations. When bolted-type joints are used, care

should always be taken to prevent bolts or other sharp edges of the joint configuration from penetrating the wrap.

- E. Branches, blow offs, air valves: To provide openings for branches, blow-offs, air valves, and similar appurtenances, make an X-shaped cut in the polyethylene and temporarily fold back the film. After installing the appurtenance, tape the slack securely to the appurtenance and repair the cut and any other damaged areas in the polyethylene with tape.
- F. Service taps: Wrap a minimum of two layers of polyethylene adhesive tape completely around the pipe to cover the area where the tapping machine and chain will be mounted. Then install the corporation stop directly through the tape and polyethylene. After the tap is made, inspect the entire circumferential area for damage and make any necessary repairs.
- G. Hydrants: Do not wrap hydrants that do not have drain port plugs installed. Tape the polyethylene securely in place on the hydrant branch after the valve, before reaching the hydrant.

3.3 GENERAL

- A. Quality of installation is more important than the actual sequence followed.
- B. Polyethylene shall not be stored in the sun.
- C. When lifting polyethylene-encased pipe with a crane, use a synthetic sewn “sling” or padded wire rope sling to protect the polyethylene.
- D. Remove all lumps of clay, mud, cinders, etc., on the pipe surface before encasing the pipe.
- E. Prevent soil or bedding material from becoming trapped between the pipe and the polyethylene.
- F. When installing polyethylene encasement below the water table or in areas subject to tidal action, seal as thoroughly as possible both ends of each polyethylene tube with polyethylene adhesive tape or plastic tie straps at the joint overlap. Additionally, place circumferential wraps of tape or plastic tie straps at two-foot intervals along the barrel of the pipe to help minimize the space between the polyethylene and the pipe.

END OF SECTION

SECTION 02627POLYETHYLENE SERVICE PIPE AND FITTINGSPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Furnish and install polyethylene pipe of the type and size and in the locations shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

- A. AWWA C901 (latest revision)
- B. ASTM D3350 and D2737 (latest revision)
- C. Service Brass: AWWA C-800 (latest revision)
- D. NSF-certified

PART 2 - PRODUCTS2.1 MATERIALS

- A. Pipe use: Domestic Water (buried exterior).
- B. Copper tubing size (CTS).
- C. Minimum working pressure 200 psi.
- D. Fittings:
 - 1. Buried Fittings: Waterworks brass, compression packed joint (CPPJ) fittings with beveled BUNA-N gaskets for a water tight seal.
 - 2. Acceptable manufacturer:
 - a. Mueller Company
 - b. Ford
 - c. or equal
 - 3. Insert stiffeners required.
 - 4. All brass fittings shall be "lead free".

PART 3 - EXECUTION3.1 INSTALLATION

- A. Jointing
 - 1. Packed on compression joints
 - a. Cut pipe squarely.
 - b. Ream or file pipe to remove burrs.
 - c. Seat pipe in fittings and tighten nut.
 - 2. Adapters: Use as required to connect to existing services.
- B. Bending Pipe
 - 1. Bend pipe by the method and to the radius to comply with the manufacturer's recommendations.
 - 2. Bend pipe with suitable tools to provide smooth bend free of any cracks or buckles.
 - 3. Provide "goose neck" in new services as shown on Drawings.

END OF SECTION

SECTION 02640

VALVES AND SPECIALTIES FOR BURIED APPLICATIONS - GENERAL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish, install, support, and test valves, hydrants, cocks, stops, and other specified materials, when applicable, (hereinafter referred to as "valves") in the location and of the size and quantities shown on the Drawings and/or as specified herein.

1.2 SUBMITTALS TO THE ENGINEER

- A. Submit shop drawings and operation and maintenance manuals in accordance with Section 01340 and the General Conditions of the Construction Contract.
- B. Catalog Data: Submit manufacturer's literature and illustrations for each size of valve furnished.
- C. Certificates: Submit manufacturer's certification that valves and accessories meet or exceed the requirements of these Specifications.

1.3 INSTALLATION

- A. Shipping:
 - 1. Prepare valves and accessories for shipment as required for complete protection.
 - 2. Seal valve ends to prevent entry of foreign matter into valve body.
 - 3. Box, crate, completely enclose, and protect valves and accessories from accumulations of foreign matter.
- B. Storage:
 - 1. Store valves and accessories in an area on the construction site protected from weather, moisture, or possible damage.
 - 2. Do not store valves or accessories directly on the ground.
- C. Handling: Handle valves and accessories to prevent damage of any nature to the interior and the exterior surfaces.

1.4 INSPECTION

- A. Carefully inspect all materials for:
 - 1. Defects in workmanship and materials.
 - 2. Removal of debris and foreign material in valve openings and seats.
 - 3. Proper functioning of all operating mechanisms.
 - 4. Tightness of all nuts and bolts.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials are specified in appropriate Sections in this Division.

- B. The specifications direct attention to certain required features of the valves but do not purport to cover all details entering into their design and construction. Nevertheless, the Contractor shall furnish the valves complete in all details and ready for operation for the intended purpose.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install valves and accessories in strict accordance with manufacturer's instructions and recommendations, as shown on the Drawings and/or as specified herein.
- B. Carefully erect all valves and support them in their respective positions free from distortion and strain.
- C. Independently support all valves connected to equipment, and in piping systems that cannot support valves.
- D. Repair any scratches, marks and other types of surface damage etc. with original coating as supplied by the factory.
- E. Install valves such that operators are plumb and vertical.
- F. All valves (and actuators where specified) shall be installed in a manner that will provide for proper clearances and ease of operation. In addition, valve operators must be capable of being rotated in 90° increments to facilitate field installation.

3.2 ADJUSTMENTS

- A. Check and adjust all valves and accessories for smooth operation.

3.3 TESTING

- A. The Contractor shall test all valves in the presence of the Water District Engineer to demonstrate that each valve complies with specified requirements and allowable leakage rates.

END OF SECTION

SECTION 02641GATE VALVESPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Furnish, install and test gate valves of the type(s) and size(s) and in the location(s) shown on the Drawings and as specified.
- B. Related Work Specified Elsewhere:
 - 1. "Valve Boxes" and "Ductile Iron Pipe & Fittings for Buried Applications" are specified in this Division.

1.2 QUALITY ASSURANCE

- A. All gate valves of same type and style shall be manufactured by one manufacturer.
- B. Acceptable Manufacturers:
 - 1. American Flow Control
 - 2. Kennedy
 - 3. Darling
 - 4. Mueller
 - 5. Or approved equal.

PART 2 - PRODUCTS2.1 MATERIALS

- A. Waterworks type NRS valves (AWWA):
 - 1. Valve Body, bonnet and stuffing box - Ductile iron (ASTM A395 or VA536 C1B), coated inside and out with fusion bonded epoxy meeting AWWA C550. Face-to-face dimensions shall comply with ANSI B16.10 and flanges to comply with ANSI B16.1.
 - 2. Resilient Wedge - Ductile iron wedge with bonded Nitrile elastomer covering.
 - 3. Stem – Copper Alloy, ASTM B584, or stainless-steel ASTM A276 or A473
 - 4. Stuffing box O-rings
 - a. Two O-rings, each nitrile rubber.
 - b. Capable of changing under pressure.
 - 5. Wedgenut - Bronze, ASTM B62, B148, B584 or B763.
 - 6. Bolting - stainless steel Type 18-8, ASTM F593, GP1
 - 7. End Connections
 - a. Buried valves - mechanical joints
 - 8. Operation
 - a. Buried valves - 2-inch square nut, cast iron, ASTM A126, C1B
 - b. GWD Opening Direction - left (**counterclockwise**)

9. Valve Pressure rating: 200 psi.
10. Standards - valves shall meet or exceed AWWA C515, latest edition.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install valves with stem position vertical.
- B. Valve box vertical and centered over operating nut.
- C. Valve box supported during backfilling and maintained vertical.
- D. Install and test in accordance with AWWA C515, latest revision.

END OF SECTION

SECTION 02642CORPORATION STOPSPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Furnish and install corporation stops of the type(s) and size(s) and in the location(s) shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

- A. All corporation stops shall be manufactured by one manufacturer.
- B. Qualifications of Manufacturer: Products have proven reliable in similar installations over a reasonable number of years.

PART 2 - PRODUCTS2.1 MATERIALS

- A. Constructed of brass, "lead free".
- B. Outlet shall be polyethylene pipe compression (PEP) joint. Stainless steel stiffeners required.
- C. Inlet shall have CC thread.
- D. Acceptable Manufacturers:
 - 1. Ford (F600)
 - 2. Red Head Mfg. Co.
 - 3. Mueller
 - 4. A. Y. McDonald
 - 5. Or equivalent

PART 3 - EXECUTION3.1 INSTALLATION

- A. Install at locations shown on the Drawings and as specified in accordance with manufacturer's instructions.
- B. Check and adjust all corporation stops for smooth operation.

END OF SECTION

SECTION 02643CURB STOPSPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Furnish and install curb stops of the type(s) and size(s) and in the location(s) shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

- A. All curb stops shall be manufactured by one manufacturer.
- B. Qualifications of Manufacturer: Products shall have proven reliable in similar installations over a reasonable number of years.
- C. Acceptable Manufacturers:
 - 1. A Y McDonald
 - 2. Ford Meter Box Company
 - 3. Mueller 300
 - 4. Red Hat

PART 2 - PRODUCTS2.1 PRODUCT CONSTRUCTION

- A. Constructed of brass, "lead free".
- B. Inlet and outlet shall be compression pack joint.
- C. Ball type.
- D. 300 psi working pressure shall be required.
- E. Open Left.

PART 3 - EXECUTION3.1 INSTALLATION

- A. Install at locations shown on the Drawings and in accordance with manufacturer's instructions.

3.2 ADJUSTMENTS

- A. Check and adjust all curb stops for smooth operation.

END OF SECTION

SECTION 02644HYDRANT ASSEMBLIES (REMOVE AND RESET)PART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Remove and reset hydrant assemblies of the type(s) and size (s) and in the locations (s) shown on the Drawings and as specified herein. Materials used in assembly should be new unless otherwise stated.
- B. Hydrant Assemblies consist of:
 - 1. Hydrant tee.
 - 2. 6-inch gate valve and valve box.
 - 3. 6-inch hydrant branch piping.
 - 4. Hydrant (Existing).
 - 5. Drainage material.
 - 6. Thrust blocking and joint bracing.
- C. Related Work Specified Elsewhere:
 - 1. Excavation and backfill, pavement, dewatering, borrow and bedding are specified in this appropriate MaineDOT specification sections.

1.2 QUALITY ASSURANCE

- A. Hydrants shall conform to AWWA C502 and all hydrants shall be from one manufacturer.
- B. Gate valves shall conform to AWWA C5090 (Resilient-Seated Gate Valves for Water Supply).

PART 2 - PRODUCTS2.1 MATERIALS

- A. Existing Fire Hydrants: As supplied.
- B. Gate Valves: Waterworks type non-rising stem AWWA valve as specified in the appropriate section of this Division.
- C. Valve Boxes:
 - 1. Cast iron, minimum thickness 3/10 inch with the word "WATER" cast in covers.
 - 2. Be of such length as required without full extensions.
 - 3. As specified in this Division.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Carefully excavate existing hydrant and place in a safe location for re-use.
- B. Install hydrants as shown in the details and using manufacturer's written instructions.
- C. No hydrant assembly shall be backfilled until approved by the Engineer.
- D. Provide drainage material and thrust blocks.
- E. Provide finish paint on all exposed surfaces. Color shall meet Owner's requirements as approved by the Engineer.

3.2 CLEANING

- A. Clean all hydrants of concrete, etc. and repaint as necessary to the satisfaction of the Engineer.

END OF SECTION

SECTION 02645CURB BOXESPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Furnish and install curb boxes of type (s) and size (s) and in the locations shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

- A. All curb boxes shall be manufactured by one manufacturer.
- B. Qualifications of Manufacturer: Products have proven reliable in similar installations over a reasonable number of years.
- C. Acceptable Manufacturers:
 - 1. Bingham & Taylor
 - 2. Or equivalent.

PART 2 - PRODUCTS2.1 MATERIALS AND FABRICATION

- A. Cast iron base piece, steel upper, cast iron lid, and threaded bronze plug with pentagon nut (Rope Thread).
- B. Extension type and arch pattern base with 5/8" diameter stainless steel minimum, 36" stationary rod with brass cotter pin. Yoke shall be integral to the rod.

PART 3 - EXECUTION3.1 INSTALLATION

- A. Install as shown on the Drawings and/or as requested by the Water District Engineer.
 - 1. When installation is complete no pressure shall be exerted by the curb box on either the curb stop or the service pipe.

END OF SECTION

SECTION 02646VALVE BOXESPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included: Furnish and install valve boxes of type(s) and size(s) and in the locations shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

- A. All valve boxes shall be manufactured by one manufacturer.
- B. Qualifications of Manufacturer: Products to have been proven reliable in similar installations over a reasonable number of years.
- C. Acceptable Manufacturers:
 - 1. Bingham & Taylor
 - 2. Or Equivalent

PART 2 - PRODUCTS2.1 MATERIALS

- A. The valve box shall be ductile iron, slip type two-piece integral base, 5-1/4 inch shaft. Top section with flanges.
- B. Cast or Ductile iron, with drop type covers and the word "Water" cast in.
- C. 36" minimum belled Base Section.

PART 3 - EXECUTION3.1 INSTALLATION

- A. Installation as shown on the Drawings and/or as specified herein.
 - 1. When installation is complete, no pressure shall be exerted by valve box on the water main or on the valve.
 - 2. Be of such length as required without full extension. Minimum lap 6 inches.

END OF SECTION

SECTION 02648

COUPLINGS & CONNECTORS FOR BURIED APPLICATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Furnish and install couplings and connectors of the type and size in the location shown on the Drawings and as specified herein.

1.2 QUALITY ASSURANCE

- A. Minimum pressure rating equal to that of the pipeline in which they are to be installed.
- B. Couplings and connectors, other than those specified herein, are subject to the Water District Engineer's approval.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. All Couplings and Connectors:
 - 1. Gasket Materials: Composition suitable for exposure to the liquids to be contained within the pipes.
 - 2. Diameters to properly fit the specific types of pipes on which couplings and connectors are to be installed.
- B. Sleeve Type Flexible Couplings
 - 1. Buried Couplings:
 - a. Ductile iron center sleeve and end rings made per ASTM A536, Grade 65-45-12
 - b. Two wedge-section virgin SBR or GPDM rubber gaskets compounded for water service,
 - c. Nuts and bolts shall be 304 stainless steel or ductile iron low alloy steel per ANSI/AWWA A21.11/C-111 with anti-galling protection.
 - d. Acceptable Manufacturers:
 - (1) Romac Industries Macro HP or Alpha
 - (2) Krausz Hymax
 - (3) Or Equal
- C. Solid Sleeve Couplings
 - 1. Solid sleeves shall be ductile iron with mechanical joint ends.
 - 2. Couplings shall meet AWWA/ANSI C-153/A21.53 and C-111/A21.11 for joints, and C-104/A21.4 for cement lining in sizes 3"-24".
 - 3. Nuts and bolts shall be ductile iron low alloy steel per ANSI/AWWA A21.11/C-111.
- D. Flexible Couplings for drain connections
 - 1. Rubber material with stainless steel clamps
 - 2. Must provide a positive seal against infiltration and exfiltration
 - 3. Coupling materials must conform to ASTM C443, C564, and D1869.

- E. Mechanical Joint Adaptors (Foster Adaptor®)
 - 1. Required to connect fittings and valves with mechanical joints
 - 2. Ductile iron construction mechanical joint bolt pattern.
 - 3. Bolts and nuts shall meet AWWA C-111.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Sleeve Type Couplings:
 - 1. Thoroughly clean pipe ends a minimum of 12-inches from the ends prior to installing couplings, and use soapy water as a gasket lubricant.
 - 2. Slip an end ring and gasket over each pipe and place the center sleeve centered over the joint.
 - 3. Insert the other pipe length into the center sleeve the proper distance.
 - 4. Press the gaskets and end rings evenly and firmly into the center sleeve flares.
 - 5. Insert the bolts, finger tighten and progressively tighten diametrically opposite nuts uniformly around the adapter with a torque wrench applying the torque recommended by the manufacturer.
 - 6. Insert and tighten the tapered threaded lock pins.
- B. Install thrust rods, supports, and other provisions to properly support pipe weight and axial equipment loads.

END OF SECTION

SECTION 02650

BURIED UTILITY MARKINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included:
 - 1. This work shall consist of providing and installing utility line markings above all buried lines installed as part of this contract and replacing existing markings disturbed as part of this contract.
- B. Related Work Specified Elsewhere:
 - 1. Pipe, excavation, backfill, insulation are specified in the appropriate Sections in this Division.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials and color shall be in accordance with latest AASHTO specifications for pipe and utility marking.
- B. Marking tape color shall be in accordance with latest American Public Works Association (APWA) Uniform Color Code and American National Standards Institute ANSI Standard Z535.1, Safety Color Code specifications for buried utility marking as noted in the Schedule below.
 - 1. Schedule

Marker Color	Buried Utility
Blue	Potable Water & Associated lines
Green	Sanitary Sewers, Storm Drain and other Drain lines
Orange	Telecommunication, signal, alarm
Purple	Reclaimed, Recycled, Irrigation Water and Slurry Lines
Red	Electric Power lines cables conduits and lighting cables
Yellow	Gas, Oil, Steam, Petroleum or Gaseous Material Lines

- 2. Warning Information shall be in Black Letters with typical wording of:
 - a. "CAUTION: BURIED (NAME OF UTILITY LINE) BELOW"
- C. For ferrous pipe material use 0.004" minimum polyethylene film; 6" wide clearly marking type of buried utility.
- D. For non-ferrous pipe material (e.g. Concrete, PVC, PE, etc.) use detection tape composite of polyethylene and metallic core 6" wide clearly marking type of buried utility.
- E. Seton Identification Products, New Haven, CT, Utility Safeguard LLC or equal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Marking tape shall be installed over utility lines centerline and buried 24" below grade.
- B. Markings damaged during opening of trench shall be reinstalled with 2' overlap at broken sections.

END OF SECTION

SECTION 02675

CLEANING, TESTING AND DISINFECTION OF WATER MAINS

PART 1 GENERAL

1.1 DESCRIPTION

- A. The work of this section includes the furnishing of all labor, tools, equipment and materials and performing all operations necessary for the flushing, pressure testing, leakage testing and chlorination of water mains as specified herein and as required to complete the work.

1.2 QUALITY ASSURANCE

- A. Standards (as applicable):
 1. All work shall be in accordance with this specification and AWWA C651. Where conflicts appear between these specifications and AWWA C651 the more stringent requirement shall apply.
 2. Chlorine solution for disinfecting water mains and appurtenances shall be made from either liquid sodium hypochlorite, or solid calcium hypochlorite, which shall conform to the latest AWWA B300 Standard for Hypochlorite.
 3. Chlorine test kits shall be as described in the current edition of AWWA M12 - Simplified Procedures for Water Examination.
 4. Disposal of chlorinated water as per AWWA C651, Appendix B.

1.3 COORDINATION

- A. Use of water will only be as approved and coordinated by the Owner.
- B. All flushing, pressure and leakage testing and chlorinating shall be done by the Contractor in the presence of the Water District Engineer and in the presence of the Owner or Owner's Representative in accordance with the requirements of the local and state plumbing codes and the appropriate Sections of these Specifications, at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Each temporary blow-off shall consist of a corporation cock, type K copper tubing and a curb stop, each of not less than 1-inch diameter.
- B. A pumping unit or proportionate feeder suitable for delivering a hypochlorite solution to the isolated main shall be provided. The unit used shall prevent chlorine solution from flowing back into the existing system.

PART 3 - EXECUTION

3.1 GENERAL

- A. Thoroughly clean all piping prior to testing. Remove all dirt, dust, oil, grease and other foreign material. Exercise care while cleaning to avoid damage to linings and

coatings.

- B. Supply all labor, equipment, materials, gages, and pumps required to conduct the tests. The drawings do not detail taps, gages, plugs and other related materials required to perform testing. These materials are the responsibility of the Contractor.
- C. Flushing, testing and chlorinating of the mainline shall closely follow main laying work. As the mainline is installed, it shall be tested approximately every 1,000 feet, or between line valves, whichever is less. Should the mainlines fail to be flushed, tested, and chlorinated as specified, the main laying work shall be suspended until the flushing, testing and chlorinating is done.
- D. Final acceptance of the water main shall be based on successful (negative) results of bacteriological tests, which shall be done on samples taken from the main following chlorination and final flushing. Locations of samples shall be determined by the Water District Engineer.
- E. The testing and related procedures described herein, shall be performed in the order listed.
- F. The Contractor, with the assistance of the Owner, shall fill mains as slowly as practicable so as not to cause dirty water and serious pressure drops within the existing system.

3.2 FLUSHING

- A. All new water mains, and existing water mains that have been drained and cut-into for making connections, shall be thoroughly flushed prior to pressure or leakage testing or final chlorination. Flushing shall be accomplished by partially opening and closing valves, hydrants, and blowoffs, several times, under expected line pressure, with flow velocities of not less than 2.5 feet per second, in the main. The size and number of hydrant outlets and/or main taps to provide the required flow (at 40 psi residual pressure) is as follows:

Minimum Required Flow and Openings Required to Flush Water Mains (Assuming 40 psi Residual Pressure in Water Mains)

Main Diameter (in.)	Flow Required to Produce 2.5 fps in Main (gpm)	Minimum Size of Taps (in.)	Hydrant Outlets Number	Hydrant Outlets Size (in.)
4	100	15/16	1	2-1/2
6	220	1-3/8	1	2-1/2
8	390	1-7/8	1	2-1/2
10	610	2-5/16	1	2-1/2
12	880	2-13/16	1	2-1/2
16	1565	3-5/8	2	2-1/2

1. If less than a 40 psi residual is available in the main, with the size tap shown above then a larger, or more tap(s) or hydrant outlets will be required, as determined by the Water District Engineer.
2. The length of time for flushing, at or above the minimum allowable velocity, shall be computed to allow a minimum of 3 times the total volume of water in

the main to be flushed to waste. Flushing shall be done in the presence of the Water District Engineer.

3.3 AIR REMOVAL

- A. Following flushing, and before applying the specified test pressure, air shall be completely expelled from the mains, valves, and hydrants. After all air has been expelled, the air blowoffs can be closed, and the test pressure applied.

3.4 PRESSURE TEST

- A. All new water mains, or any sections thereof, shall be subjected to a hydrostatic pressure of at least 1.5 times the working pressure that will exist at the point of testing, or 150 psi, whichever is greater. Test pressures shall meet the following requirements:
 - 1. Be of at least 2-hour duration.
 - 2. Be not less than 1.25 times the expected system working pressure at the highest point along the test section.
 - 3. Not exceed main or thrust-restraint design pressures.
 - 4. Not vary by more than + 5 psi for the duration of the test.
 - 5. Not exceed 2-times the rated pressure of the valves or hydrants when the pressure boundary includes closed valves or hydrants. Valves shall not be operated in either direction at differential pressure greater than the rated pressure.
 - 6. Not exceed 1.5-times the rated pressure of the valves when the pressure boundary of the test section includes closed butterfly valves or resilient seated gate valves.
- B. Each section of main shall be slowly raised to the specified test pressure for two separate periods. The first period shall be for 15-minutes, after which the pressure shall be allowed to drop slowly back to system pressure. The pressure shall then be slowly raised again to the specified test pressure and maintained for 2-hours. The test pressure shall be based on the elevation of the lowest point of the main, in the test section and shall be corrected to the elevation of the test gauge, as directed by the Water District Engineer. The test pressure shall be applied by means of a pump connected to the main, in an approved manner, and which will prevent any backflow into the existing system. Valves shall not be operated in either the closing or opening direction, at differential pressure greater than the rated pressure.
- C. Any exposed main, fittings, valves, hydrants and joints shall be carefully examined during the test. Any damaged or defective main, fittings, hydrants, or valves discovered following, or as a result of the pressure test shall be repaired or replaced with sound material. If faulty materials are removed and replaced, the pressure testing procedure shall be repeated.

3.5 LEAKAGE TEST

- A. Leakage testing shall be conducted concurrently with the pressure test.
- B. Leakage is defined as the quantity of water that must be pumped into the new main during the test, or any section thereof, required to maintain pressure within 5 psi of the starting test pressure. Leakage shall be recorded to the nearest one-tenth of a gallon. The Contractor shall employ qualified personnel throughout the testing. Leakage shall

not be measured by a drop in pressure over a period of time.

- C. Leakage in the test section must be less than an amount determined as follows:

$$L = \frac{SD(P^{0.5})}{148,000}, \text{ where}$$

L = allowable gallons of leakage per hour

S = the length of main tested, in feet

D = the nominal main diameter in inches

P = the average test pressure during the test, in psi

- D. The leakage formula is based allowable leakage of 11.65 gallons per day, per mile of main, per inch (nominal) of main diameter, at a pressure of 150 psi. Allowable leakage under various conditions is shown below.

Allowable Leakage (gph) per 1,000 Feet of Mainline

Average Test Pressure(psi)	Nominal Diameter (inches)						
	6	8	10	12	16	20	24
250	0.64	0.85	1.07	1.28	1.71	2.14	2.56
225	0.61	0.81	1.01	1.22	1.62	2.03	2.43
200	0.57	0.76	0.96	1.15	1.53	1.91	2.29
175	0.54	0.72	0.89	1.07	1.43	1.79	2.15
150	0.50	0.66	0.83	0.99	1.32	1.66	1.99
125	0.45	0.60	0.76	0.91	1.21	1.51	1.81
100	0.41	0.54	0.68	0.81	1.08	1.35	1.62

1. If the mainline under test contains sections of various diameters, the allowable leakage will be the sum of the computed leakage for each size.
 2. When testing against closed metal seated valves, an additional leakage shall be allowed per closed valve of 0.0078 gallons per hour, per inch of nominal valve diameter.
 3. When hydrants are in the test section, the test shall be made against the closed hydrant(s).
- E. Acceptance shall be determined on the basis of allowable leakage. If leakage in any test is greater than that specified, the Contractor shall locate and make repairs as necessary until the leakage is within the specified allowance.
1. All visible leaks are to be repaired regardless of the amount of leakage.
 2. All water mains shall be pressure and leakage tested in the presence of the Water District Engineer, in order to qualify for acceptance.

3.6 CHLORINATION

- A. The method of chlorination shall be the *Continuous Feed Method* as described hereinafter. Chlorination procedures will not be allowed until acceptable flushing and pressure testing has been performed and accepted. The continuous feed method

consists of the following steps:

1. Prior to the application of chlorine, confirm that valves are closed to prevent back-feeding chlorine solution into the existing system.
 2. At a point not more than 10 feet downstream from the beginning of the new main, fill the main with chlorinated potable water, having an initial concentration of 25 mg/l free chlorine residual.
 - a. Water from the existing distribution system or other approved source of supply shall flow at a constant measured rate, into the new main. In the absence of a meter, the rate may be approximated by measuring the discharge rate at the end of the test section with a pito-gauge or by measuring the time to fill a container of known volume.
 3. The application of chlorine solution shall continue until the entire main is filled with water having 25 mg/l of free available chlorine. To assure that 10 mg/l free chlorine residual concentration is achieved throughout the test section, the Contractor shall measure chlorine concentration at regular intervals.
- B. The amount of chlorine required to obtain a concentration of 25 mg/l per 100 feet of various diameter mains is as follows.

Chlorine Required to Obtain 25 mg/l per 100 feet of Various Diameters

Main Diameter (inches)	Sodium Hypochlorite (gallons)				Calcium Hypochlorite (ounces)
	5% Available Chlorine	10% Available Chlorine	12.5% Available Chlorine	15% Available Chlorine	65% Available Chlorine
4	0.03	0.02	0.02	0.01	0.02
6	0.08	0.04	0.03	0.03	0.75
8	0.13	0.07	0.06	0.06	1.30
10	0.20	0.10	0.09	0.07	2.10
12	0.28	0.15	0.12	0.10	2.90
16	0.50	0.25	0.22	0.17	5.30
20	0.80	0.40	0.34	0.28	8.40
24	1.30	0.60	0.50	0.40	12.00

1. The above quantities are to be added to a sufficient quantity of water, dissolved, and mixed. The solution shall be injected into the main as specified.
 2. The quantities shown are based on concentrations of available chlorine by volume. Extended or improper storage may have caused a loss of available chlorine.
- C. The chlorinated water shall be retained in the main for a minimum of 24-hours. At the end of this 24 hour period, retest portions of the main to confirm that a minimum of 10 mg/l free available chlorine residual exists in the main. If the residual chlorine is less than 10 mg/L, acceptable bacteria results may not be obtained.

3.7 FINAL FLUSHING OF CHLORINATED WATER

- A. After the initial 24-hour period, the heavily chlorinated water shall be flushed from the main until chlorine measurements show the concentration in water leaving the main is no higher than that generally prevailing in the system.
- B. The Contractor shall obtain approval of location(s) for discharging the heavily chlorinated water, which will result from the chlorination procedures. Great care shall be exercised in the selection of the rate of flow and the discharge points, in order to minimize complaints, and damage to public or private property.
- C. The heavily chlorinated water shall be suitably and thoroughly neutralized prior to disposal into the environment. In no case shall chlorinated or neutralized water be discharged directly into a water body. If necessary, state, federal, and local regulatory agencies should be contacted to determine special provisions for the disposal of heavily chlorinated water.

3.8 BACTERIOLOGICAL TESTS

- A. After final flushing and before the water main is placed in service, water samples shall be collected twice (24-hours apart) by the Water District Engineer or Owner and tested for bacteriological quality in accordance with standard methods. Water samples shall show the absence of coliform organisms and background bacteria.
- B. If, during construction, trench water has entered the main, or if in the opinion of the Water District Engineer excessive quantities of dirt or debris have entered the main, bacteriological samples shall be taken at intervals of approximately 200 feet and shall be identified as to location. Samples shall be taken of water that has stood in the main for at least 24-hours after final flushing has been completed.
- C. Samples shall be obtained through a corporation cock and copper tubing installed by the Contractor.
- D. The Water District Engineer or Owner shall deliver samples to a laboratory approved by the Department of Health Services for bacterial analysis. The Owner shall pay for the cost of analysis. Only after each consecutive sample is approved shall the mains be incorporated into the water system. In the event that positive reports of contamination are received, the mains shall be flushed and chlorinated as many times as may be necessary to obtain approved (negative) results.

3.9 RE-CHLORINATION

- A. If the initial chlorination fails to produce satisfactory bacteriological samples, the main shall be re-flushed and re-sampled.

3.10 CHLORINATION PROCEDURES WHEN CUTTING INTO OR REPAIRING EXISTING MAINS

- A. Trench Treatment. If during excavation the trench is either wet or filled with water, it is recommended that liberal quantities of hypochlorite tablets be applied to open trench areas to lessen the danger from pollution.
- B. The interior of all main and fittings used in making a repair shall be swabbed or sprayed with a 1 percent hypochlorite solution before they are installed.
- C. If valve and hydrant locations permit thorough flushing toward the work location from both directions, it shall be done. Flushing shall be started as soon as the repairs are completed and shall be continued until discolored water is eliminated.

- D. Slug Chlorination. Where practical and in addition to the procedures above, a section of main in which the break is located shall be isolated. All service connections shall be shut off, and the section flushed and chlorinated by the *Slug Chlorination* method. This method allows the chlorine dose to be increased to as much as 300 mg/l, and the contact time reduced to as little as 1-hour. After chlorination, the section shall be properly flushed until discolored water is eliminated and the water is free of noticeable chlorine odor.
- E. Bacteriological samples shall be taken after repairs. If the direction of flow is unknown, samples shall be taken on each side of the main break. If positive samples are recorded, daily sampling shall be continued until two consecutive negative samples are recorded.

END OF SECTION

SECTION 15092

PIPE SLEEVES & SEALS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Furnish and install wall sleeves and seals of the type(s) and sizes(s) and in the location(s) shown on the Drawings and specified herein.

1.2 QUALITY ASSURANCE

- A. Provide and install all sleeves of the types specified herein, as shown on the Drawings and as directed by the Water District Engineer.
- B. Provide sleeves that are airtight, gastight or watertight as required.
- C. Penetrations through fire rated walls, floors and ceiling shall have proper fire stopping, as specified in Section 07270.

PART 2 - PRODUCTS

2.1 TYPES AND LOCATIONS

- A. Rubber Link Compression Seals:
 - 1. Acceptable Manufacturers:
 - a. Link Seal by Thunderline Company
 - b. Innerlynx by Advance Products and Systems
 - c. Or equivalent.
 - 2. Multi-rubber link type with pressure plates, bolts, nuts and sealing element providing a leak proof seal. Model numbers provided below are based on Link Seal by Thunderline Company are to establish type and level of quality.
 - 3. General Service (Model C):
 - a. Glass Reinforced Nylon Pressure Plate.
 - b. Carbon steel zinc-phosphated nut and bolt.
 - c. Sealing element: EPDM rubber.
 - d. Temperature Rating: -40°F to 250°F.
 - 4. Corrosive Service: (Model S-316):
 - a. Use in the following locations: Sludge tanks, scum tanks, digesters, wetwells, manholes, dewatering rooms, headworks rooms, exterior tanks, chemical rooms, as shown on the Drawings.
 - b. Glass Reinforced Nylon Pressure Plate.
 - c. Bolt and nut, 1/8-8 stainless steel.
 - d. Sealing element: EPDM rubber.
 - e. Temperature Rating: -40°F to 250°F.
 - 5. Potable/Clean Water Service (Model S61)
 - a. Blue reinforced Nylon polymer pressure plates.
 - b. 316 stainless steel nuts and bolts.
 - c. Sealing element: Black EPDM NSF 61 certified.

- d. Temperature Rating: -40° to 250° F.
- e. Certified to NSF/ANSI standard 61.
- 6. High Temperature Service (Model T)
 - a. Steel zinc dichromate pressure plates.
 - b. Carbon steel with zinc dichromate finish nuts and bolts.
 - c. Sealing element: Silicone.
 - d. Temperature Rating: -67° to 400° F.
- 7. Refer to details on Process Drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Rubber Link Compression Seals: Install as required and in strict accordance with the manufacturer's instructions and recommendations.

END OF SECTION

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>
501(02)	Pipe Pile Splice	3/05/2015
501(03)	H – Pile Splice	3/05/2015
504(07)	Diaphragm & Cross Frame Notes	10/13/2015
504(10)	Drip Bar Details	9/06/2017
505(01)	Shear Connectors	10/24/2016
507(13)	Steel Bridge Railing	6/03/2015
507(14)	Steel Bridge Railing	6/03/2015
507(31)	Barrier – Mounted Steel Bridge	8/06/2015
526(02)	Temporary Concrete Barrier	2/01/2015
526(02)	Temporary Concrete Barrier	2/01/2018
609(9)	Concrete Slip Form Curb	5/06/2018
626(07)	Conduit Trench for Traffic Signals, Highway Signing and Lighting	5/17/2018
645(06)	H-Beam Posts Highway Signing	1/09/2018
652(06)	Construction Signs	10/24/2016
652(12)	Construction Traffic Control	10/24/2016
802(05)	Roadway Culvert End Slope Treatment	1/03/2017

SUPPLEMENTAL SPECIFICATIONS
(Corrections, Additions, & Revisions to Standard Specifications - November 2014)

SECTION 101
CONTRACT INTERPRETATION

101.1 Abbreviations Revise the definition of AWP to “**American Wood Protection Association**”.

101.2 Definitions

Page 1-5 – Remove the definition of Bridge in its entirety and replace with:

“Bridge A structure that is erected over a depression or an obstruction, such as water, a highway or a railway, and has an opening measured along the centerline of the Roadway of more than 20 feet between: The faces of abutments; spring line of arches; extreme ends of openings of box culverts, pipes or pipe arches; or the extreme ends of openings for multiple box culverts, pipes or pipe arches.”

Page 1-12 – Remove the definition of Large Culvert in its entirety and replace with:

“Large Culvert Any structure not defined as a Culvert or Bridge that provides a drainage or non-drainage opening under the Roadway or Approaches to the Roadway, with an opening that is 5 feet but less than 10 feet.”

Remove the definition of Minor Span in its entirety and replace with:

“Minor Span Same definition as Bridge, except having an opening of between 10 feet and 20 feet, inclusive.”

SECTION 103
AWARD AND CONTRACTING

Amend this Section by adding the following:

“103.1a Tie Bids - In the case where two responsive bids from responsible bidders are equal monetarily, the Department shall determine the apparent low bidder by flipping a coin. The coin shall have sides clearly marked as heads and tails. The contractor whose first letter in their official company name that comes first in the alphabet shall be heads.

If there are three bids, each bidder will flip the coin and the bidder with the odd toss will be the winner. (i.e. if the results are two heads and a tails, the bidder who had tails is the winner). For a three way tie, bidders may flip their own coin or have the Contracts Engineer flip for them.

The coin flip will occur at the next bid opening by the Contracts and Specifications Engineer or a designee. The tied bidders may attend the coin flip in person or watch on the internet as they choose.”

In 103.3.2 Notice of Determination Revise this section by removing sections A – M and replacing with the following A - K:

(A) Default(s) or termination(s) on past or current Contracts.

**(B) Failure on past or current Contracts to pay or settle all bills for labor, Materials or services;
to comply with directives of the Department, to fulfill warranty obligations, or to provide Closeout Documentation.**

(C) "Below Standard" performance as determined from the Department's Contractor's Performance Rating process.

(D) Insufficient bonding capability or Inability of the Contractor to obtain or retain performance or Payment Bonds meeting MDOT requirements, or a pattern of unsupported Claims.

(E) Failure to accept an Award of a Contract made by the Department.

(F) Failure to provide information requested by the Department in a timely manner.

(G) Debarment, suspension or a denial of prequalification or 'award of contract' by any federal, State, or local governmental procurement agency or the Contractor's Agreement to refrain from Bidding as part of the settlement with any such agencies or any of the reasons contained in Section 102.02 of the "Rules Regarding Debarment of Contractors", Maine Department of Transportation Register 17-229, Chapter 102 (October 2, 1985).

(H) Failure to demonstrate ability to do work to the satisfaction and at the sole discretion of the Department.

(I) Number of personnel working directly for the Contractor with applicable knowledge and experience is significantly below industry standards.

(J) Safety Record, Environmental Record, Civil Rights or Equal Opportunity Record significantly below industry standards.

(K) Serious misconduct that the Department reasonably determines will substantially and adversely affect the cost, quality or timeliness of Work, or the safety of Workers or the public, any deceptive, evasive or fraudulent statements or omissions contained in the Application, made or omitted at any interview or hearing, or otherwise made to or omitted from the Department; or any other substantial deficiencies in experience or conduct that are clearly below industry standards and that clearly demonstrate in the sole discretion of the Department, that the Contractor is "Not Qualified".

SECTION 104

GENERAL RIGHTS AND RESPONSIBILITIES

This Section shall be amended by adding the following two sub-sections:

104.3.8.1 Electronic Payroll Submission On federally funded projects the prime contractor, all subcontractors, and lower-tier subcontractors will submit their certified payrolls electronically utilizing the Elations system. There is no charge to the contracting community for the use of this service. The submission of paper payrolls will not be allowed or accepted. Additional information can be found at <http://www.maine.gov/mdot/contractors/> under the “Bidder Info” go to “Electronic Payroll System.”

104.3.8.2 Payment Tracking On federally funded projects the prime contractor and all subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System

104.4.10 Coordination of Road Closure / Bridge Closure / Bridge Width Restrictions

Revise the last sentence by adding a period after ‘Resident’; remove the “and” after Resident; and adding “**not covered by Pay Items**” between ‘costs’ and ‘will’. So that the last paragraph reads “**All Newspaper notices, radio announcements and any notifications will be subject to the approval of the Resident. All costs not covered by Pay Items will be considered incidental to the Contract.**”.

104.5.5 Prompt Payment of Subcontractors Add the following paragraph to this subsection:

C. Payment Tracking Federal Projects On federally funded projects, the prime contractor, subcontractors and lower-tier subcontractors will track and confirm the delivery and receipt of all payments through the Elation System. They will be responsible for entering all payments to all sub and lower tier contractors. MaineDOT will run a query monthly to ensure that contractors are complying and generate an e-mail to contractors who have not responded to confirm receipt of MaineDOT payment or contractor payment to lower tier subcontractors.

SECTION 105

GENERAL SCOPE OF WORK

105.2.5 Compliance with Health and Safety Laws Remove the second paragraph of this subsection in its entirety and replace with:

“For related provisions, see Sections 105.2.3 – Project Specific Emergency Planning, 105.3 – Traffic Control and Management and 105.4 – Maintenance of work.”

105.4.5 Special Detours Remove this subsection in its entirety and replace with:

“105.4.5 Maintenance of Existing Structures When a new Bridge or Minor Span is being installed on a new alignment and the existing structure is to remain in service, the Department will maintain the existing structure and the portions of the roadway required for maintaining traffic until such time that the new structure is opened to traffic and the existing structure is taken out of service. A similar situation exists when a new Bridge or Minor Span is being installed on the same alignment as the existing structure, requiring a temporary detour to be installed by the Contractor per Section 510, Special Detours, prior to removal of the existing structure. In this case, the Department will maintain the existing structure and the portions of the existing roadway required for maintaining traffic until such time that either the temporary detour is opened to traffic or the Contractor begins any work on the existing structure, including, but not limited to, repairs, modifications, moving, demolition or removal. In either case, once the new structure or temporary detour is opened to traffic, or the Contractor begins any work on the existing structure, the Contractor shall be solely responsible for all maintenance of the existing structure and the portions of the existing approaches that lie outside the new roadway or the temporary detour, respectively. This specification is not intended to supersede Standard Specification Section 104.3.11, Responsibility for Property of Others.”

105.6.2.4 Department Verification Add the following to the end of the first sentence: **“or other approved method, such as reference staking, to allow the Department to independently verify the accuracy of the work, as approved by the Department.”**

SECTION 106 **QUALITY**

106.3.4 Storage Revise this Section by adding the following sentence after the first sentence: **“Materials shall not be stored under or in close proximity to Highway Structures unless the Contractor receives written permission from the Resident.”**

106.4.1 General - In the first sentence, remove “When required by Special Provision,” and replace with **“When required elsewhere in the Contract,”**

Revise Subsection C by replacing the last sentence with the following:

Approval of both standard and project specific QCPs shall be as outlined in paragraph B above, with the exception that the initial 14 day review period for standard plans will begin on March 1, and that the supplemental project specific QCP for the project shall be submitted a minimum of 14 days prior to any related work being performed with an initial review period of 7 days.

SECTION 107 **TIME**

107.7.2 SCHEDULE OF LIQUIDATED DAMAGES

Revise this section by removing the numbers in the chart and replace with the following:

Original Contract Amount		Per Diem Amount of Liquidated Damages	
From More Than	To and Including	Calendar Day	
\$ 0	to \$ 100,000.00		\$250.00
\$ 100,000.00	to \$ 250,000.00		\$500.00
\$ 250,000.00	to \$ 500,000.00		\$650.00
\$ 500,000.00	to \$1,000,000.00		\$800.00
\$1,000,000.00	to \$2,000,000.00		\$1,000.00
\$2,000,000.00	to \$4,000,000.00		\$1,200.00
\$4,000,000.00	and More		\$2,100.00

SECTION 108 **PAYMENT**

108.3 Retainage - Remove the paragraph beginning with “ The Contractor may withdraw...” in its entirety.

108.4.1 Price Adjustment for Hot Mix Asphalt:

Remove this section in its entirety and replace with the following

For all contracts with hot mix asphalt in excess of 500 tons total, a price adjustment for performance graded binder will be made for the following pay items:

Item 403.102	Hot Mix Asphalt – Special Areas
Item 403.206	Hot Mix Asphalt - 25 mm
Item 403.207	Hot Mix Asphalt - 19 mm
Item 403.2071	Hot Mix Asphalt - 19 mm (Polymer Modified)
Item 403.2072	Hot Mix Asphalt - 19 mm (Asphalt Rich Base)
Item 403.208	Hot Mix Asphalt - 12.5 mm
Item 403.2081	Hot Mix Asphalt - 12.5 mm (Polymer Modified)
Item 403.209	Hot Mix Asphalt - 9.5 mm (sidewalks, drives, & incidentals)
Item 403.210	Hot Mix Asphalt - 9.5 mm
Item 403.2101	Hot Mix Asphalt - 9.5 mm (Polymer Modified)
Item 403.2102	Hot Mix Asphalt - 9.5 mm (Asphalt Rich Base)

Item 403.2104	Hot Mix Asphalt - 9.5 mm (Thin Lift Surface Treatment)
Item 403.21041	Hot Mix Asphalt - 9.5 mm (Polymer Modified Thin Lift Surface Treatment)
Item 403.211	Hot Mix Asphalt – Shim
Item 403.2111	Hot Mix Asphalt – Shim (Polymer Modified)
Item 403.212	Hot Mix Asphalt - 4.75 mm (Shim)
Item 403.213	Hot Mix Asphalt - 12.5 mm (base and intermediate course)
Item 403.2131	Hot Mix Asphalt - 12.5 mm (base and intermediate course Polymer Modified)
Item 403.2132	Hot Mix Asphalt - 12.5 mm (Asphalt Rich Base and intermediate course)
Item 403.214	Hot Mix Asphalt - 4.75 mm (Surface)
Item 403.235	Hot Mix Asphalt (High Performance Rubberized HMA)
Item 403.301	Hot Mix Asphalt (Asphalt Rubber Gap-Graded)
Item 404.70	Colored Hot Mix Asphalt – 9.5mm (Surface)
Item 404.72	Colored Hot Mix Asphalt – 9.5mm (Islands, sidewalks, & incidentals)
Item 461.13	Light Capital Pavement
Item 461.210	9.5 mm HMA - Paver Placed Surface
Item 462.30	Ultra-Thin Bonded Wearing Course
Item 462.301	Polymer Modified Ultra-Thin Bonded Wearing Course

Price adjustments will be based on the variance in costs for the performance graded binder component of hot mix asphalt. They will be determined as follows:

The quantity of hot mix asphalt for each pay item will be multiplied by the performance graded binder percentages given in the table below times the difference in price between the base price and the period price of asphalt cement. Adjustments will be made upward or downward, as prices increase or decrease.

Item 403.102–6.2%
Item 403.206–4.8%
Item 403.207–5.2%
Item 403.2071–5.2%
Item 403.2072–5.8%
Item 403.208–5.6%
Item 403.2081–5.6%
Item 403.209–6.2%
Item 403.210–6.2%
Item 403.2101–6.2%
Item 403.2102–6.8%
Item 403.2104–6.2%
Item 403.21041–6.2%
Item 403.211–6.2%
Item 403.2111–6.2%
Item 403.212–6.8%
Item 403.213–5.6%
Item 403.2131–5.6%

Item 403.2132–6.2%
Item 403.214–6.8%
Item 403.235–5.5%
Item 403.301–6.2%
Item 404.70–6.2%
Item 404.72–6.2%
Item 461.13–6.5%
Item 461.210 – 6.4%
Item 462.30–0.0021 tons/SY
Item 462.301–0.0021 tons/SY

Hot Mix Asphalt: The quantity of hot mix asphalt will be determined from the quantity shown on the progress estimate for each pay period.

Base Price: The base price of performance graded binder to be used is the price per standard ton current with the bid opening date. This price is determined by using the average New England Selling Price (Excluding the Connecticut market area), as listed in the Asphalt Weekly Monitor.

Period Price: The period price of performance graded binder will be determined by the Department by using the average New England Selling Price (Excluding the Connecticut market area), listed in the Asphalt Weekly Monitor current with the paving date. The maximum Period Price for paving after the adjusted Contract Completion Date will be the Period Price on the adjusted Contract Completion Date.

SECTION 109 **CHANGES**

109.5.1 Definitions - Types of Delays

Delete Paragraph 'A' in its entirety and replace with:

"A. Excusable Delay Except as expressly provided otherwise by this Contract, an "Excusable Delay" is a Delay to the Critical Path that is directly and solely caused by (1) a weather related Event of such an unusually severe nature that a Federal Emergency Disaster is declared. The Contractor will only be entitled to an adjustment of time if the Project falls within the geographic boundaries prescribed under the disaster declaration. or (2) a flooding event at the effected location of the Project that results in a Q25 headwater elevation, or greater, but less than a Q50 headwater elevation. Theoretical headwater elevations will be determined by the Department; actual headwater elevations will be determined by the Contractor and verified by the Department or (3) An Uncontrollable Event."

SECTION 110 **INDEMNIFICATION, BONDING AND INSURANCE**

110.3.9 Administrative & General Provisions

B. Defense of Claims Amend this section by adding the following sentence to the end:
“The Contractor’s insurer shall name the Department of Transportation as a released party (Releasee”) on any release or settlement agreement for settled claims.”

APPENDIX A TO DIVISION 100

Remove Section D in its entirety as this is now covered in Section 105.10 EQUAL OPPORTUNITY AND CIVIL RIGHTS.

SECTION 203
EXCAVATION AND EMBANKMENT

203.02 Materials

At the bottom of page 2-12, add as the first item in the list:

Crushed Stone, ¾ inch 703.13

203.042 Rock Excavation and Blasting

On page 2-16, add the word **“No”** to the third sentence in Section 5 Submittals, Subsection V, 1 so that it reads:

“No blasting products will be allowed on the job site if the date codes are missing.”

203.09 Preparation of Embankment Area Revise the first sentence of the second paragraph so that it reads:

“When fill material is placed against existing slopes or previously placed fill, the interface shall be continuously benched by excavating steps of sufficient width to permit operations of placing and compacting the additional material.”

SECTION 304
AGGREGATE BASE AND SUBBASE COURSE

304.02 – Aggregate Add the following sentence before the sentence starting with “When designated on the plans...”: **“Aggregate Base Course – Type C will be capped with 2” of millings or Untreated Aggregate Surface Course – Type B. Payment for this material will be made under 304.16”**

Revise the sentence beginning “When designated on the Plans, Type E...” by removing “When designated on the Plans,” so it reads **“Type E subbase may be used 9 inches below and lower beneath the pavement.”**

SECTION 307
FULL DEPTH RECYCLED PAVEMENT

Remove this Section in its entirety and replace with:

SECTION 307
FULL DEPTH RECYCLING
(UNTREATED OR TREATED WITH EMULSIFIED ASPHALT STABILIZER)

307.01 Description This work shall consist of pulverizing a portion of the existing roadway structure into a homogenous mass, adding an emulsified asphalt stabilizer (if required) to the depth of the pulverized material specified in the contract, placing and compacting this material to the lines, grades, and dimensions shown on the plans or established by the Resident.

MATERIALS

307.02 Pulverized Material Pulverized material shall consist of the existing asphalt pavement layers and one inch or more as specified of the underlying gravel, pulverized and blended into a homogenous mass. Pulverized material will be processed to 100% passing a 2 inch square mesh sieve.

307.021 New Aggregate and Additional Recycled Material New aggregate, if required by the contract, shall meet the requirements of Subsection 703.10 - Aggregate for Untreated Surface Course and Leveling Course, Type A. Aggregate Subbase Course Gravel Type D processed to 100 percent passing a 2 inch square mesh sieve and meeting the requirements of 703.06 – Aggregate for Base and Subbase may be used in areas requiring depths greater than 2 inches. New aggregate, will be measured and paid for under the appropriate item.

Recycled material, if required, shall consist of salvaged asphalt material from the project or from off-site stockpiles that has been processed before use to 100 percent passing a 2 inch square mesh sieve. Recycled material shall be conditionally accepted at the source by the Resident. It shall be free of winter sand, granular fill, construction debris, or other materials not generally considered asphalt pavement.

Recycled material generated and salvaged from the project shall be used within the roadway limits to the extent it is available as described in 307.09. No additional payment will be made for material salvaged from the project.

Recycled material supplied from off-site stockpiles shall be paid for as described in the contract, or by contract modification.

307.022 Emulsified Asphalt Stabilizer. If required, the emulsified asphalt stabilizer shall be grade MS-2, MS-4, SS-1, or CSS-1 meeting the requirements of Subsection 702.04 Emulsified Asphalt.

307.023 Water Water shall be clean and free from deleterious concentrations of acids, alkalis, salts or other organic or chemical substances.

307.024 Portland Cement If required, Portland Cement shall be Type I or II meeting the requirements of AASHTO M85.

307.025 Hydrated Lime If required, Hydrated Lime shall meet the requirements of AASHTO M216.

EQUIPMENT

307.03 Pulverizer The pulverizer shall be a self-propelled machine, specifically manufactured for full-depth recycling work and capable of reducing the required existing materials to a size that will pass a 2 inch square mesh sieve. The machine shall be equipped with standard automatic depth controls and must maintain a consistent cutting depth and width. The machine also shall be equipped with a gauge to show depth of material being processed.

307.04 Liquid Mixer Unit or Distributor. If treatment of the recycled layer with emulsified asphalt is required by the contract, a liquid mixing unit or distributor shall be used to introduce the emulsified asphalt stabilizer into the pulverized material. The mixing unit shall contain a liquid distribution and mixing system which has been specifically manufactured for full-depth recycling work, capable of mixing the pulverized material with an evenly metered distribution of emulsified asphalt into a homogeneous mixture, to the depth and width required.

The mixing unit shall be designed, equipped, maintained, and operated so that emulsified asphalt stabilizer at constant temperature may be applied uniformly on variable widths of pulverized material up to 6 feet at readily determined and controlled rates from 0.01 to 1.06 gal/yd² with uniform pressure and with an allowable variation from any specified rate not to exceed 0.01 gal/ yd². Mixing units shall include a tachometer, pressure gages, and accurate volume measuring devices or a calibrated tank and a thermometer for measuring temperatures of tank contents.

307.041 Cement or Lime Spreader If required by the contract, spreading of the Portland Cement or Hydrated Lime shall be done with a spreader truck designed to spread dry particulate (such as Portland Cement or Lime) or other approved means to insure a uniform distribution across the roadway and minimize fugitive dust. Pneumatic application, including through a slotted pipe, will not be permitted. Other systems that have been developed include fog systems, vacuum systems, etc. Slurry applications may also be accepted. The Department reserves the right to accept or reject the method of spreading cement. The Contractor shall provide a method for verifying that the correct amount of cement is being applied.

307.05 Placement Equipment Placement of the Full Depth recycled material to the required slope and grade shall be done with an approved highway grader or by another method approved by the Resident.

307.06 Rollers The full depth recycled material shall be rolled with a vibratory pad foot roller, a vibratory steel drum soil compactor and a pneumatic tire roller. The pad foot roller drum shall have a minimum of 112 tamping feet 3 inches in height, a minimum contact area per foot of 17 inch², and a minimum width of 84 inches. The vibratory steel drum roller shall have a

minimum 84 inch width single drum. The pneumatic tire roller shall meet the requirements of Section 401.10 and the minimum allowable tire pressure shall be 85 psi.

MIX DESIGN

If treatment of the recycled layer with emulsified asphalt is required by the contract, the Department will supply a mix design for the emulsified asphalt stabilized material based on test results from pavement and soil analysis taken to the design depth. The Department will provide the following information prior to construction:

1. Percent of emulsified asphalt to be used.
2. Quantity of lime or cement to be added.
3. Optimum moisture content for proper compaction.
4. Additional aggregate (if required).

After a test strip has been completed or as the work progresses, it may be necessary for the Resident to make necessary adjustments to the mix design. Changes to compensation will be in accordance with the Mix Design Special Provision.

CONSTRUCTION REQUIREMENTS

307.06 Pulverizing The entire depth of existing pavement shall be pulverized together with 1 inch or more of the underlying gravel into a homogenous mass. All pulverizing shall be done with equipment that will provide a homogenous mass of pulverized material, processed in-place, which will pass a 2 inch square mesh sieve.

307.07 Weather Limitations Full depth recycled work shall be performed when;

- A. Recycling operations will be allowed between May 15th and September 15th inclusive in Zone 1 - Areas north of US Route 2 from Gilead to Bangor and north of Route 9 from Bangor to Calais. Recycling will be allowed between May 1st and September 30th inclusive in Zone 2 - Areas south of Zone 1 including the US Route 2 and Route 9 boundaries.
- B. The atmospheric temperature, as determined by an approved thermometer placed in the shade at the recycling location, is 50°F and rising.
- C. When there is no standing water on the surface.
- D. During generally dry conditions, or when weather conditions are such that proper pulverizing, mixing, grading, finishing and curing can be obtained using proper procedures, and when compaction can be accomplished as determined by the Resident.
- E. When the surface is not frozen and when overnight temperatures are expected to be above 32°F.
- F. Wind conditions are such that the spreading of lime or cement on the roadway ahead of the recycling machine will not adversely affect the operation.

307.08 Surface Tolerance The complete surface of the Full Depth Recycled course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of $\frac{3}{8}$ inch.

307.09 Full Depth Recycling Procedure New aggregate or recycled material meeting the requirements of Section 307.021 - New Aggregate and Additional Recycled Material, shall be added as necessary to restore cross-slope and/or grade before pulverizing. Locations will be shown on the plans or described in the construction notes. The Resident may add other locations while construction of the project is in progress. The Contractor will use recycled material to the extent it is available, in lieu of new aggregate. The material shall then be pulverized, processed, and blended into a homogeneous mass passing a 2 inch square mesh sieve. Material found not pulverized down to a 2 inch size will be required to be reprocessed by the recycler with successive passes until approved by the Resident.

Should the Contractor be required to add new aggregate or recycled material to restore cross-slope and/or grade after the initial pulverizing process, those areas will require re-processing to blend into a homogenous mass passing a 2 in square mesh sieve.

Sufficient water shall be added during the recycling process to maintain optimum moisture for compaction.

The resultant material from the initial pulverizing processes shall be graded and compacted to the cross-slope and profile shown on the plans or as directed by the Resident. The Contractor will also be responsible for re-establishing the existing profile grade. The completed surface of the full depth recycled course shall be shaped and maintained to a tolerance, above or below the required cross sectional shape, of $\frac{3}{8}$ inch. Areas not meeting this tolerance will be repaired as described in Section 307.091. The initial pulverizing process density requirements will be the same as Section 307.101 unless otherwise directed by the Resident.

Additives, if required, shall be introduced following completion of the initial pulverizing and blending process. Emulsified asphalt stabilizer shall be incorporated into the top of the processed material as specified in section 307.04 to the depth specified in the contract by use of the liquid mixer unit or a distributor, at the rate specified in the mix design. The emulsified asphalt shall then be uniformly blended into a homogeneous mass until an apparent uniform distribution has occurred. The rate of application may be adjusted as necessary by the Resident. Cement or lime shall be introduced as described in section 307.041. The resultant material shall be graded and compacted to the cross-slope and profile shown on the plans or as directed by the Resident. The Contractor will also be responsible for re-establishing the existing profile grade.

After final compaction, the roadway surface shall be treated with a light application of water, and rolled with pneumatic-tired rollers to create a close-knit texture. The finished layer shall be free from:

- A. Surface laminations.
- B. Segregation of fine and coarse aggregate.
- C. Corrugations, centerline differential, potholes, or any other defects that may adversely

affect the performance of the layer, or any layers to be placed upon it. The Contractor shall protect and maintain the recycled layer until a lift of pavement is applied. Any damage or defects in the layer shall be repaired immediately. An even and uniform surface shall be maintained. The recycled surface shall be swept prior to hot mix asphalt overlay placement.

307.091 Repairs Repairs and maintenance of the recycled layers, resulting from damage caused by traffic, weather or environmental conditions, or resulting from damage caused by the Contractor's operations or equipment, shall be completed at no additional cost to the Department.

For recycled layers stabilized with emulsified asphalt, low areas will be repaired using a hot mix asphalt shim. Areas up to 1 inch high can be repaired by milling or shimming with hot mix asphalt. Areas greater than 1 inch high will be repaired using a hot mix asphalt shim. All repair work will be done with the Resident's approval at the Contractor's expense.

TESTING REQUIREMENTS

307.10 Quality Control The Contractor shall operate in accordance with the approved Quality Control Plan (QCP) to assure a product meeting the contract requirements. The QCP shall meet the requirements of Section 106.4 - Quality Control and this Section. The Contractor shall not begin recycling operations until the Department approves the QCP in writing. Prior to performing any recycling process, the Department and the Contractor shall hold a Pre-recycle conference to discuss the recycling schedule, type and amount of equipment to be used, sequence of operations, and traffic control. A copy of the QC random numbers to be used on the project shall be provided to the Resident. All field supervisors including the responsible onsite recycling process supervisor shall attend this meeting.

The QCP shall address any items that affect the quality of the Recycling Process including, but not limited to, the following:

- A. Sources for all materials, including New Aggregate and Additional Recycled Material.
- B. Make and type of rollers including weight, weight per inch of steel wheels, and average contact pressure for pneumatic tired rollers.
- C. Testing Plan.
- D. Recycling operations including recycling speed, methods to ensure that segregation is minimized, grading and compacting operations.
- E. Methods for protecting the finished product from damage and procedures for any necessary corrective action.
- F. Method of grade checks.
- G. Examples of Quality Control forms.
- H. Name, responsibilities, and qualifications of the Responsible onsite Recycling Supervisor experienced and knowledgeable with the process.
- I. A note that all testing will be done in accordance with AASHTO and MDOT/ACM procedures.

The Project Superintendent shall be named in the QCP, and the responsibilities for successful implementation of the QCP shall be outlined.

The Contractor shall sample, test, and evaluate the full depth reclamation process in accordance with the following minimum frequencies:

MINIMUM QUALITY CONTROL FREQUENCIES

Test or Action	Frequency	Test Method
Density	1 per 1000 feet / lane	AASHTO T 310
Air Temperature	4 per day at even intervals	
Surface Temperature	At the beginning and end of each days operation	
Yield of all materials (Daily yield, yield since last test, and total project yield.)	1 per 1000 ft/lane	

The Department may view any QC test and request a QC test at any time. The Contractor shall submit all QC test reports and summaries in writing, signed by the appropriate technician, to the Department's onsite representative by 1:00 P.M. on the next working day, except when otherwise noted in the QCP due to local restrictions. The Contractor shall make all test results, including randomly sampled densities, available to the Department onsite.

The Contractor shall cease recycling operations whenever one of the following occurs:

- A. The Contractor fails to follow the approved QCP.
- B. The Contractor fails to achieve 98 percent density after corrective action has been taken.
- C. The finished product is visually defective, as determined by the Resident.
- D. The computed yield differs from the mix design by 10 percent or more.

Recycling operations shall not resume until the Department approves the corrective action to be taken.

307.101 Test Strip The contractor shall assemble all items of equipment for the recycling operation on the first day of the recycling work. The Contractor shall construct a test strip for the project at a location approved by the Resident. The Responsible onsite Recycling Supervisor will work with Department personnel to determine the suitability of the mixed material, moisture control within the mixed material, and compaction and surface finish. The test strip section is required to:

- A. Demonstrate that the equipment and processes can produce recycled layers to meet the requirements specified in these special provisions.
- B. Determine the effect on the gradation of the recycled material by varying the forward speed of the recycling machine and the rotation rate of the milling drum.

- C. Determine the optimum moisture necessary to achieve proper compaction of the recycled layer.
- D. Determine the sequence and manner of rolling necessary to obtain the compaction requirements and establish a target density. The Contractor and the Department will both conduct testing with their respective gauges at this time.

The test strip shall be at least 300 feet in length of a full lane-width (or a half-road width). Full recycling production will not start until a passing test strip has been accomplished. If a test strip fails to meet the requirements of this specification, the Contractor will be required to repair or replace the test strip to the satisfaction of the Resident. Any repairs, replacement, or duplication of the test strip will be at the Contractor's expense.

After the test strip has been pulverized, and the roadway brought to proper shape, the Contractor shall add water until it is determined that optimum moisture has been obtained. The test strip shall then be rolled using the specified compaction equipment as directed until the density readings show an increase in dry density of less than 1 pcf for the final four roller passes of each roller. The Contractor and Department will each determine a target density using their respective gauges by performing several additional density tests and averaging them. The average of these tests will be used as the target density of the recycled material for QC and Acceptance purposes.

Following completion of the test strip, compaction of the material shall continue until a density of not less than 98 percent of the test strip target density has been achieved for the full width and depth of the layer. During the construction and compaction of the Full Depth Recycled base, should three consecutive Acceptance test results for density fail to meet a minimum of 95 percent of the target density, or exceed 102 percent of target density, a new test strip shall be constructed.

ACCEPTANCE TEST FREQUENCY

Property	Frequency	Test Method
In-place Density	1 per 2000 ft / lane	AASHTO T 310

307.102 Curing. No new pavement shall be placed on the full depth recycled pavement until curing has reduced the moisture content to 1 percent or less by total weight of the mixture, or a curing period of 4 days has elapsed, whichever comes first.

307.11 Method of Measurement Full Depth Recycled Pavement (Untreated or Treated with Emulsified Asphalt Stabilizer) will be measured by the square yard.

307.12 Basis of Payment The accepted quantity of Full Depth Recycled Asphalt Pavement (Untreated or Treated with Emulsified Asphalt Stabilizer) will be paid for at the contract unit price per square yard, complete in-place which price will be full compensation for furnishing all equipment, materials and labor for pulverizing, blending, placing, grading, compacting, and for all incidentals necessary to complete the work.

The addition of materials to restore profile grade and/or cross-slope in areas shown on the plans or described in the construction notes will be paid separately under designated pay items within the contract. No additional payment will be made for materials salvaged from the project.

Payments will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
307.331 Full Depth Recycled Pavement (Untreated)	Square Yard
307.332 Full Depth Recycled Pavement (with Emulsified Asphalt Stabilizer) 5 in. depth	Square Yard
307.333 Full Depth Recycled Pavement (with Emulsified Asphalt Stabilizer) 6 in. depth	Square Yard

SECTION 411 **UNTREATED AGGREGATE SURFACE COURSE**

411.02 – Aggregate Add the following to the end of the first sentence: “- Type A”

SECTION 501 **FOUNDATION PILES**

501.05 – Method of Measurement

b. **Piles Furnished** – After the second sentence, add the sentence “**Measurement will not include any pile tips**”.

c. **Piles in Place** – Add the sentence to the end of the second paragraph, “**Measurement will include the pile tips**”.

d. **Pile Tips** – Add the words “**on the Pile**” to the end of the sentence.

SECTION 502 **STRUCTURAL CONCRETE**

502.05 Composition and Proportioning

Replace Table 1 with

TABLE 1

Concrete CLASS	Minimum Compressive Strength (PSI)	Permeability as indicated by Surface Resistivity (KOhm-cm)	Entrained Air (%)		Notes
			LSL	USL	
S	3,000	LSL N/A	N/A	N/A	4,5
A	4,000	14	6.0	9.0	1,4,5
P	-----	-----	5.5	7.5	1,2,3,4
LP	5,000	17	6.0	9.0	1,4,5
Fill	3,000	N/A	6.0	9.0	4,5

In the list of information submitted by the contractor for a mix design:

Item J Replace “Target Coulomb Value.” with “Target KOhm-cm Value.”

Note #1 - Remove, “...**Standard Specification Section 711.05, Protective Coating for Concrete Surfaces, and per the manufacturer’s recommendations, at no additional cost to the Department.**” and replace with, “...**Standard Specification Section 515, Protective Coating for Concrete Surfaces, at no additional cost to the Department.**”

502.1703 Acceptance Methods A and B

In the paragraph that starts with “The Department will take Acceptance...” Remove the word chloride from chloride permeability in the last sentence.

Replace the paragraph starting with “Rapid Chloride Permeability specimens...” With the following:

“Surface Resistivity specimens will be tested by the Department in accordance with AASHTO TP-95 at an age $\geq$ 56 days. Four 4 inch x 8 inch cylinders will be cast per subplot placed. The average of three concrete specimens per subplot will constitute a test result and this average will be used to determine the permeability for pay adjustment computations.”

502.1706 Acceptance Method C

Remove in its entirety and Replace with:

502.1706 Acceptance Method C The Department will determine the acceptability of the concrete through Acceptance testing. Acceptance tests will include compressive strength, air content and permeability. Method C concrete not meeting the requirements listed in Table 1 shall be removed and replaced at no cost to the Department. At the Department's sole discretion, material not meeting requirements may be left in place and paid for at a reduced price as described in Section 502.195.

502.1707 Resolution of Disputed Acceptance Test Results
Section B

Remove "Rapid Chloride" from the section heading.
In paragraph 4 replace T-277 with TP-95

502.192 Pay Adjustment for Chloride Permeability

Remove "Chloride" from the heading and from the first sentence.

Replace the sentence that starts with "values greater than..." and replace with "values less than 10 KOhms-cm for Class A concrete or 11 KOhms-cm for Class LP concrete shall be subject to rejection and replacement, at no additional cost to the Department."

502.194 Pay Adjustments for Compressive Strength, Chloride Permeability and Air Content, Methods A and B

Remove the word "Chloride" from the section heading and from the equation for CPF.

502.195 Pay Adjustment Method C

In Table 6: Method C Pay Reductions (page 5-53)
Under "Entrained Air" for "Class Fill", in the first line,
change from "< 4.0 (Removal)" to "< **4.5 (Removal)**"

In Table 6: Method C PAY REDUCTIONS, revise the Chloride Permeability section by removing it in its entirety and replacing it with:

Surface Resistivity {Permeability in Kohm-cms and Pay Reduction per CY}			
15-16 (\$50)	13 (\$25)	N/A	N/A
13-14 (\$75)	12(\$50)	N/A	N/A
12 (\$100)	11 (\$75)	N/A	N/A
11 (\$125)	10 (\$100)	N/A	N/A
< 11 (Removal)	< 10 (Removal)	N/A	N/A

SECTION 503 **REINFORCING STEEL**

503.06 Placing and Fastening Revise this Subsection by removing, in its entirety, the paragraph which begins, “Stainless steel reinforcement shall not be tied to any other type of reinforcement.....”

SECTION 504 **STRUCTURAL STEEL**

504.26 Welding Remove the second paragraph beginning with “The range of heat....” in its entirety.

504.29 Welding ASTM A 709 HPS 70W Steel. Remove the third paragraph beginning with “Make Weld runoff tabs...” in its entirety.

SECTION 510 **SPECIAL DETOURS**

510.032 Geometric and Approach Design a. Horizontal alignment
The third paragraph of this section is revised to read as follows:

“The roadway width shall be increased on curved portions of the Special Detour to account for the off tracking characteristics of WB-62 vehicle in accordance with **the AASHTO publication A Policy On Geometric Design of Highways and Streets (the Green Book), chapter 3 table entitled Design Widths of Pavements for Turning Roadways.**”

SECTION 527 **ENERGY ABSORBING UNIT**

527.02 Materials This section is revised to read as follows.

527.02 Materials Work Zone Crash Cushions must comply with NCHRP Report 350. Work Zone Crash Cushions shall be selected from MaineDOT’s Qualified Products List of Crash Cushions / Impact Attenuators, or an approved equal.

SECTION 534 **PRECAST STRUCTURAL CONCRETE**

534.14 Process Control Test Cylinders
Revise this subsection to read:

“534.14 Acceptance and Quality Control Testing of Concrete Refer to Section 712.061.”

SECTION 535

PRECAST, PRESTRESSED CONCRETE SUPERSTRUCTURE

Section 535.08 – Quality Assurance

Revise the second paragraph to read:

“The QAI will perform acceptance sampling and testing and will witness or review documentation, workmanship and testing to assure the Work is being performed in accordance with the Contract Documents.”

Section 535.15 - Process Control Test Cylinders

Revise the first paragraph to read:

“535.15 Acceptance and Quality Control Testing of Concrete Acceptance of structural precast/prestressed units, for each day’s production, will be determined by the Department, based on compliance with this specification and satisfactory concrete testing results. At least once per week, the QAI will make 2 concrete cylinders (6 cylinders when the Contract includes permeability requirements) for use by the Department; cylinders shall be standard cured in accordance with AASHTO T23 (ASTM C31). The QAI will perform entrained air content and slump flow testing, determine water-cement ratio and determine temperature of the sampled concrete at the time of cylinder casting. All testing equipment required by the QAI to perform this testing shall be provided in accordance with Standard Specification Section 502.041, Testing Equipment. In addition, the Contractor shall provide a slump cone meeting the requirements of AASHTO T 119. Providing and maintaining testing and curing equipment shall be considered incidental to the work and no additional payment will be made.”

Insert the following as the second paragraph of Section 535.15:

“Quality Control concrete test cylinders shall be made for each day’s cast and each form bed used. Cylinders tested to determine strand release strength and design strength shall be field cured in accordance with AASHTO T23 (ASTM C31). 28 day cylinders shall be standard cured. Record unit identification, entrained air content, water-cement ratio, slump flow and temperature of the sampled concrete at the time of cylinder casting.”

SECTION 604

MANHOLES, INLETS CATCH BASINS

604.04 Adjusting Catch Basins and Manholes,

Add the following paragraph to the end of 604.04 b:

The Department will allow the use of metal ring inserts set into the manhole top frame or composite risers placed beneath the manhole frame to adjust manhole slope and grade for paving projects. The use of metal ring inserts shall be in accordance with 604.04 d. Ring Insert Requirements. The use of composite risers shall be in accordance with 604.04 e. Composite Riser Requirements.

Add the following paragraph after the first paragraph of 604.04 c:

The Department will allow the use of metal ring inserts set into the manhole top frame or composite risers placed beneath the manhole frame to adjust manhole slope and grade for paving projects. The use of metal ring inserts shall be in accordance with 604.04 d. Ring Insert Requirements. The use of composite risers shall be in accordance with 604.04 e. Composite Riser Requirements.

Add the following sections to 604.04:

d. Ring Insert Requirements Ring inserts to adjust manhole top frame slope and grade will be allowed in accordance with the following requirements:

1) Materials

- i. All ring inserts must be made of iron. *Multiple ring inserts will not be allowed.* The single ring insert may be any height up to a maximum of 2 inches tall.
- ii. Ring inserts shall not be welded to the manhole frame to prevent brittle failure of the cast iron frame.
- iii. Ring inserts shall be fastened to the manhole frame using liquid steel-filled epoxy such as Loctite Fixmaster Steel Liquid or equivalent. The epoxy shall be installed in accordance with the manufacturer's recommendations.

2) Where Ring Inserts May/May Not Be Used

- i. MaineDOT will allow the use of a single manhole ring insert to raise manholes on state and state-aid highways.
- ii. *Manhole ring inserts may not be used along state and state-aid highway sections where the speed limit is 40 miles per hour or more.* The standard brick and mortar or flat composite risers beneath the manhole frame must be used at these locations.

3) Construction Requirements For The Use of Iron Manhole Ring Inserts

- i. Wherever iron ring inserts are used to raise manhole top elevations, the rings shall be fastened to the existing manhole frame using liquid steel-filled epoxy. The liquid steel-filled epoxy shall be placed evenly around the entire manhole frame before placing the ring insert. *Unbonded ring inserts will not be allowed.* If the manufacturer's recommended construction practices result in loose or unacceptable manhole cover restraint, standard brick and mortar or flat composite risers beneath the manhole frame must be used at these locations.

e. Composite Riser Requirements Flat or beveled, doughnut-shaped, composite risers placed beneath the manhole frame to adjust slope and grade are allowed. The composite riser shall be fastened to both the top of the concrete cone and bottom of the manhole frame with the manufacturer's recommended epoxy. Composite risers may be used at all locations on state and state-aid highways under any legal speed limit without restriction.

SECTION 606 **GUARDRAIL**

606.09 Basis of Payment Amend the first sentence of the eighth paragraph of this subsection by removing the word "meter" and replace it with "linear foot".

SECTION 608 **SIDEWALKS**

608.021 Sidewalk Materials Revise this section by removing the second paragraph which begins with "Portland cement concrete shall..." in its entirety and replace with "**Portland cement concrete shall be Class A and meet the requirements of Section 502, Structural Concrete.**"

SECTION 609 **CURB**

609.03 Vertical Stone Curb, Terminal Section and Transition Sections and Portland Cement Concrete Curb, Terminal Sections and Transition Sections

Amend this section by adding the following paragraph to the end of it:

"The Contractor may elect to substitute concrete to backfill Stone Curbing or Stone Edging at their option. If the concrete backfill option is elected, the following is added to Standard Specification 609 – Curb"

609.02 Materials Amend this section by adding the following to it:

Portland cement and Portland Pozzolan Cement	701.01
Water	701.02
Fine Aggregate for Concrete	703.01
Coarse Aggregate for Concrete	703.02

The Contractor shall submit a concrete mix design for the Portland Cement Concrete to the Resident, with a minimum designed compressive strength of 4000 psi Class A concrete.

609.10 Basis of Payment Revise by changing the fifth paragraph which begins with “There will be no separate payment...” this section by removing the word “cement” and replacing it with “**concrete fill, mortar**”.

SECTION 619 **MULCH**

619.07 Basis of Payment Amend this section by adding the words “; **Bark Mulch and Erosion Control Mix will be paid for by the Cubic Yard;**” into the first sentence so that it reads:

“The accepted areas mulched will be paid for at the contract price per unit; **Bark Mulch and Erosion Control Mix will be paid for by the Cubic Yard;** which shall be full compensation for furnishing and spreading the hay or straw and mulch binder, cellulose fiber mulch, bark mulch or erosion control mix.

Revise the second sentence by removing “ **for pay item 619.1201**” So that it reads:

“When Mulch is measured in Bales, each bale will be paid for at 60% of the contract price per Unit”.

Revise this section by removing all pay items and replace them with the following:

619.12 Mulch	Unit
619.13 Bark Mulch	Cubic Yard
619.14 Erosion Control Mix	Cubic Yard

SECTION 621 **LANDSCAPING**

621.0002 Materials - General

In the list of items change “Organic Humus” to “**Humus**”.

621.0019 Plant Pits and Beds

c Class A Planting

In the third paragraph beginning with “ The plant pit...” change “½ inch” to “**1 inch**”

SECTION 626
**FOUNDATIONS, CONDUIT AND JUNCTION BOXES FOR HIGHWAY
SIGNING, LIGHTING AND SIGNALS**

626.02 General Amend the Material list by adding the following to the list:

Gravel Borrow	703.20
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Revise the Material List by removing:

Prewired Conduit	715.04
Metallic Junction and Fuse Box	715.05

626.021 Miscellaneous Material Amend this section by adding the following to the end of it:

“All concrete for concrete encasement of conduit shall be Fill Class concrete in accordance with the applicable requirements of Section 502 – Structural Concrete.”

Amend the third paragraph that begins with “If grouting is necessary...” by adding “**included on the Qualified Product List and**” after the word “material”.

626.03 General Amend this section by adding the following section to the end of it

“626.0301 Electrical Supply Lines and Service Connections The following requirements shall apply to Electric Supply Lines and Service Connections feeding traffic signalization equipment control boxes and lighting breaker boxes.

Whenever possible, the meter and breaker panel feeding traffic signal control boxes or lighting control boxes shall be constructed within 30 feet of the service drop pole.

All underground service connections that are constructed in trenches and carrying Secondary Utility Power to a MaineDOT meter and breaker panel, or, directly to MaineDOT traffic signalization control cabinets or lighting breaker boxes shall be in Rigid Metal Conduit or concrete encased PVC conduit.

Where trenchless technologies are employed to install the service connection conduit, Schedule 120 PVC conduit shall be used for the trenchless bore section of conduit. In addition, concrete encasement shall be used for any PVC conduit placed in trench sections and carrying Secondary Utility Power more than 10 feet before or after the limits of the trenchless bore conduit.

The construction practices described above shall be used for service connections up to a maximum of 600 feet. There may be rare exceptional cases where the service connection must exceed 600 feet. In these cases, the power companies may require primary power be run over 600 feet for the purpose of power consumption and dependable service. These cases will be evaluated on a case-by-case basis for alternate power feed methods and/or the need for steel or concrete encased conduit.”

626.031 Conduit Revise this section by removing the second paragraph which begins with “Trenches for conduits...” and replace it with the following:

“Trenches for conduits shall be excavated to a width that will permit proper installation of the conduit and to a minimum depth of 3 feet below finish grade as measured from the top of the conduit. If deeper depths are required, the conduit shall be installed at the depth shown on the plans or as directed. Conduit shall not interfere with poles, guardrail posts, sign foundations or other objects.”

Amend the third paragraph which begins with “All junction or pull boxes...” by adding “**concrete, in accordance with the applicable requirements of Section 502 – Structural Concrete,**” after Class LP.

Revise the fifth paragraph which begins with “After the trench has been...” by adding the following to the end of it:

“Where concrete encasement is required around the conduit, backfilling with approved material may begin adjacent to and above the encased conduit no sooner than 24 hours after concrete placement.”

Remove the following:

“All underground conduit shall be placed to at least the depth shown on the plans and shall not interfere with poles, guardrail posts, sign foundations or other objects.”

Revise the paragraph beginning with “All conduit ends shall...” by removing “Prewired Conduit shall be sealed during construction to prevent entry of moisture, dirt, or rocks.”

626.033 Polyvinylchloride Conduit Installation Amend the first paragraph of this section which begins with “Polyvinylchloride conduit and High Density...” by adding the following to the end of it:

“In addition, PVC conduit used for Electrical Supply Lines and Services constructed as underground service connections in trenches and carrying Secondary Utility Power to a MaineDOT meter and breaker panel, or, directly to MaineDOT traffic signalization control cabinets or lighting breaker boxes shall be concrete encased. When trenchless technologies are used to install PVC conduit, concrete encasement shall not be required.

Concrete encasement shall consist of a minimum of 4 inches of concrete above, below and on both sides of the conduit that shall have a minimum compressive strength of 3000 psi and a maximum aggregate size of 1-inch (Fill Class concrete). The concrete encasement may be backfilled no sooner than 24 hours after placement. “

“NON-METALLIC UNDER PAVEMENT CONDUIT INSTALLATION

Where noted on the drawings, non-metallic under pavement conduit of schedule 80 or greater rating shall be provided to facilitate conduit crossing of the existing highway and ramps without disruption to the existing highway and ramp pavement surface. The non-metallic under pavement conduit shall be hydraulically jacked or directional bored below the highway and ramp at a depth of not less than (36 inches). Under pavement conduit shall extend for a distance of (10 feet) beyond the highway or ramp edge at each side.”

Amend the sixth paragraph which begins with “Where PVC conduit runs are...” by changing “3 inch minimum bedding” to “**6 inch minimum bedding**”.

626.034 Concrete Foundations

Revise this section by removing the third paragraph which begins with “In the absence of Design Requirements...” in its entirety and replace with the following:

“In the absence of design requirements being provided on the plans, the Contractor shall prepare and submit the foundation design(s) to the Department for review. The Contractor may propose an alternate shallow spread footing or drilled shaft configuration/design than that set forth on the drawings. Design shall be in accordance with AASHTO LRFD Specifications for Structural Supports for Highway Sign, Luminaires and Traffic Signals, current edition; AASHTO LRFD Bridge Design Specifications, current edition; and FHWA-NHI-10-016 Drilled Shafts, Construction Procedures and Design Methods, current edition. Where conflicting requirements occur, the more stringent requirements shall govern. In addition to other design requirements, foundation design shall account for Torsion for which a minimum Factor of Safety equal to 1.2 shall be achieved. In evaluating axial capacity and torsional resistance in cohesionless soils, load transfer coefficient or side resistance coefficient (beta, β) will be used in accordance with Subsection 13.3.5.1 of FHWA-NHI-10-016, with beta determined in accordance with Equations 13-13 and 13-11 for silty sands to sandy silts (with varying amounts of gravel). The design criteria for the resistance of drilled shaft and spread footing foundations against overturning, sliding and bearing capacity failure shall meet the requirements of Section 4 of AASHTO LRFD Bridge Design Specifications, current edition. The structural design of foundations shall meet the requirements of AASHTO LRFD Bridge Design Specifications, current edition. The Contractor shall submit to the Department for review, three (3) copies of detailed plans and calculations of the proposed design. Design shall be prepared and sealed by a Professional Engineer licensed in the State of Maine. Construction of foundation(s) shall not commence until the Department has reviewed the foundation design.”

On Page 6-85, add the following paragraph before the paragraph beginning with “Drilled shafts shall not be...”.

“ No foundation design will be required for 18- and 24-inch diameter foundations for structures less than 30-feet tall and with no projecting arms. A foundation design prepared by a Professional Engineer licensed in accordance with the laws of the State of Maine will be required for all other foundations Precast foundations will be permitted for 18 and 24-inch diameter foundations for structures less than 30-feet tall and with no projecting arms. Where precast foundations are permitted flowable concrete fill shall be used as backfill in the annular space, and placed from the bottom up. Construction of precast foundations shall conform to the Standard Details and all requirements of Section 712.061 except that the concrete shall have a minimum permeability of 17 kOhm-cm and the use of calcium nitrite will not be required. “

On Page 6-86, Revise the paragraph beginning with “Concrete for drilled shafts...” so that a portion of it reads as follows:

“....The Contractor shall provide temporary dewatering of excavations for foundations such that concrete is placed in the dry. Concrete for drilled shafts shall be placed in accordance with Section 502.10 as temporary casing is withdrawn to prevent debris from contaminating the foundation and to ensure concrete is cast against the surrounding soil. Concrete for drilled shafts and spread footings shall be Class LP in accordance with Section 502 - Structural Concrete. Precast foundations will not be permitted except as specified above in this Section. Backfill for spread footing foundations shall be Gravel Borrow meeting the requirements of Section 703.20 - Gravel Borrow.....”

626.05 Basis of Payment Amend this section by removing the following paragraphs:

The one which starts with “Payment will be made for the total number of linear feet of prewired conduit...”

The one which starts with “Prewired conduit within the foundations...”

Amend this subsection by adding the following paragraph and Pay Items:

“Payment will be made for the total number of linear feet of under pavement conduit actually furnished, installed and accepted at the contract price per linear foot. This price shall include the cost of: furnishing and installing the conduit; excavating; furnishing special backfilling materials, pull wire, fittings, grounding and bonding; test cleaning interiors of conduits and all materials, labor, equipment and incidentals necessary to complete the work.”

Pay Item	PayUnit
626.221 Non-metallic Conduit, Concrete Encased	Linear Foot
626.251 Non-Metallic Under pavement Conduit (Schedule 80 or greater rating)	Linear Foot

Remove the following Pay Items:

626.23	Prewired Conduit Secondary Wiring	Linear Foot
626.24	Prewired Conduit Primary Wiring	Linear Foot

SECTION 627

PAVEMENT MARKINGS

Revise this section by removing it in its entirety and replacing with the following:

627.01 Description This work shall consist of furnishing and placing reflectorized pavement lines and markings, removing pavement lines and markings, and furnishing and applying reflectorized paint to curbing in reasonably close conformity with the plans and as designated.

627.02 Materials Materials shall conform to the requirements specified in the following Sections of Division 700 - Materials.

Pavement Marking Paint	708.03
Reflectorized Plastic Pavement Marking	712.05

Temporary Bi-directional Yellow Delineators shall be Temporary Object Markers (T.O.M.) as manufactured by the Davidson Plastic Company, 18726 East Valley Highway, Kent, WA 98031 or an approved equal.

627.04 General All pavement lines and markings shall be applied in accordance with the latest edition of Manual on Uniform Traffic Control Devices.

Longitudinal lines placed on tangent roadway segments shall be straight and true. Longitudinal lines placed on curves shall be continuous smoothly curved lines consistent with the roadway alignment. All pavement markings placed shall meet the tolerance limits shown on the plans.

Unless otherwise shown on the plans, non-interstate lines shall be 4 inches wide and broken lines shall consist of alternate 10 foot painted line segments and 30 foot gaps. On controlled access divided highways and on the interstate system lines shall be 6 inches wide and broken lines shall consist of alternate 15 foot painted line segments and 25 foot gaps. Width tolerance shall be +/- 1/4 inch.

Temporary pavement marking lines, defined in Special Provision Section 652, Maintenance of Traffic, Temporary Centerline, will be applied as many times as necessary to properly delineate traffic lanes for the safe passage of traffic. Bi-directional delineators may be used in place of temporary lines, except where specified otherwise in Special Provision 652 Maintenance of Traffic, Temporary Centerline. Delineators will be applied at 40 foot intervals.

In overnight lane closure areas that are not to be overlaid, temporary plastic lines or raised pavement markers shall be used through the length of the taper.

Newly painted lines, markings and curb shall be protected from traffic by the use of cones, stationary vehicles or other approved methods until the paint is dry.

627.05 Preparation of Surface Immediately before applying the pavement marking paint to the pavement or curb, the surface shall be dry and entirely free from dirt, grease, oil, or other foreign matter.

Surface preparation for application of plastic markings shall conform to the manufacturer's recommendations.

627.06 Application Prior to applying paint for final pavement lines, the Contractor shall perform a test for paint thickness by furnishing and placing a piece of smooth, clean metal with an area of at least 144 in² in the path of the striping truck. The striping truck shall be passed over the piece of metal, painting the surface as it passes, without applying beads. The result of this test will be used to determine the pressure setting and speed of the truck when applying paint to obtain the specified thickness. Additional paint thickness testing may be required on the final paint markings. The wet thickness of paint without beads on final pavement lines shall be a minimum of 16 mils.

On other final pavement markings and on curb, where the paint is applied by hand painting or spraying, application shall be in two uniform covering coats, each at least 10 mils thick. Before the second coat of paint has dried, the glass beads shall be applied by a pressure system that will force the glass beads onto the undried paint as uniformly as possible.

Glass beads shall be applied to the final and temporary pavement lines, marking and curb at a sufficient rate and in sufficient quantity to assure complete and uniform coverage of hand painted surfaces and achieve proper reflectivity.

Permanent and temporary white lines and markings shall have a minimum final reflectivity value of 250 millicandelas per square meter per lux (mcd/m²/lux) and permanent and temporary yellow lines and markings shall have a minimum final reflectivity value of 150 millicandelas per square meter per lux (mcd/m²/lux), as measured by the Department. Measurements taken to determine reflectivity shall be done within 4 weeks after final placement.

If the final reflectivity values are less than the described minimums, the Contractor shall repaint those areas not meeting required reflectivity at no cost to the Department. If the final reflectivity values are less than the described minimums after the second attempt, the Contractor will submit in writing a plan of action to meet the reflectivity minimums prior to continuing any work. Once the plan has been reviewed and approved by the Department, the Contractor shall re apply at no cost to the Department.

Temporary painted lines and markings shall be applied as specified for permanent painted lines, except that the thickness shall be a minimum of 16 mils.

Temporary pliant polymer marking material shall be used for temporary markings on the final pavement and on pavements not to be resurfaced when such pavement markings do not conform to the final pavement markings pattern.

The plastic final pavement lines and markings shall be applied in accordance with the manufacturer's recommendations by the inlay method of application.

627.07 Establishment Period Inlaid plastic pavement lines and marking material furnished and installed under this contract for final pavement markings shall still be subject to a six-month period of establishment.

The period of establishment shall commence as soon as the plastic pavement lines and markings are complete and in place and shall continue for six months. At the end of the establishment period, a minimum of 95% of the plastic pavement lines and markings shall still be in place to be acceptable.

If less than 95% of the plastic pavement lines and markings are in place after six months, the Contractor shall replace all unsatisfactory plastic pavement lines and markings on the project without additional payment. Plastic pavement lines and markings designated for replacement shall be installed according to these specifications, unless otherwise directed. Plastic pavement lines and markings replaced at the end of the six month establishment period will not be subject to a further establishment period.

627.08 Removing Lines and Markings When it is necessary to remove pavement lines and markings, it shall be done by high pressure water, grinding or other approved acceptable means. The method chosen must be capable of completely eradicating the existing line or marking without excessive damage to the pavement. Burning and the use of solvents to remove temporary markings from final pavement or from existing pavement not to be resurfaced will not be permitted.

627.09 Method of Measurement The quantity of pavement marking lines identified in the contract as a plan quantity pay item, the measurement of payment will be the number of feet shown in the Schedule of Items. This quantity will be considered final and no adjustments will be made except when changes resulting in increases or decreases are made by the Resident.

The accepted quantity of temporary or permanent pavement marking lines when identified in the contract as a linear foot item shall be measured and paid for at the contract unit price per linear foot for the total amount applied and accepted.

Double yellow centerline, broken or solid, will be considered one line for measurement purposes. The measurement of broken lines will include the gaps when painted and will not include the gaps when plastic. Double Yellow Centerline, broken or solid shall not be paid through intersections or side roads and will be paid for the actual length of painted line.

Broken white lines will include the gaps when painted and will not include the gaps when plastic inlaid pavement lines are applied. Yellow or white solid edge lines and will not be paid through intersections or side roads and will be measured by the actual length of painted line.

Temporary pavement marking lines shall not be paid through intersections or side roads and will be measured per linear foot of actual length of painted and accepted.

Reflectorized curb will be measured or computed by the square foot of curb surface actually painted and reflectorized.

The accepted quantity of removing existing pavement markings will be measured by the square foot.

Temporary Bi-directional Yellow Delineators will be measured by each unit, complete in place, maintained, and accepted.

627.10 Basis of Payment The accepted quantity of pavement marking lines identified in the contract as a plan quantity pay item will be paid for at the contract unit price for plan quantity. No adjustment will be made to the quantity for payment, except as described 627.09 Method of Measurement

The quantity of permanent or temporary pavement marking lines identified in the contract paid by the linear foot will be measured for payment as described under section 627.09 Method of Measurement.

All other permanent pavement markings will be paid for at the contract unit price per square foot in accordance with 627.09 Method of Measurement.

If allowed by Special Provision, the Contractor may utilize Temporary Bi-Directional Yellow and White (as required) Delineators. When utilized, payment will be made as temporary pavement marking lines, measured and paid at the contract unit price per linear foot. Such payment will include as many applications as required and removal.

Payment for final plastic pavement lines and markings will be made in two parts. The first payment of 75% will be made when plastic pavement lines and markings are placed. The payment of the remaining 25% will be made at the end of the establishment period for all plastic line and pavement markings accepted.

The accepted quantity of any pavement marking lines will be paid for at the contract unit price and will include as many applications as required and removal when required.

The accepted quantity of Temporary Bi-directional Yellow Delineators will be paid for at the contract unit price.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
627.18 12 inch Solid White Pavement Marking Line	Linear Foot
627.711 White or Yellow Pavement Marking Line - Plan Quantity	Linear Foot
627.733 4" White or Yellow Painted Pavement Marking Line	Linear Foot
627.744 6" White or Yellow Painted Pavement Marking Line	Linear Foot
627.75 White or Yellow Pavement & Curb Marking	Square Foot
627.77 Removing Existing Pavement Marking	Square Foot
627.78 Temporary 4" Painted Pavement Marking Line, White or Yellow	Linear Foot
627.781 Temporary 6" Painted Pavement Marking Line, White or Yellow	Linear Foot
627.407 Reflectorized Plastic, White or Yellow Pavement Marking	Square Foot
627.4071 Reflectorized Plastic, White or Yellow Pavement Marking Line - Plan Quantity	Linear Foot
627.811 Temporary Bi-directional Yellow Delineators	Each

SECTION 639

ENGINEERING FACILITIES

Revise this section by removing this section in its entirety and replace with the following:

639.01 Description This work shall consist of providing, erecting, lighting, equipping and maintaining buildings to be solely used by the Resident and other assigned Department representatives as a field office. Upon completion of the work, the buildings and equipment shall remain the property of the Contractor.

639.02 Materials Materials for buildings shall be of good quality customarily used in standard frame house or office trailer construction.

639.03 General The building of the type called for shall be provided before the start of work, and shall remain until work is completed and accepted, unless earlier removal is authorized. The location shall be approved by the Resident and should be adjacent or virtually adjacent to the Project.

A fire extinguisher shall be provided in each building or office trailer for electrical and chemical fires and effective on all solvents used in the building.

Walls, roof, floor, windows, and doors shall be tightly constructed to the required area.

Furnishings shall be supplied as called for. Doors shall be equipped with locks and all keys shall be in the possession of the Resident. Windows shall be equipped with latches so they may be locked on the inside. Window screens and screen doors shall be supplied when necessary. Adequate desk and desk space shall be provided. If a portable table is supplied, it should be adjustable to accommodate the various heights of employees. A 5-way adjustable office chair shall be provided in the quantities listed.

639.04 Field Offices Field Offices are designated Type A, Type B, or Type C. Buildings, including trailers, may be provided if they substantially equal or exceed the following requirements. Air conditioning, appropriate to the building size, shall be provided in all field offices.

The walls, roof, and floor of the building shall be completely insulated with a minimum insulation value of R-15. Office trailers shall be either new or in very good used condition. The interior walls shall be covered with suitable wall paneling. The entire office trailer shall be for the exclusive use of the Resident. The office trailer shall be winterized and completely enclosed at the bottom, if the trailer will be used in cold weather.

Other types of buildings and facilities may be furnished of equal or better quality.

A public work area will be provided in the field office that shall be designed and constructed so that individuals with disabilities can approach, enter, and exit this area.

At least one accessible route to the field office shall be provided from accessible parking. The accessible route shall comply with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) and this specification.

The minimum clear width of an accessible route shall be 36 inches except at doors. The least possible slope shall be used for an accessible route. An accessible route with a running slope greater than 1:20 shall be considered a ramp. Maximum ramp slope is 1:12. The maximum rise for any run of a ramp shall be 30 inches and the minimum clear width shall be 36 inches. Nowhere shall the cross slope of an accessible route exceed 1:50. Changes in level up to ¼ inch may be vertical and without edge treatment. Changes in level between ¼ inch and ½ inch shall be beveled with a slope no greater than 1:2. Ramp floor surfaces shall be stable, firm, and slip-resistant.

Ground floor surfaces along accessible routes and in accessible rooms and spaces including floors, walks, ramps, stairs, and curb ramps, shall be stable, firm, and slip-resistant.

The main door to the public work area shall have a minimum clear opening of 32 inches with the door opened 90 degrees, measured between the face of door and the opposite stop. Minimum maneuvering clearances at doors shall be provided. The floor or ground area within the required clearances shall be level and clear.

The handle and other operating devices on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping. Lever-operated mechanisms push type mechanisms, and U-shaped handles are acceptable designs. Hardware required for accessible door passage shall be mounted no higher than 48 inches above finished floor.

A minimum of 3 parking spaces will be supplied for Class B & C Field Offices and 6 for Class A. One wheelchair accessible parking space shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance.

Level landings shall be provided at bottom and top of each run. The landing shall be at least as wide as the ramp run leading to it with a minimum length of 60 inches.

If a ramp run has a rise greater than 6 inches or a horizontal projection greater than 72 inches, then it shall have handrails on both sides. Handrails shall have the following features:

- 1) Handrails shall be provided along both sides of ramp segments. The inside handrail on switchback ramps shall always be continuous.
- 2) If handrails are not continuous, they shall extend at least 12 inches beyond the top and bottom of the ramp segment and shall be parallel with the floor or ground surface.
- 3) The clear space between the handrail and the wall shall be 1½ inch.
- 4) Gripping surfaces shall be continuous.
- 5) Top of handrail gripping surfaces shall be mounted between 34 and 38 inches above ramp surfaces.

- 6) Ends of handrails shall be either rounded or returned smoothly to floor, wall, or post.
- 7) Handrails shall not rotate within their fittings.
- 8) The diameter or width of the gripping surfaces of a handrail shall be 1¼ to 1½ inch, or the shape shall provide an equivalent gripping surface.

Firm and sturdy steps shall also be provided with 7 inch maximum riser and 11 inch minimum depth, and at least one handrail extending from the top of the steps to a minimum 12 inches beyond the bottom of the steps.

The Contractor will make reasonable effort(s) to provide wheelchair accessible toilet facilities when "portable" facilities are provided.

The Contractor shall provide wheelchair accessible toilet facilities when flush type facilities, that is, those with running water, are provided; and the Contractor shall provide wheelchair accessible portable facilities, if used, when the contract duration exceeds two continuous construction seasons.

In addition to the facilities previously specified in this subsection, each field office shall meet the following minimum requirements:

<u>Description</u>	<u>Quantity</u>		
	<u>Type A</u>	<u>Type B</u>	<u>Type C</u>
Floor Area (Outside Dimension) - ft ²	312	220	125
Inside Wall Height – feet	7	7	7
Window Area - ft ²	55	35	35
Drafting Table Surface Area - ft ²	15	15	15
Drafting Stools - each	2	1	1
Office Desks - each	2	1	1
Ergonomic Swivel Chairs -ea (5-way adjustable)	3	2	2
Folding Chairs - each	3	2	2
Lighting Units - each	4	2	2
Electric Wall Outlets - each	6	4	3
Power Strip Surge Protectors - each	3	2	1
Wall Closets - each	1	1	1
Plan Rack for minimum of 6 sets of plans	1	1	0
Toilet Facility	1	1	1
Wastebaskets - each	2	2	1

All windows shall be provided with shades or blinds.

The toilet facility shall be for the exclusive use of State personnel. If requested, the Contractor will supply a lock to ensure exclusive use.

The Resident will have the option to reject any furniture or supplies provided to the field office based on general condition.

One hundred ten volt, 60 cycle, continuous electric service shall be supplied for lighting and 15 amp duplex wall outlets. Lighting shall consist of florescent light units with rapid start bulbs or LED shop style lights located over the work areas for a minimum of 50 foot candles overall. At least one external light source will be provided.

Drafting surfaces shall be 40 inches above the floor and have shelves beneath. Shelves for plans and rolls shall also be furnished overhead. Drafting stools shall be approximately 28 inches high.

Desks shall be single or double pedestal standard office type, and shall be in addition to “built-in” type desks in the office trailer.

Field offices shall be furnished with one four-drawer letter size metal filing cabinet.

Wall closets shall be 21 inches wide, 15 inches deep, and at least 4 feet high.

Each office shall be furnished with a broom, dustpan, sweeping compound, trash bags, and with cleaning material for cleaning glass. If the field office is carpeted, then a vacuum cleaner will be provided. The contractor will be responsible for disposing of trash from the field office.

The Contractor shall provide a fully functional wireless desktop copier/scanner/printer, capable of copying field books, for the Resident’s use during the project. All maintenance and supplies, except paper, shall be the responsibility of the Contractor.

The Contractor shall provide bottled water and a microwave for the duration of the project. All maintenance and supplies shall be the responsibility of the Contractor. Alternate source of water, such as a water cooler, may be provided as approved by resident.

The Contractor shall provide a 4 cubic-foot refrigerator in the field office for the duration of the project.

Each office shall be furnished with a 10-person general-purpose first aid kit. The first aid kit shall be periodically inspected and refilled as necessary.

639.08 Heat Heat appropriate to the building size shall be supplied by the Contractor to maintain an acceptable room temperature during occupancy.

639.091 Broadband Connection The contractor will supply one computer broadband connection, modem lease and router. The router shall have wireless access and be 802.11n or newer capable. The type of connection supplied will be contingent upon the availability of services (i.e. DSL or Cable Broadband). It shall be the contractor's option to provide dynamic or static IP addresses through the service. The selected service will have a minimum download connection of 5.0 Mbps and 1.0 Mbps upload. The contractor shall be responsible for the installation charges and all reinstallation charges following suspended periods. Monthly service and maintenance charges shall be billed by the Internet Service Provider (ISP) directly to the contractor.

639.10 Method of Measurement Field office will be measured by the unit or lump sum for each building provided, equipped and maintained satisfactorily.

639.11 Basis of Payment The accepted quantity of field office will be paid for at the contract unit price each or lump sum which payment shall be full compensation for furnishing until contract completion, erecting, equipping, maintaining, furnishing electricity, heating, installing and maintaining toilet facilities and if necessary removing the buildings or office trailers.

Payment for these items will be made in 3 parts; the first payment of ½ to be made after the Contractor has supplied the building or office trailer and it has been approved. The remaining payments shall be made at intervals as follows:

A second payment of ¼ shall be made when one-half of the anticipated work has been completed.

The final payment of the remaining ¼ shall be made upon completion of the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
639.18 Field Office, Type A	Each
639.19 Field Office, Type B	Each
639.20 Field Office, Type C	Each

SECTION 652

MAINTENANCE OF TRAFFIC

652.2.4 Other Devices Revise this Section by removing the following paragraph:

“ STOP/SLOW paddles shall be the primary and preferred hand held signaling device. Flags shall be limited to Emergencies. The paddle shall have an octagonal shape and be at least 18 inches wide with letters at least 6 inches high and should be fabricated from semi-rigid material”

And replace with these two paragraphs

“Flaggers shall use a STOP / SLOW hand held paddle as the primary and preferred hand signaling device. Use of flags shall be limited to emergency situations.

STOP / SLOW paddles shall have high intensity prismatic retro reflective sheeting Type XI, have an octagonal shape on a rigid handle and shall be at least 18 inches wide with letters at least 6 inches high and shall be constructed from light semi-rigid material. The STOP (R1-1) face shall have white letters and a white border on a red background. The SLOW (W20-8) face shall have black letters and a black border on an orange background. Paddles in existing stock meeting the current specification (Type VII, Type VIII, or Type IX) may be utilized until the end of the service life or until 12/31/18. All new paddles must meet the Type XI requirements.”

652.3.3 Submittal of Traffic Control Plan On page 6-148, note f, in the last sentence revise the “105.2.2” to “105.2.3” so that the last sentence reads, **“For a related provision, see Section 105.2.3 – Project Specific Emergency Planning.”**

652.3.4 General Revise the eighth paragraph by removing “Earth Berm” and replace it with **“Concrete Barrier”**.

Amend this section by adding the following paragraph before the paragraph beginning with “Special Detours and temporary structures...”:

“A temporary ramp shall be constructed with HMA at the ends of the roadway section paved or milled each day. The use of millings or RAP will not be allowed, but cold patch may be temporarily utilized until HMA plants are open for the season. The maximum ramp change in elevation shall not exceed 4” vertical. For Interstate Highways or roadways with speed limits equaling or exceeding 50 mph; temporary ramps shall be constructed at a length of eight feet per inch of transition depth. For roadways with speed limits less than 50 mph and greater than 25 mph, temporary ramps shall be constructed at a length of four feet per inch of transition depth. For roadways with speed limits 25 mph or less, temporary ramps shall be constructed at a length of two feet per inch of transition depth. Materials, placement, maintenance, and removal shall be incidental to contract items.”

652.4 Flaggers Revise this section by removing the first paragraph, and replace it with the following”

“The Contractor shall furnish flaggers as required by the TCP or as otherwise specified by the Resident. All flaggers must have successfully completed a flagger test approved by the Department and administered by a Department-approved Flagger-Certifier. All flaggers must carry an official certification card with them at all times while flagging.

For daytime conditions, flaggers shall wear a top (vest, shirt or jacket) that is orange, yellow, yellow-green, or fluorescent versions of these colors meeting ANSI 107-2004, Class 2 or Class 3, along with a hardhat with 360 ° retro-reflectivity.

For nighttime conditions, flaggers shall wear all Class 3 apparel, meeting ANSI 107-2004, including a Class 3 top (vest, shirt or jacket) and a Class E bottom (pants or coveralls), shall be worn along with a hardhat with 360 ° retro-reflectivity and shall be visible at a minimum distance of 1000 ft. Flagger stations must be illuminated in nighttime conditions to assure visibility and will be specifically addressed in detail in the Contractor's TCP".

652.41 TRAFFIC OFFICERS

Revise this subsection so that the subsection number and title is

"652.4.1 TRAFFIC OFFICERS "

SECTION 656

TEMPORARY SOIL EROSION AND WATER POLLUTION CONTROL

656.5.2 If No Pay Item Add the following to the end of the first paragraph:

"Failure by the Contractor to follow Standard Specification or Special Provision - Section 656 will result in a violation letter and a reduction in payment as shown in the schedule list in 656.5.1. The Department's Resident or any other representative of The Department reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Department shall not be held responsible for any delay in the work due to any suspension under this item."

SECTION 660

ON-THE-JOB TRAINING

660.06 Method of Measurement

Remove the first sentence in its entirety and replace with **" The OJT item will be measured by the number of OJT hours by a trainee who has successfully completed an approved training program."**

660.07 Basis of payment to the Contractor

Remove the last word in the first sentence so that the first sentence reads " The OJT shall be paid for once successfully completed at the contract unit price per **hour**."

Payment will be made under

Change the Pay Item from "660.22" to **"660.21"** and change the Pay Unit from "Each" to **"Hour"**.

SECTION 672

PRECAST CONCRETE BLOCK GRAVITY WALL

672.035 Backfill Material– Revise this section by adding the following after the second paragraph:
Backfill materials shall meet the criteria in the following table.

<u>Base Polymer</u>	<u>Property</u>	<u>Criteria</u>	<u>Test Method</u>
Polyester (PET)	pH	$3 < \text{pH} < 9$	AASHTO T-289
Polyolefin (PP & HDPE)	pH	$\text{pH} > 3$	AASHTO T-289

672.04 Design Requirements – Revise this section by replacing items 2 and 3 in the second paragraph with the following:

2. FHWA-NHI-10-024 and FHWA-NHI-10-025, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volumes I and II, current edition.
3. FHWA-NHI-09-087 Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, current edition.

SECTION 673 **WETCAST SMALL LANDSCAPE BLOCK WALL**

673.035 Backfill Material – Revise this section by adding the following after the second paragraph:

Backfill materials shall meet the criteria in the following table.

<u>Base Polymer</u>	<u>Property</u>	<u>Criteria</u>	<u>Test Method</u>
Polyester (PET)	pH	$3 < \text{pH} < 9$	AASHTO T-289
Polyolefin (PP & HDPE)	pH	$\text{pH} > 3$	AASHTO T-289

673.04 Design Requirements – Revise this section by replacing items 2 and 3 in the second paragraph with the following:

2. FHWA-NHI-10-024 and FHWA-NHI-10-025, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volumes I and II, current edition.
3. FHWA-NHI-09-087 Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, current edition

SECTION 674

PREFABRICATED CONCRETE MODULAR GRAVITY WALL

674.02 Materials

Amend this section by adding the following after “Concrete Units:” and before the paragraph beginning with “Tolerances”.

Concrete shall be Class P. The concrete shall contain a minimum of 5.5 gallons per cubic yard of calcium nitrite solution.

The minimum permeability of the concrete as indicated by Surface Resistivity shall be 17 KOhm-cm.

Defects Defects which may cause rejection of precast units include, but are not limited to, the following:

Any discontinuity (crack, rock pocket, etc.) of the concrete which could allow moisture to reach the reinforcing steel.

Rock pockets or honeycomb over 6 square inches in area or over 1 inch deep.

Edge or corner breakage exceeding 12 inches in length or 1 inch in depth.

Any other defect that clearly and substantially impacts the quality, durability, or maintainability of the structure, as determined by the Fabrication Engineer.

Repair honeycombing, ragged or irregular edges and other non-structural or cosmetic defects using a patching material from the MaineDOT Qualified Products List (QPL). The repair, including preparation of the repair area, mixing and application and curing of the patching material, shall be in accordance with the manufacturer's product data sheet. Corners that are not exposed in the final product may be ground smooth with no further repair necessary if the depth of the defect does not exceed 1/2 inch. Remove form ties and other hardware to a depth of not less than 1 inch from the face of the concrete and patch the holes using a patching material from the MaineDOT QPL.

Repair structural defects only with the approval of the Fabrication Engineer. Submit a nonconformance report (NCR) to the Fabrication Engineer with a proposed repair procedure. Do not perform structural repairs without an NCR that has been reviewed by the Fabrication Engineer. Structural defects include, but are not be limited to, exposed reinforcing steel or strand, cracks in bearing areas, through cracks and cracks 0.013 inch in width that extend more than 12 inches in length in any direction. Give the QAI adequate notice prior to beginning any structural repairs.

SECTION 677

MECHANICALLY STABILIZED EARTH RETAINING WALL

677.03 Design Requirements – Revise this section by replacing items 6, 7 and 8 in the second paragraph with the following:

6. FHWA-NHI-10-024, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volumes I, current edition.
7. FHWA-NHI-10-025, Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, Volumes II, current edition.
8. FHWA-NHI-09-087 Corrosion/Degradation of Soil Reinforcements for Mechanically Stabilized Earth Walls and Reinforced Soil Slopes, current edition

On page 6 - 203 change “636.041” to “677.041”

Amend 677.042 Precast Panel Tolerances and Surface Finish by the addition of the following:

Defects Defects which may cause rejection of precast units include, but are not limited to, the following:

Any discontinuity (crack, rock pocket, etc.) of the concrete which could allow moisture to reach the reinforcing steel.

Rock pockets or honeycomb over 6 square inches in area or over 1 inch deep.

Edge or corner breakage exceeding 12 inches in length or 1 inch in depth.

Any other defect that clearly and substantially impacts the quality, durability, or maintainability of the structure, as determined by the Fabrication Engineer.

Repair honeycombing, ragged or irregular edges and other non-structural or cosmetic defects using a patching material from the MaineDOT Qualified Products List (QPL). The repair, including preparation of the repair area, mixing and application and curing of the patching material, shall be in accordance with the manufacturer's product data sheet. Corners that are not exposed in the final product may be ground smooth with no further repair necessary if the depth of the defect does not exceed 1/2 inch. Remove form ties and other hardware to a depth of not less than 1 inch from the face of the concrete and patch the holes using a patching material from the MaineDOT QPL.

Repair structural defects only with the approval of the Fabrication Engineer. Submit a nonconformance report (NCR) to the Fabrication Engineer with a proposed repair procedure. Do not perform structural repairs without an NCR that has been reviewed by the Fabrication Engineer. Structural defects include, but are not be limited to, exposed reinforcing steel or strand, cracks in bearing areas, through cracks and cracks 0.013 inch in width that extend more than 12 inches in length in any direction. Give the QAI adequate notice prior to beginning any structural repairs.

SECTION 702

BITUMINOUS MATERIAL

702.01 Asphalt Cement - Remove this section in its entirety and replace with the following:
Performance-Graded Asphalt Binder (PGAB) that has not been modified with polymer shall

conform to the requirements of AASHTO M 320. Polymer modified binder shall meet the requirements of AASHTO M 332 (including Appendix X1), except that the percent difference in nonrecoverable creep compliance, J_{nr} , shall not be enforced. Performance-Graded Asphalt Binder shall not contain re-refined engine oil bottoms (REOB).

The Contractor shall arrange for the Supplier to furnish the following items to the Department's Asphalt Pavement Engineer:

- a. A Quality Control Plan that conforms to the requirements of AASHTO R 26 "Certifying Suppliers of Performance-Graded Asphalt Binders" and
- b. A CERTIFICATE OF ANALYSIS for all asphalt materials furnished for use on the project. The Certificate shall include the actual test results of the material in storage from which the shipments are being made. Certificates shall be supplied for each lot, batch, or blend of each type and grade of material. A new certificate shall be issued at least every 30 days or upon receiving or manufacture of a new material. The original of each Certificate of Analysis shall be mailed to the Department's Asphalt Pavement Engineer.

The Contractor shall give the supplier sufficient notice of orders to permit testing and certification. Material not certified will not be accepted for use.

Deliveries of asphalt materials shall be accompanied by a Bill of Lading containing the information required under Section 108.1.3 f. The Bill of Lading shall include the applicable certificate number and shall include a printed or stamped statement such as the following: "THIS IS TO CERTIFY THAT THE ASPHALT MATERIAL REPRESENTED BY THIS LOADING INVOICE CONFORMS TO THE SPECIFICATIONS OF THE PURCHASER FOR THE MATERIAL TYPE AND GRADE STATED THEREON."

In the event an intermediate hauler of the asphalt material is involved, a copy of their own delivery slip shall be furnished, as well as a copy of the supplier's loading invoice. The hauler's delivery slip and the supplier's loading invoice shall be cross-referenced by use of their respective serial numbers.

All non-bituminous components added to the binder prior to the sampling point for binder certification shall be included on the asphalt binder Certificate of Analysis identifying their presence. All non-bituminous components added after the certification sampling point and prior to transport shall be included on the Bill of Lading. All non-bituminous components added to the binder at the HMA plant shall be identified on the mix plant documentation and accompanied by test results and certification showing the effect of the additives introduced, if any.

702.04 Emulsified Asphalt

Revise this Section by removing the first paragraph in its entirety and replace with the following:

Emulsified Asphalt shall conform to the requirements of AASHTO M 140. Cationic emulsified asphalt shall conform to the requirements of AASHTO M 208. Anionic emulsified asphalt Grade RS-1h shall conform to the requirements in the following table:

Type	Rapid-Setting	
Grade	RS-1h	
Tests on Emulsions	min	max
Viscosity, Saybolt Furol at 25°C SFS	20	100
Storage Stability test, 24-h, % ^A	-	1.0
Demulsibility, 35 ml, 0.02 N CaCl ₂ , %	60	-
Sieve Test, % ^A	-	0.10
Residue by distillation, %	55	-
Tests on Residue from Distillation Test	min	max
Penetration, 25°C 100g, 5 s	40	90
Ductility, 25°C 5 cm/min, cm	40	-
Solubility in trichloroethylene or n-propyl bromide, %	97.5	-

^A This requirement is waived if successful application of material has been achieved in the field.

SECTION 703 **AGGREGATES**

703.01 Fine Aggregate for Concrete Replace the second paragraph with the following:

“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 organic plate number 3, the fine aggregate shall be rejected.”

703.0201 Alkali Silica Reactive Aggregates. Remove this section in its entirety and replace with the following:

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 an accredited independent lab submitted to the Department. Aggregate submittals will be required on a 5-year cycle, unless the source or character of the aggregate in question has changed within 5 years from the last test date.

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 as tested under ASTM C 1567.

Acceptable pozzolans and chemical admixtures that may be used when an aggregate is classified as potentially reactive include, but are not limited to the following:

Class F Coal Fly Ash meeting the requirements of AASHTO M 295.

Ground Granulated Blast Furnace Slag (Grade 100 or 120) meeting the requirements of AASHTO M 302.

Densified Silica Fume meeting the requirements of AASHTO M 307.

Lithium based admixtures

Metakaolin

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.

703.06 Aggregate for Base and Subbase - Remove the first two paragraphs in their entirety and replace with these:

“The following shall apply to Sections (a.) and (c.) below. The material 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 Washington State Degradation DOT Test Method T113, Method of Test for Determination of Degradation Value (January 2009 version) shall be performed, except that the test shall be performed on the portion of the sample that passes the ½ 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 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. “

703.081 RAP for Asphalt Pavement

Remove this section in its entirety and replace with the following:

703.081 RAP for Asphalt Pavement Recycled Asphalt Pavement (RAP) may be introduced into hot-mix asphalt pavement at percentages approved by the Department according to the MaineDOT Policies and Procedures for HMA Sampling and Testing.

If approved by the Department, the Contractor shall provide documentation stating the source, test results for average residual asphalt content, and stockpile gradations showing RAP materials have been sized to meet the maximum aggregate size requirements of each mix designation. The Department will obtain samples for verification and approval prior to its use.

The maximum allowable percent of RAP shall be determined by the asphalt content, the percent passing the 0.075 mm sieve, the ratio between the percent passing the 0.075 mm sieve and the asphalt content, and Coarse Micro-Deval loss values as tested by the Department. The maximum percentage of RAP allowable shall be the lowest percentage as determined according to Table 4 below:

Table 4: Maximum Percent RAP According to Test Results

Classification	Maximum RAP Percentage Allowed	Asphalt content standard deviation	Percent passing 0.075 mm sieve standard deviation	Percent passing 0.075 mm sieve / asphalt content ratio	Residual aggregate M-D loss value
Class III	10%	≤ 1.0	N/A	≤ 4.0	≤ 18
Class II	20%	≤ 0.5	≤ 1.0	≤ 2.8	
Class I	30%	≤ 0.3	≤ 0.5	≤ 1.8	

The Department will monitor RAP asphalt content and gradation during production by testing samples from the stockpile at approximately 15,000 T intervals (in terms of mix production). The allowable variance limits (from the numerical average values used for mix designs) for this testing are determined based upon the maximum allowable RAP percentage, and are shown below in Table 5.

Table 5: RAP Verification Limits

Classification	Asphalt content (compared to aim)	Percent passing 0.075 mm sieve (compared to aim)
Class III	± 1.5	± 2.0
Class II	± 1.0	± 1.5
Class I	± 0.5	± 0.7

For specification purposes, RAP will be categorized as follows:

Class III – A maximum of 10.0 percent of Class III RAP may be used in any base, intermediate base, surface, or shim mixture. A maximum of 20.0 percent of Class III RAP may be used in hand-placed mixes for item 403.209.

Class II – A maximum of 20.0 percent Class II RAP in any base, binder, surface, or shim course.

Class I – A maximum of 20.0 percent Class I RAP may be used in any base, intermediate base, surface, or shim mixture without requiring a change to the specified asphalt binder. A maximum of 30.0 percent Class I RAP may be used in in any base or intermediate base mixture provided that a PG 58-28 asphalt binder is used. A maximum of 30.0 percent Class I RAP may be used in any surface or shim mixture provided that PG 58-34 or 52-34 asphalt binder is used. Mixtures exceeding 20.0 percent Class I RAP must be evaluated and approved by the Department.

The Contractor may use up to two different RAP sources in any one mix design. The total RAP percentage of the mix shall not exceed the maximum allowed for the highest classification RAP source used (i.e. if a Class I & Class III used, total RAP must not exceed 30.0%). The blended RAP material must meet all the requirements of the classification for which the RAP is entered (i.e. 10% Class III with 20% Class I, blend must meet Class I criteria). The Department may take belt cuts of the blended RAP to verify the material meets these requirements. If the Contractor elects to use more than one RAP source in a design, the Contractor shall provide an acceptable point of sampling blended RAP material from the feed belt.

In the event that RAP source or properties change, the Contractor shall notify the Department of the change and submit new documentation stating the new source or properties a minimum of 72 hours prior to the change to allow for obtaining new samples and approval.

703.19 Granular Borrow

Remove the gradation requirements table, and replace with the following:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Material for Underwater Backfill	Material for Embankment Construction
6 inch	100	
No. 40	0-70	0-70
No. 200	0-7.0	0-20.0

703.33 Stone Ballast - In the third paragraph, remove the words “less than” before 2.60 and add the words “or greater” after 2.60.

SECTION 708

PAINTS AND PRESERVATIVES

708.05 Timber Preservative Revise this section by removing it in its entirety and replacing with:
“Timber preservatives shall conform to the requirements of AASHTO M 133 and AWWA Standard U1. All preservatives shall meet the requirements of the US EPA regulations under the Federal Insecticide, Fungicide and Rodenticide Act.”

SECTION 709

REINFORCING STEEL AND WELDED STEEL WIRE FABRIC

709.01 Reinforcing Steel Revise this section by removing the sentence starting with “The chemical composition...” in the third paragraph and replace it with the following:
“The chemical composition shall conform to one of the types listed in Table 2 of ASTM A955 or UNS S32304 Duplex.”

SECTION 710

FENCE AND GUARDRAIL

710.07 Guardrail Posts Amend subsection ‘a’ by removing the words “white oak”, “cedar”, “tamarack”, “maple”, “beech”, “birch” and “red oak” from the first sentence. Also in the first sentence, place an “or” between “pine” and “eastern hemlock”. In the second sentence remove the words “well seasoned”. Remove the sentence beginning with “Wood posts and offset brackets...” and replace it with: **“Wood posts and offset brackets shall be preservative treated in accordance with the requirements of AASHTO M 133 and AWWA U1, UC4A Commodity Specification A: Sawn Products.”**

SECTION 712

MISCELLANEOUS HIGHWAY MATERIAL

712.061- Structural Precast Concrete Units

Under the heading, Quality Control and Quality Assurance, revise the fourth paragraph to read:

“Acceptance is the prerogative of the Department. The Department will conduct Quality Assurance (QA) in accordance with Standard Specification Subsection 106.5. Testing deemed necessary by the Department that is in addition to the minimum testing requirements will be scheduled to minimize interference with the production schedule. The QAI will perform acceptance sampling and testing and will witness or review documentation, workmanship and testing to assure the Work is being performed in accordance with the Contract Documents.”

Under the heading, Concrete Testing, revise the first paragraph to read as the following two paragraphs:

“Concrete Testing Acceptance of structural precast units, for each day’s production, will be determined by the Department, based on compliance with this specification and satisfactory concrete testing results.

At least once per week, the QAI will make 2 concrete cylinders (6 cylinders when the Contract includes permeability requirements) for use by the Department; cylinders shall be standard cured in accordance with AASHTO T23 (ASTM C31). The QAI will perform entrained air content and slump flow testing, determine water-cement ratio and determine temperature of the sampled concrete at the time of cylinder casting. All testing equipment required by the QAI to perform this testing shall be in accordance with Standard Specification Section 502.041, Testing Equipment. In addition, the Contractor shall provide a slump cone meeting the requirements of AASHTO T 119. Providing and maintaining testing and curing equipment shall be considered incidental to the work and no additional payment will be made.

Quality Control test cylinders shall be made and tested in accordance with the following standards:

AASHTO T 22 (ASTM C39) Test Method for Compressive Strength of Cylindrical Concrete Specimens

AASHTO T23 (ASTM C31) Practice for Making and Curing Concrete Test Specimens in Field

AASHTO T141 (ASTM C172) Practice for Sampling Freshly Mixed Concrete

AASHTO T152 (ASTM C231) Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method

AASHTO T196 (ASTM C173) Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

ASTM C1064 Test Method for Temperature of Freshly mixed Portland Cement Concrete

ASTM C1611 Standard Test Method for Slump Flow of Self-Consolidating Concrete”

Under the heading, Concrete Testing, delete the paragraph that begins:

“At least once per week, the Contractor shall make 2 concrete cylinders.....for use by the Department.....”

SECTION 713

STRUCTURAL STEEL AND RELATED MATERIAL

Section 713.01- Structural Steel Revise this Section by removing the sentence:

“ Impact test sampling and testing procedures shall be in accordance with AASHTO T.”

And replace it with: **“Impact test sampling and testing procedures shall be in accordance with AASHTO T 243 M/T 243 and AASHTO T 244.”**

SECTION 717

ROADSIDE IMPROVEMENT MATERIAL

717.02 Agricultural Ground Limestone

In the table after the third paragraph which starts with “Liquid lime...” change the Specification for Nitrogen (N) from “15.5 percent of which 1% is from ammoniac nitrogen and 14.5 /5 is from Nitrate Nitrogen” to read **“15.5 % of which 1% is from Ammoniacal Nitrogen and 14.5 % is from Nitrate Nitrogen”**

717.061 Erosion Control Blankets Revise this section by removing it in its entirety and replacing it with the following:

“717.061 Erosion Control Blankets Shall consist of a machine produced rolled blanket of biodegradable fibers, evenly distributed over the entire area of blanket, of a consistent thickness, sewn into a biodegradable mesh on the top and bottom surface using a cotton blend thread. The blanket shall remain in place when subject to shear stress of 1.55 lb/ft². The blanket shall remain intact until grass is established. The blanket shall be a product currently listed on the department’s Qualified Products List (QPL) of Erosion Control Products. See Section 618.10 - Seeding, Maintenance and Acceptance.”

SECTION 720

STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS

720.10 Wood Utility Pole Amend the first sentence in this section by adding “, **Red Pine**” after “Douglas Fir”.

Replace the paragraph beginning with “Wood Utility poles...” with:

“Wood Utility poles shall be pressure treated, after fabrication in accordance with AASHTO Specifications M 133 and AWP A U1, UC4B, Commodity Specification D: Poles.”

720.12 Wood Sign Posts Remove the first sentence and replace with **“Wood sign posts shall be rectangular, straight and sound timber, cut from live growing native spruce, red pine, hemlock or cedar trees, free from loose knots or other structurally weakening defects of importance, such as shake or holes or heart rot.”**

Remove the paragraph beginning with “When pressure treated sign posts are called for on the plans ...” with **“When pressure treated sign posts are called for on the plans, the wood shall be Yellow Pine, Number 2 or better, or the species listed above. The pressure treated wood shall meet AASHTO M 133 and AWP A Standard U1, UC4A, Commodity Specification A: Sawn Products.”**

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%
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Goals for minority participation for each trade

Maine

001 Bangor, ME	0.8%
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Non-SMSA Counties (Aroostook, Hancock, Penobscot, Piscataquis, Waldo, Washington)

002 Portland-Lewiston, ME

SMSA Counties: 4243 Lewiston-Auburn, ME (Androscoggin)	0.5%
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6403 Portland, ME (Cumberland, Sagadahoc)	0.6%
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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" ([expermnt.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)

FHWA STANDARD TITLE VI/NONDISCRIMINATION 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 *Nondiscrimination 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);

FHWA may include additional Statutory/Regulatory Authorities here.

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 FHWA..

The Civil Rights Restoration Act of 1987 clarified the original intent of Congress, with respect to Title VI and other Nondiscrimination 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 nondiscrimination statutes and requirements to include all programs and activities of the Recipient, so long as any portion of the program is Federally assisted.

FHWA may include additional General Assurances in this section, or reference an addendum here.

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 programs:

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 Highway Programs and, in adapted form, in all proposals for negotiated agreements regardless of funding source:

The (Agency), 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 insure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full 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.

FHWA may include additional Specific Assurances in this section.

By signing this ASSURANCE, Maine Department of Transportation also agrees to comply (and require any subrecipients, sub-grantees, contractors, successors, transferees, and/or assignees to comply) with all applicable provisions governing the FHWA 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 FHWA. You must keep records, reports, and submit the material for review upon request to FHWA, or their designees 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.

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. This ASSURANCE is binding on Maine Department of Transportation, other recipients, sub-recipients, sub-grantees, contractors, subcontractors and their subcontractors', transferees, successors in interest, and any other participants in it programs. . The person(s) signing below is authorized to sign this ASSURANCE on behalf of the Recipient.

Name of Recipient: Maine Department of Transportation

A handwritten signature in blue ink, appearing to read "D. Bernhardt", written over a horizontal line.

David Bernhardt, Commissioner

DATED: 9/18/14

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 Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, **Federal Highway Administration**, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** 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 as set forth in Appendix E, 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 **Federal Highway Administration**, 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 **Federal Highway Administration**, 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 **Federal Highway Administration**, 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.

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 **Federal Highway Administration**, 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 C TO MAINEDOT TITLE VI ASSURANCE)

FEDERAL HIGHWAY ADMINISTRATION ASSISTED PROGRAMS

The following clauses shall be included in all deeds, licenses, leases, permits, or similar instruments entered into

by the Maine Department of Transportation pursuant to the provisions of Assurance 7(a).

The (grantee, licensee, lessee, permittee, etc., as appropriate) for herself/himself, 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 in the event facilities are constructed, maintained, or otherwise operated on the said property described in this (deed, license, lease, permit, etc.) for a purpose for which a Department of Transportation program or activity is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee lessee, permittee, etc.) shall maintain and operate such facilities and services in compliance with all other requirements imposed pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination of Federally-Assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

[Include in licenses, leases, permits, etc.]*

That in the event of breach of any of the above nondiscrimination covenants, Maine Department of Transportation shall have the right to terminate the [license, lease, permit, etc.] and to re-enter and repossess said land and the facilities thereon, and hold the same as if said [licenses, lease, permit, etc.] had never been made or issued.

[Include in deeds]*

That in the event of breach of any of the above nondiscrimination covenants, Maine Department of Transportation shall have the right to re-enter said lands and facilities thereon, and the above described lands and facilities shall thereupon revert to and vest in and become the absolute property of Maine Department of Transportation and its assigns.

The following shall be included in all deeds, licenses, leases, permits, or similar agreements entered into by Maine Department of Transportation pursuant to the provisions of Assurance 7(b).

The (grantee, licensee, lessee, permittee, etc., as appropriate) for herself/himself, his/her personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in case of deeds, and leases add "as a covenant running with the land") that (1) no person on the grounds of race, color, or national origin shall be excluded from participation in, be 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 services thereon, no person on the grounds of race, color, or national origin shall be excluded from the participation in, be denied the benefits of, or be otherwise subjected to discrimination, and (3) that the (grantee, licensee, lessee, permittee, etc.) shall use the premises in compliance with all other requirements imposed by or pursuant to Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-Assisted Programs of the Department of Transportation - Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations may be amended.

[Include in licenses, leases, permits, etc.]*

That in the event of breach of any of the above nondiscrimination covenants, Maine Department of Transportation shall have the right to terminate the [license, lease, permit, etc.] and to re-enter and repossess said land and the facilities thereon, and hold the same as if said [license, lease, permit, etc.] had never been made or issued.

[Include in deeds]*

That in the event of breach of any of the above nondiscrimination covenants, Maine Department of Transportation shall have the right to re-enter said land and facilities thereon, and the above described lands and facilities shall thereupon revert to and vest in and become the absolute property of 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 in order to effectuate the purpose of Title VI of the Civil Rights Act of 1964.

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 discriminations, (3) that the (grantee, licensees, 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 U.S.C. §471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of 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 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 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-2018-01913
CORPS GP ID# 18-543
STATE ID# PBR

DESCRIPTION OF WORK:

Place temporary and permanent fill below the ordinary high water mark of Cobbosseecontee Stream and in adjacent freshwater wetlands at Gardiner, Maine in order to replace the Bridge Street and Maine Avenue bridges and to construct a new multi-use recreational trail and bridge. This work will result in approximately 4,565 s.f. of permanent and 4,800 s.f. of temporary stream bed impact, and 530 s.f. of permanent and 615 of temporary wetland impact. This work is shown on the attached plans entitled "MDOT WIN 18735.00/
Project Description Continued on Page 2

LAT/LONG COORDINATES : 44.23047° N -69.74480° W USGS QUAD: EAST PITTSTON, 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 enclosed Federal Permit, the Maine General Permit (GP). Accordingly, we do not plan to take any further action on this project.

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: 8/9/18 LEVEL OF REVIEW: CATEGORY 1: _____ CATEGORY 2: X

AUTHORITY (Based on a review of plans and/or State/Federal applications): SEC 10 _____, 404 X 10/404 _____, 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

for Jay L. Clement 9/29/18
FRANK J. DEL GIUDICE
CHIEF, PERMITS & ENFORCEMENT BRANCH
REGULATORY DIVISION



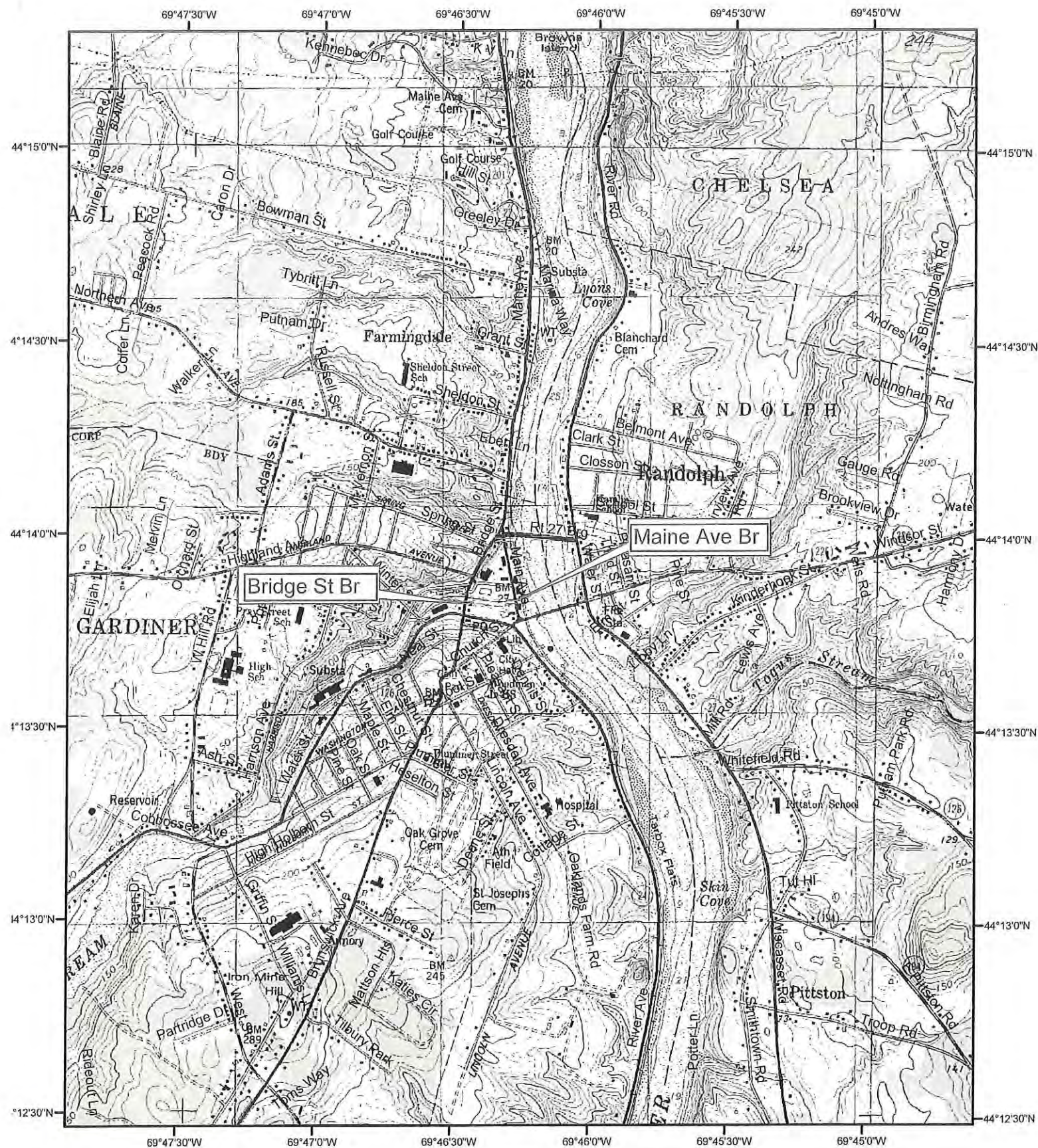
**US Army Corps
of Engineers**
New England District

Project Description Continued from Page 1

**18736.00, Gardiner-Bridge Street Bridge #2101, Maine Avenue Bridge #3098" in nine sheets dated "8/7/18", "GARDINER, RTE 9/126/US 201 & RTE 24" in one sheet undated, "BRIDGE STREET BRIDGE, COBBOSSEECONTEE STREAM, GARDINER, KENNEBEC COUNTY" in two sheets dated "JUN 2018", "MAINE AVENUE BRIDGE, COBBOSSEECONTEE STREAM, GARDINER, KENNEBEC COUNTY" in two sheets dated "JUN 2018", and "GARDINER, ARCADE/MAINE AVE." in one sheet dated "JUN 2018".
DOT WIN: 18736.10**

PLEASE NOTE THE FOLLOWING CONDITIONS FOR DEPARTMENT OF THE ARMY GENERAL PERMIT NO. NAE-2018-01913

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. In water work on the Maine Avenue bridge shall be conducted between November 8 and April 9 in order to minimize potential impacts to aquatic resources and local water quality. There is no in water work window restriction for the Bridge Street and multi-use recreational trail bridges.
7. The permittee shall comply with all designated Avoidance and Minimization Measures (AMMs) referenced in the FHWA Biological Assessment dated May 2018 and referenced by National Marine Fisheries Service concurrence in a letter dated June 1, 2018.



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44.23047

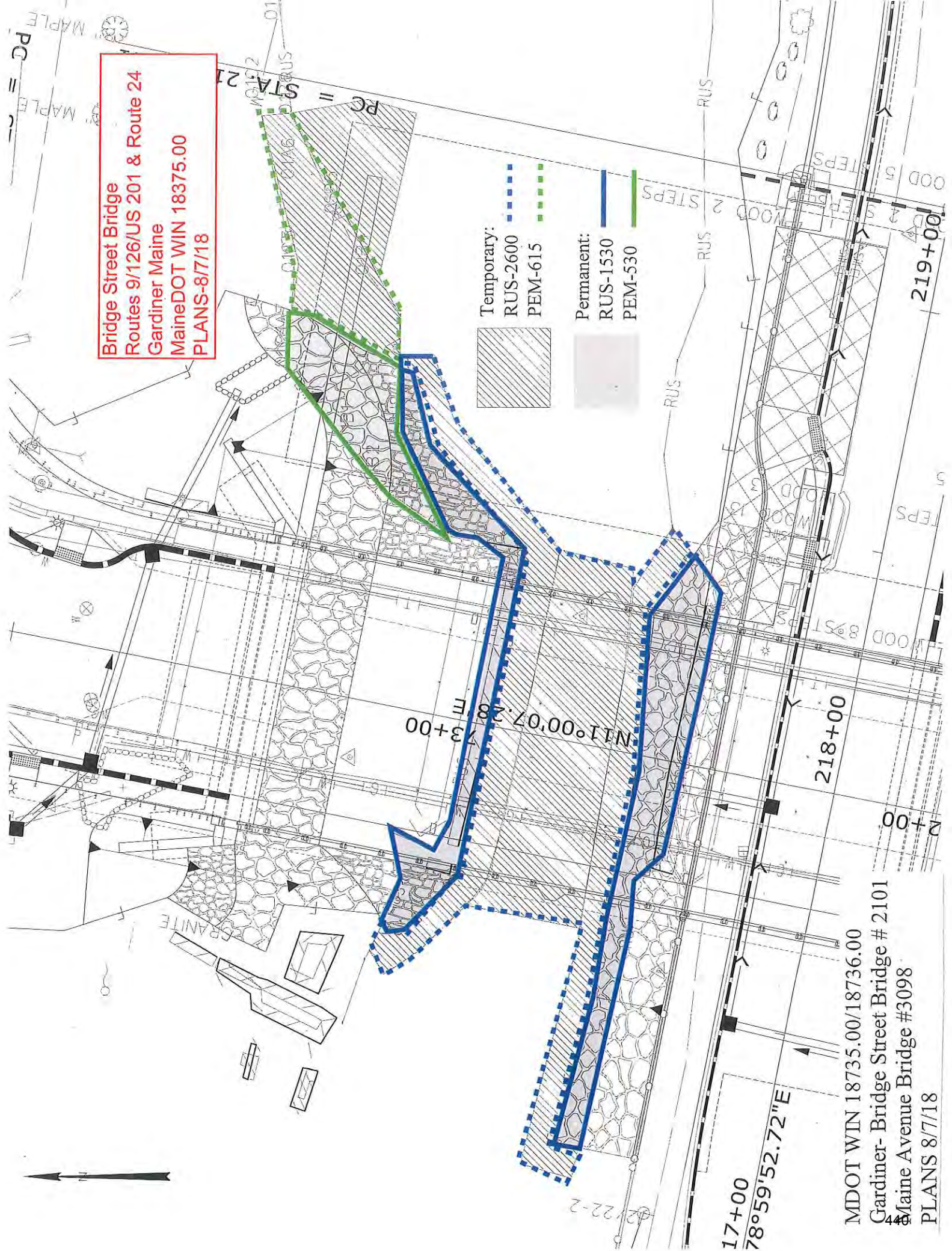
0 335 670 1,340 2,010 2,680 Feet

MDOT WIN 18735.00/18736.00
Gardiner- Bridge Street Bridge # 2101
Maine Avenue Bridge #3098
PLANS 8/7/18



Bridge Street Bridge
 Routes 9/126/US 201 & Route 24
 Gardiner Maine
 MaineDOT WIN 18375.00
 PLANS-8/7/18

- | | | | | |
|------------|--|----------|--|---------|
| Temporary: | | RUS-2600 | | PEM-615 |
| Permanent: | | RUS-1530 | | PEM-530 |



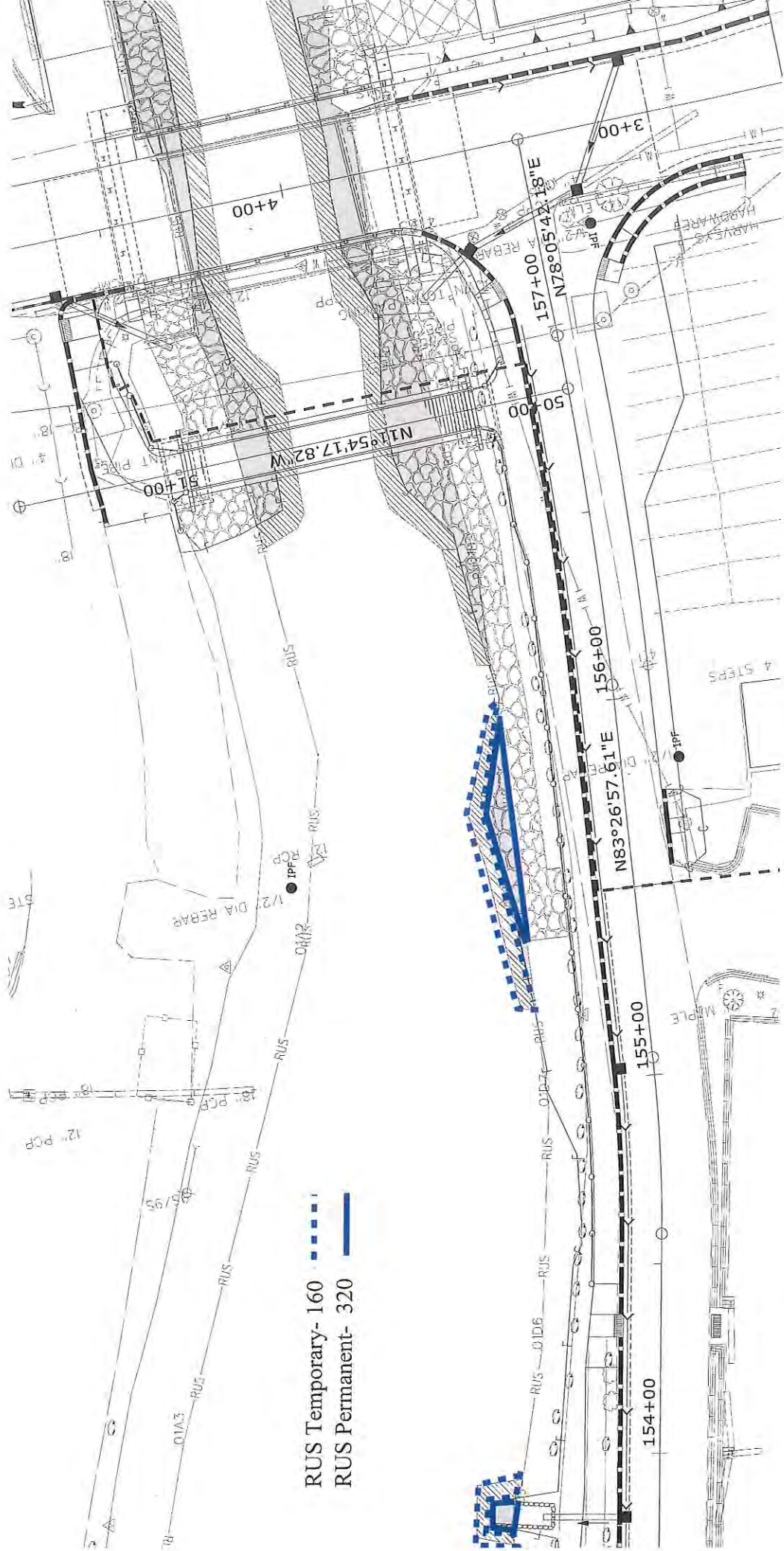
MDOT WIN 18375.00/18376.00
 Gardiner- Bridge Street Bridge # 2101
 Maine Avenue Bridge #3098
 PLANS 8/7/18

Maine Avenue Bridge
Gardiner, Maine
MaineDOT WIN 18736.00
PLANS- 8/7/18



MDOT WIN 18735.00/18736.00
Gardiner- Bridge Street Bridge # 2101
Maine Avenue Bridge #3098
PLANS 8/7/18

Multi Use Path
 Gardiner, Maine
 MaineDOT WIN 18376.01
 PLANS-8/7/18

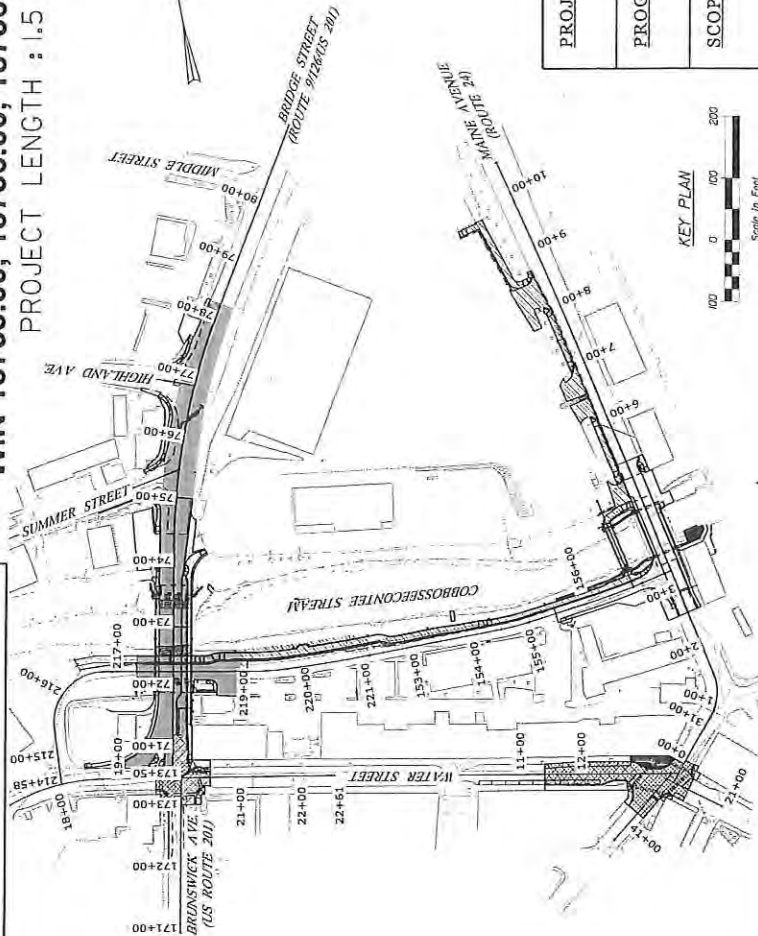


MDOT WIN 18735.00/18736.00
 Gardiner- Bridge Street Bridge # 2101
 Maine Avenue Bridge #3098
 PLANS 8/7/18

PLAN LEGEND

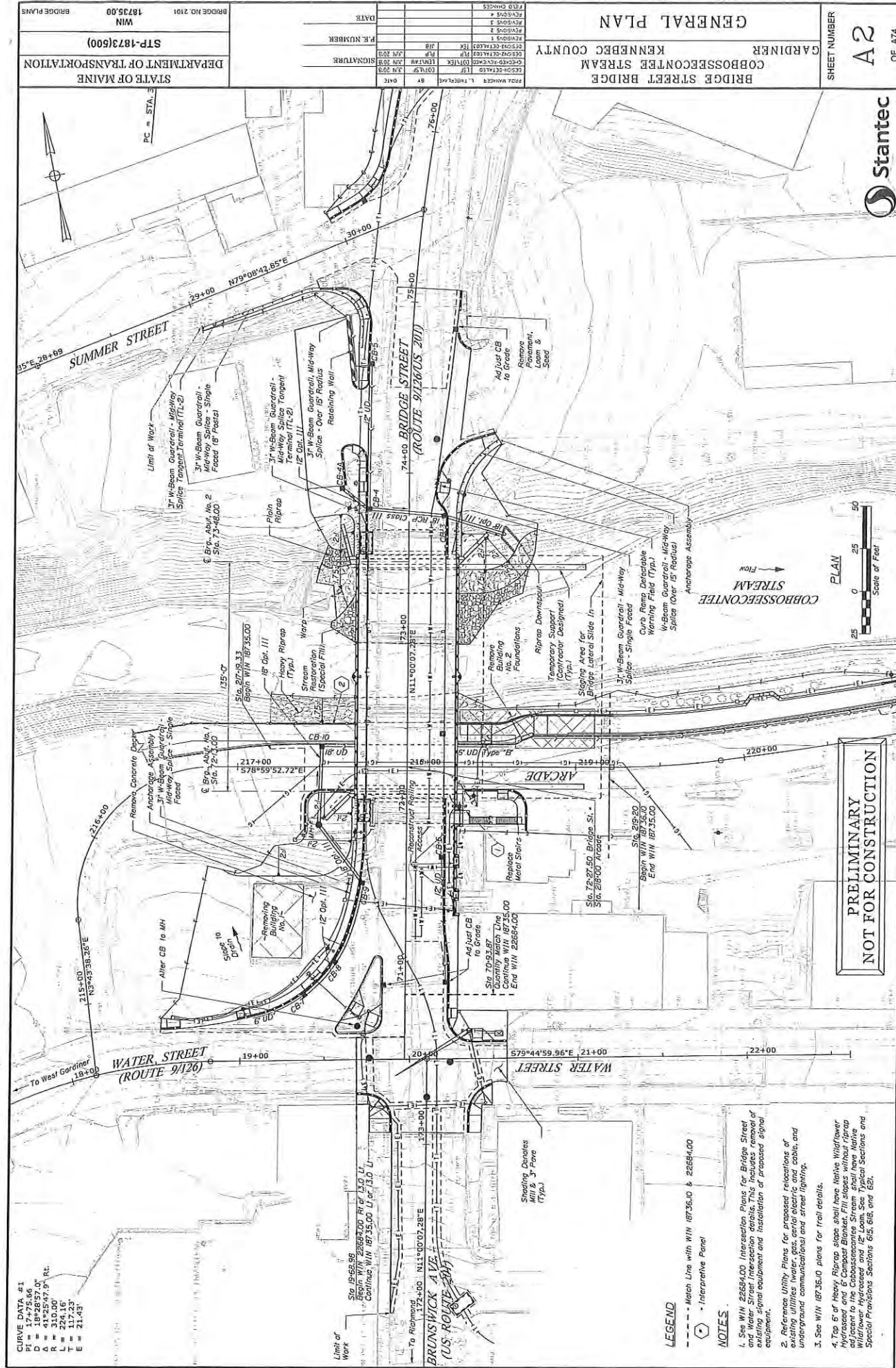
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<u>Description</u>	<u>Sheet No.</u>
Title Sheet	1
Estimated Quantities	2
Construction Notes	3-4
WIN 18735.00 Plans	A1-A74
WIN 18736.00 Plans	B1-B47
WIN 18736.10 Plans	C1-C15
WIN 22684.00 Plans	D1-D6
Cross-Sections	E1-E26
FairPoint Plans	F1-F5
WIN 18735.00 Water Plans	W1-W3
WIN 18736.00 Water Plans	W4-W6



90% PS&E SUBMITTAL
06/07/2018

<u>PROJECT LOCATION:</u>	Gardiner, Maine
<u>PROGRAM AREA:</u>	Bridge / Multimodal
<u>SCOPE OF WORK:</u>	Bridge Replacements, Multi-Use Trail and Bridge Construction, Traffic Signal Improvements



NOTE:

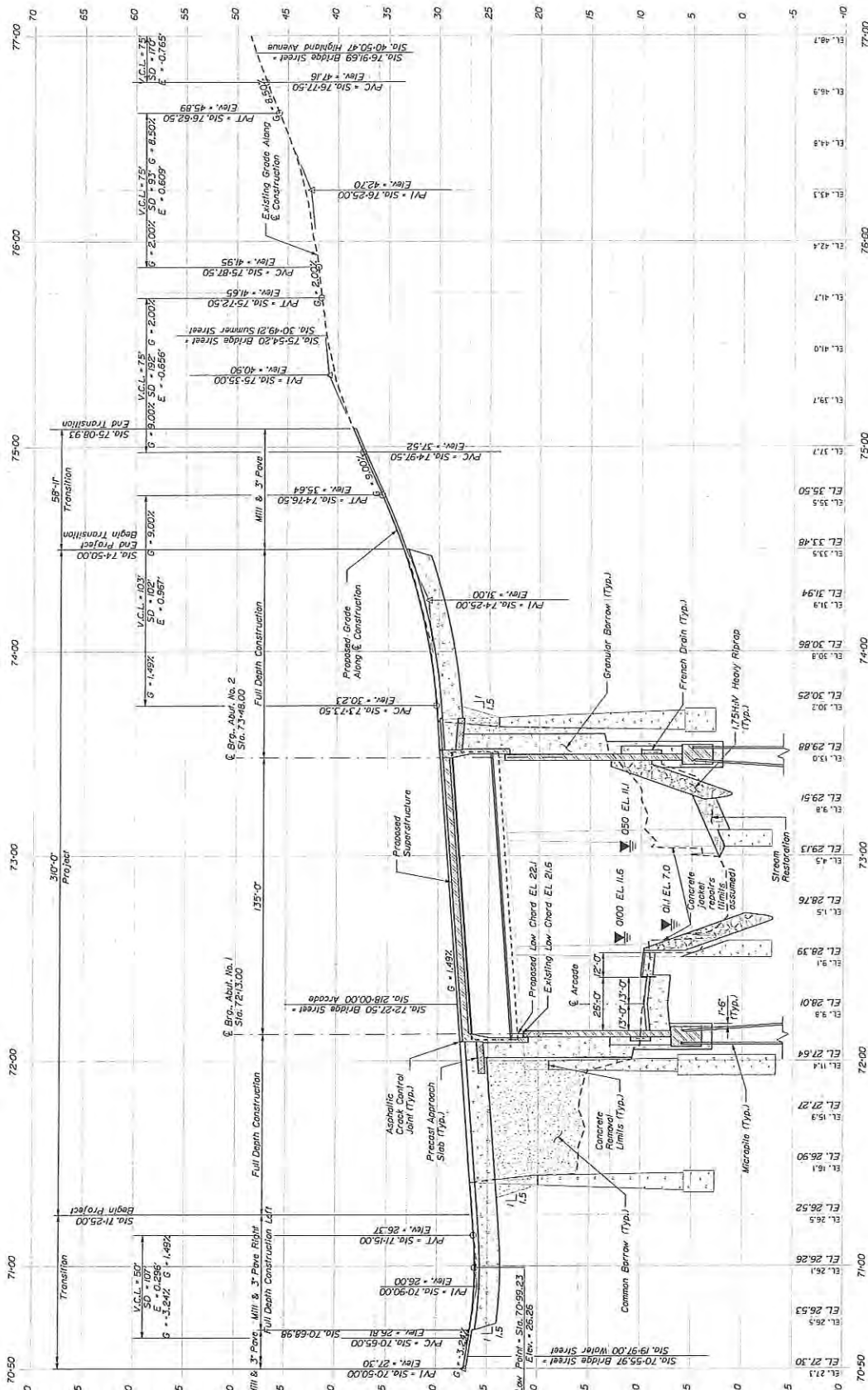
1. Existing substructure and foundation dimensions shown are based on a combination of existing plans and field observations. Actual conditions may differ from these Plans.
2. Existing vertical clearance at Arcade is 11'-0" Proposed vertical clearance at Arcade is 12'-0"

BRIDGE STREET PROFILE

Vert. 5 0 5 10

Horiz. 25 0 25 50

Scale of Feet

PRELIMINARY
NOT FOR CONSTRUCTION

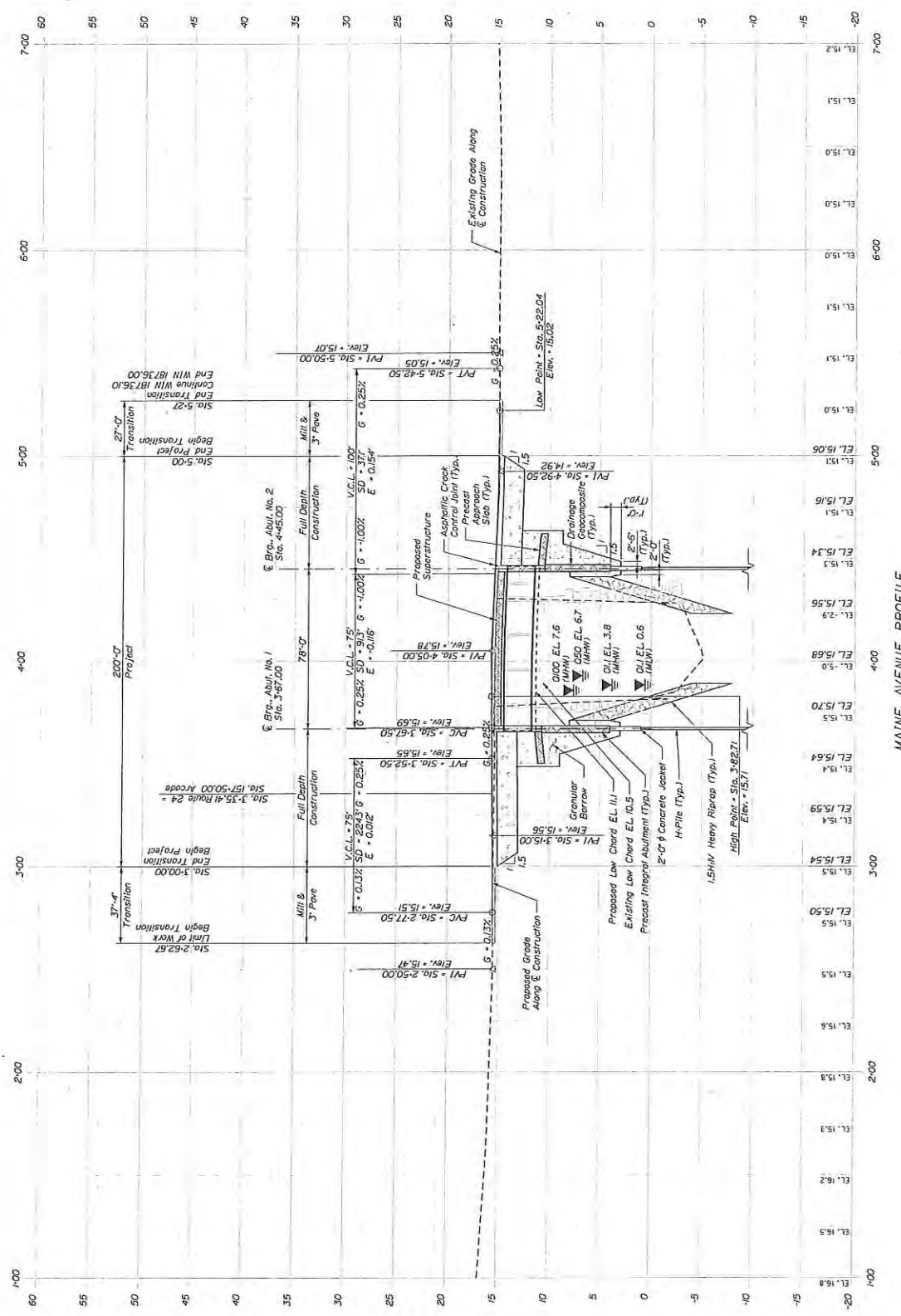
BRIDGE STREET BRIDGE
COBBOSSECONTEE STREAM
GARDINER
KENNEBEC COUNTY

PROFILE

DATE			
P.E. NUMBER			
SIGNATURE			

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
STP-1873(500)

PRELIMINARY
NOT FOR CONSTRUCTION

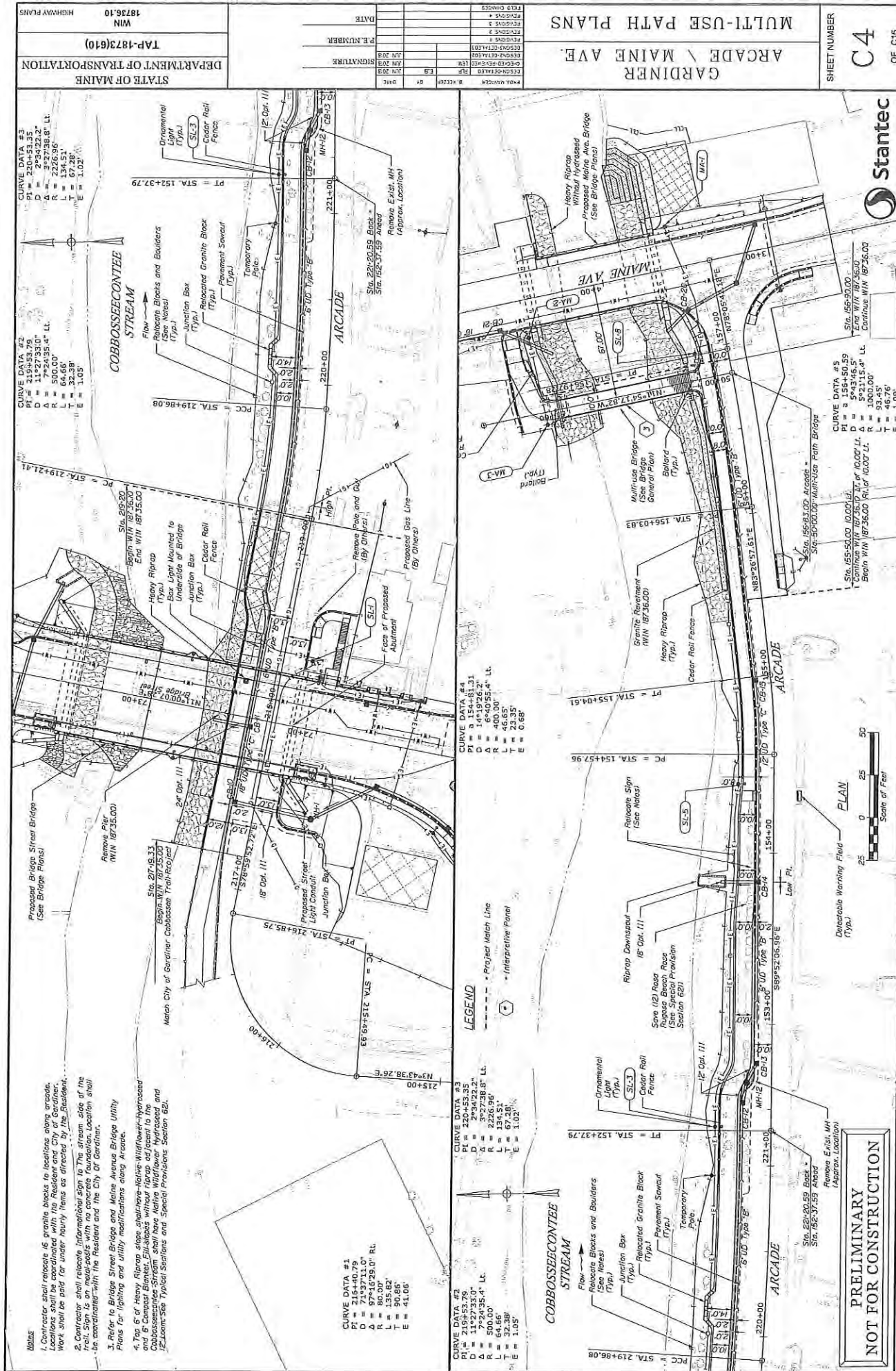


MAINE AVENUE BRIDGE
COBBOSECONTEE STREAM
CARDINER
KENNEBEC COUNTY

PROFILE

	SIGNATURE	P.E. NUMBER	DATE
JAN 2018	[Signature]		
FEB 2018	[Signature]		
MAR 2018	[Signature]		
APR 2018	[Signature]		
MAY 2018	[Signature]		
JUN 2018	[Signature]		
JUL 2018	[Signature]		
AUG 2018	[Signature]		
SEP 2018	[Signature]		
OCT 2018	[Signature]		
NOV 2018	[Signature]		
DEC 2018	[Signature]		

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	STP-1873(600)	WIN 18736.00	BRIDGE PLANS
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**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-2018-01913

MaineDOT WINs 18735, 18736, & 18736.10

Project Manager Clement

Name of Permittee: Maine Dept. of Transportation

Permit Issuance Date: 9/28/18

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

**GENERAL PERMIT
WORK-START NOTIFICATION FORM**
(Minimum Notice: Two weeks before work begins)

* MAIL TO: U.S. Army Corps of Engineers, New England District *
* Permits and Enforcement Branch *
* Regulatory Division *
* 696 Virginia Road *
* Concord, Massachusetts 01742-2751 *

Corps of Engineers Permit No. NAE-2018-01913 was issued to the Maine Dept. of Transportation on 9/28/18. This work is located in Cobbosseecontee Stream and in adjacent freshwater wetlands at Gardiner, Maine. The permit authorized the permittee to place temporary and permanent fill in order to replace the Bridge Street and Maine Avenue bridges and to construct a new multi-use recreational trail and bridge. This work will result in approximately 4,565 s.f. of permanent and 4,800 s.f. of temporary stream bed impact, and 530 s.f. of permanent and 615 of temporary wetland impact.

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: _____

Telephone Numbers: () _____ () _____

Proposed Work Dates: **Start:** _____ **Finish:** _____

Permittee/Agent Signature: _____ **Date:** _____

Printed Name: _____ **Title:** _____

Date Permit Issued: 9/28/18 **Date Permit Expires:** 10/13/2021

FOR USE BY THE CORPS OF ENGINEERS

PM: Clement **Submittals Required:** No

Inspection Recommendation: Inspect as convenient



Date Submitted: 10/26/18

ENV Field Contact: Val Derosier

NEPA Complete: 10/29/18- Individual Categorical Exclusion 771.1179(d)13

Section 6(f)
Not Applicable

 Section 7

Species of Concern: Northern Long-Eared Bat- Not Likely to Adversely Affect
Comments/References: Streamlined 4(d) Consultation completed (2018 Bridge Batch).

☒ **Maine Department of Environmental Protection**
Exempt from Permitting 38 M.R.S.A. Section 480-Q2d

☐ Stormwater Review
N/A

N/A	☐	Applicable	☒
N/A	☐	Applicable	☐
N/A	☐	Applicable	☒
N/A	☐	Applicable	☒
N/A	☐	Applicable	☐
N/A	☐	Applicable	☒
N/A	☐	Applicable	☒

451



Environmental Summary Sheet

WIN: 018736.00

Date Submitted: 10/26/18

Town: Gardiner

CPD Team Leader: Kristen Chamberlain

ENV Field Contact: Val Derosier

NEPA Complete: 6/7/18- Programmatic Categorical Exclusion 771.117(c)28

☒	Section 106 SHPO Concurrence -No Adverse Effect Section 106 Resources: Gardiner Historic District, Gardiner Railroad Station, Arnold Trail to Quebec (Railroad Corridor).																					
☒	Section 4(f) and 6(f) <u>Section 4(f)</u> Review Complete -de minimus use approved for temporary and permanent easements on the Gardiner Railroad Station. Plan changes that affect this property require ENV Office and FHWA review and approval. <u>Section 6(f)</u> Not Applicable																					
☒	Maine Department of Inland Fisheries and Wildlife Essential Habitat Not Applicable Timing Window: Not Applicable																					
☒	Section 7 Species of Concern: Atlantic sturgeon, Shortnose sturgeon, Atlantic salmon-Not likely to Adversely Affect Comments/References: Informal Section 7 Consultation completed with NMFS. 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 completed (2018 Bridge Batch).																					
☒	Essential Fish Habitat Minimal Adverse Effect																					
☒	Maine Department of Conservation/Public Lands, Submerged Land Lease Not Applicable																					
☒	Maine Land Use Regulation Commission N/A																					
☒	Maine Department of Environmental Protection <u>Exempt from Permitting</u> 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. Category 2 -Work Start Notification Form and Compliance Certification Form must be completed by the Resident and/or ENV Field Contact -In-water work window: November 8-April 9 - Special Conditions apply; See Special Provision 105 *Applicable Standards and Permits are included with the contract																					
☒	Stormwater Review N/A																					
☒	Special Provisions Required <table border="0"><tr><td>Special Provision 105-Timing of Work Restriction</td><td>N/A ☐</td><td>Applicable ☒</td></tr><tr><td>Special Provision 656-Minor Soil Disturbance</td><td>N/A ☐</td><td>Applicable ☐</td></tr><tr><td>Standard Specification 656-Erosion Control Plan</td><td>N/A ☐</td><td>Applicable ☒</td></tr><tr><td>Special Provision 203-Dredge Spec</td><td>N/A ☐</td><td>Applicable ☒</td></tr><tr><td>General Note for Hazardous Waste</td><td>N/A ☐</td><td>Applicable ☒</td></tr><tr><td>Special Provision 203-Hazardous Waste</td><td>N/A ☐</td><td>Applicable ☒</td></tr><tr><td>Special Provision 105.9</td><td>N/A ☐</td><td>Applicable ☐</td></tr></table>	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 ☐
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*All permits and approvals based on plans/scope as of: 8/7/18



Environmental Summary Sheet

WIN: 018736.10

Date Submitted: 10/23/18

Town: Gardiner

CPD Team Leader: Kristen Chamberlain

ENV Field Contact: Val Derosier

NEPA Complete: 10/23/18- Programmatic Categorical Exclusion 771.117(c)3

☒	Section 106 SHPO Concurrence -No Adverse Effect Section 106 Resources: Gardiner Historic District, Gardiner Railroad Station, Arnold Trail to Quebec (Railroad Corridor).																					
☒	Section 4(f) and 6(f) <u>Section 4(f)</u> Review Complete -no use <u>Section 6(f)</u> Not Applicable																					
☒	Maine Department of Inland Fisheries and Wildlife Essential Habitat Not Applicable Timing Window: Not Applicable																					
☒	Section 7 Species of Concern: Atlantic sturgeon, Shortnose sturgeon, Atlantic salmon-Not likely to Adversely Affect Comments/References: Informal Section 7 Consultation completed with NMFS. 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 completed under WIN 18736.00 (2018 Bridge Batch)																					
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☒	Maine Department of Conservation/Public Lands, Submerged Land Lease Not Applicable																					
☒	Maine Land Use Regulation Commission N/A																					
☒	Maine Department of Environmental Protection Permit by Rule (PBR) *Applicable Standards and Permits are included with the contract																					
☒	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 -In-water work window: open - Special Conditions apply; See Special Provision 105 *Applicable Standards and Permits are included with the contract																					
☒	Stormwater Review N/A																					
☒	Special Provisions Required <table border="0"> <tr> <td>Special Provision 105-Timing of Work Restriction</td> <td>N/A ☐</td> <td>Applicable ☒</td> </tr> <tr> <td>Special Provision 656-Minor Soil Disturbance</td> <td>N/A ☐</td> <td>Applicable ☐</td> </tr> <tr> <td>Standard Specification 656-Erosion Control Plan</td> <td>N/A ☐</td> <td>Applicable ☒</td> </tr> <tr> <td>Special Provision 203-Dredge Spec</td> <td>N/A ☐</td> <td>Applicable ☒</td> </tr> <tr> <td>General Note for Hazardous Waste</td> <td>N/A ☐</td> <td>Applicable ☒</td> </tr> <tr> <td>Special Provision 203-Hazardous Waste</td> <td>N/A ☐</td> <td>Applicable ☒</td> </tr> <tr> <td>Special Provision 105.9</td> <td>N/A ☐</td> <td>Applicable ☐</td> </tr> </table>	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 ☐
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*All permits and approvals based on plans/scope as of: 8/7/18



Environmental Summary Sheet

WIN: 22684.00

Date Submitted: 10/26/18

Town: Gardiner

CPD Team Leader: Kristen Chamberlain

ENV Field Contact: Val Derosier

NEPA Complete: 10/29/18- Individual Categorical Exclusion 771.177(d)13

- ☒ **Section 106**
SHPO Concurrence -Adverse Effect
Section 106 Resources: Gardiner Historic District. Changes to bid plans require review and approval from MaineDOT ENV, MHPC and FHWA.
- ☒ **Section 4(f) and 6(f)**
Section 4(f)
Review Complete -Individual 4(f) approved. Changes to bid plans require review and approval from MaineDOT ENV, MHPC and FHWA.
- Section 6(f)
Not Applicable

- ☒ **Maine Department of Inland Fisheries and Wildlife Essential Habitat**
Not Applicable Timing Window: Not Applicable

- ☒ **Section 7**
- Species of Concern: Northern Long-Eared Bat-No Effect**
Comments/References: No tree removal required.
- Species of Concern: Atlantic salmon, Atlantic sturgeon, Shortnose Sturgeon- No Effect**
Comments/References: No in-water work under this WIN.

- ☒ **Essential Fish Habitat**
No Effect-No in-water work

- ☒ **Maine Department of Conservation/Public Lands, Submerged Land Lease**
Not Applicable

- ☒ **Maine Land Use Regulation Commission**
Not applicable

- ☒ **Maine Department of Environmental Protection**
Not Applicable

- ☒ **Army Corps of Engineers, Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.**
Not Applicable

- ☒ **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: 9/23/18