MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

CONTRACT DOCUMENTS

CONTRACT 2022.02

EXIT 36 IMPROVEMENTS AND
PAVEMENT REHABILITATION
MM 35.5 TO MM 36.2

CULVERT OUTLET DITCHING
MM 34.9

EXIT 25 PAVING
MM 25.5

EXITS 32 & 42 INTERSECTION
MODIFICATIONS
MM 31.6 & MM 42.6

NOTICE TO CONTRACTORS

PROPOSAL

CONTRACT AGREEMENT

CONTRACT BOND

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

SPECIFICATIONS

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

The Specifications are divided into two parts:
Part I, Supplemental Specifications and Part II, Special Provisions.

The Maine Turnpike Supplemental Specifications are additions and alterations to the 2014 Maine Department of Transportation Standard Specifications. See Subsection 100.1.

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MAINE TURNPIKE AUTHORITY

NOTICE TO CONTRACTORS

Sealed Proposals will be received by the Maine Turnpike Authority for:

CONTRACT 2022.02

EXIT 36 IMPROVEMENTS AND
PAVEMENT REHABILITATION
MM 35.5 TO MM 36.2

CULVERT OUTLET DITCHING
MM 34.9

EXIT 25 PAVING
MM 25.5

EXITS 32 & 42 INTERSECTION
MODIFICATIONS
MM 31.6 & MM 42.6

at the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, ME, until 11:00 a.m., prevailing time as determined by the Authority on March 24, 2022, at which time and place the Proposals will be publicly opened and read. Bids will be accepted from Contractors **prequalified** by the Maine Department of Transportation for Paving Construction Projects. All other bids may be rejected. This Project includes a wage determination developed by the State of Maine Department of Labor.

The Exit 36 Improvements and Pavement Rehabilitation work consists of milling and paving the Exit 36 interchange ramps and left shoulders and I-195 eastbound and westbound lanes and left shoulders, construction of approximately 1200 linear feet of acceleration lane shoulder, slope repairs, drainage improvements, guardrail improvements, median grading, highway lighting and electrical service, and culvert removal with approximately 30 linear feet of stream restoration in the City of Saco, Maine. The culvert outlet ditching work consists of constructing approximately 170 linear feet of drainage ditch within a wetland area in the City of Saco, Maine. Pavement markings, maintenance of traffic, and all other work incidental thereto will be complete in accordance with the plans and specifications.

The Exit 25 Paving work consists of milling, paving, and striping the northbound toll plaza approaches from Route 35 to 250 ft north of the toll plaza. This work also includes milling, paving, and striping approximately 180 ft of the Kennebunk Maintenance Facility Entrance starting at Route 35 and approximately 190 ft of the Diesel Fuel Entrance.

The intersection modification work at Exit 32 consists of reconstructing median islands on the Route 111 approaches, changing the Thru/Left lane to a Left Only lane on the Exit 32 off ramp approach, changing the Thru/Left lane to a Thru Only lane on the Biddeford Connector approach,

relocating two signal mast arms, and relocating the signal controller. The work includes rewiring the whole signal system and connecting the new system to the generator located at the Exit 32 toll facility.

The work at Exit 42 consists of relocating the mast arm in the northwest quadrant of the intersection to a new foundation.

Plans and Contract Documents may be examined by prospective Bidders weekdays between 8:00 a.m. and 4:30 p.m. at the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine. **The half size Plans** and Contract Documents may be obtained from the Authority upon payment of One Hundred ($100.00) Dollars for each set, which payment will not be returned. Checks shall be made payable to: Maine Turnpike Authority. The Plans and Contract Documents may also be downloaded from a link on our website at http://www.maineturnpike.com/project-and-planning/Construction-Contracts.aspx.

For general information regarding Bidding and Contracting procedures, contact Nate Carll, Purchasing Manager, at (207) 482-8115. For information regarding Schedule of Items, plan holders list and bid results, visit our website at **http://www.maineturnpike.com/project-and-planning/Construction-Contracts.aspx** . For Project specific information, fax all questions to Nate Carll, Purchasing Manager, at (207) 871-7739 or email ncarll@maineturnpike.com. Responses will not be prepared for questions received by telephone. Bidders shall not contact any other Authority staff or Consultants for clarification of Contract provisions, and the Authority will not be responsible for any interpretations so obtained.

All work shall be governed by the Specifications entitled "State of Maine, Department of Transportation, Standard Specifications, Revision of November 2014", "Standard Details" latest revision and "Best Management Practices for Erosion and Sediment Control", latest issue. Copies and recent updates to these publications can be downloaded at: http://www.maine.gov/mdot/contractors/publications/ .

Proposals must be accompanied by an original bid bond, certified or cashier's check payable to the Maine Turnpike Authority in an amount not less than Five (5%) Percent of the Total Amount in the Proposal, but not less than $500.00. The Bidder to whom a Contract is awarded will be required to furnish a Surety Corporation Bond, satisfactory to the Authority, on the standard Contract Bond form of the Authority, for a sum not less than the Total Amount of the Proposal.

Proposals must be made upon the Proposal Forms furnished by the Authority separately with the Contract Documents, and must be enclosed in the sealed special addressed envelope provided therefore bearing the name and address of the Bidder, the name of the Contract, and the date and time of Proposal opening on the outside.

A pre-bid conference will be held on March 8, 2022 at 10:00 a.m. at the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine.

The Authority reserves the unqualified right to reject any or all Proposals and to accept that Proposal which in its sole judgment will under all circumstances serve its best interest.

MAINE TURNPIKE AUTHORITY

Nate Carll
Purchasing Manager
Maine Turnpike Authority
Portland, Maine

Maine Turnpike Authority

MAINE TURNPIKE

PROPOSAL

CONTRACT 2022.02

EXIT 36 IMPROVEMENTS AND PAVEMENT REHABILITATION
MM 35.5 TO MM 36.2

CULVERT OUTLET DITCHING
MM 34.9

EXIT 25 PAVING
MM 25.5

EXITS 32 & 42 INTERSECTION MODIFICATIONS
MM 31.6 & MM 42.6

MAINE TURNPIKE AUTHORITY

PROPOSAL

CONTRACT 2022.02

EXIT 36 IMPROVEMENTS AND
PAVEMENT REHABILITATION
MM 35.5 TO MM 36.2

CULVERT OUTLET DITCHING
MM 34.9

EXIT 25 PAVING
MM 25.5

EXITS 32 & 42 INTERSECTION
MODIFICATIONS
MM 31.6 & MM 42.6

TO MAINE TURNPIKE AUTHORITY:

The Exit 36 Improvements and Pavement Rehabilitation work consists of milling and paving the Exit 36 interchange ramps and left shoulders and I-195 eastbound and westbound lanes and left shoulders, construction of approximately 1200 linear feet of acceleration lane shoulder, slope repairs, drainage improvements, guardrail improvements, median grading, highway lighting and electrical service, and culvert removal with approximately 30 linear feet of stream restoration in the City of Saco, Maine. The culvert outlet ditching work consists of constructing approximately 170 linear feet of drainage ditch within a wetland area in the City of Saco, Maine. Pavement markings, maintenance of traffic, and all other work incidental thereto will be complete in accordance with the plans and specifications.

The Exit 25 Paving work consists of milling, paving, and striping the northbound toll plaza approaches from Route 35 to 250 ft north of the toll plaza. This work also includes milling, paving, and striping approximately 180 ft of the Kennebunk Maintenance Facility Entrance starting at Route 35 and approximately 190 ft of the Diesel Fuel Entrance.

The intersection modification work at Exit 32 consists of reconstructing median islands on the Route 111 approaches, changing the Thru/Left lane to a Left Only lane on the Exit 32 off ramp approach, changing the Thru/Left lane to a Thru Only lane on the Biddeford Connector approach, relocating two signal mast arms, and relocating the signal controller. The work includes rewiring the whole signal system and connecting the new system to the generator located at the Exit 32 toll facility.

The work at Exit 42 consists of relocating the mast arm in the northwest quadrant of the intersection to a new foundation.

This Work will be done under a Contract known as Contract 2022.02 according to the Plans and Specifications which are on file in the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine.

On the acceptance of this Proposal for said Work, the undersigned will give the required bond with good security conditioned for the faithful performance of said Work, according to said Plans and Specifications, and the doing of all other work required by said Specifications for the consideration herein named and with the further condition that the Maine Turnpike Authority shall be saved harmless from any and all damages that might accrue to any person, persons or property by reason of the carrying out of said Work, or any part thereof, or by reason of negligence of the undersigned, or any person or persons under their employment and engaged in said Work.

The undersigned hereby declares that he/she has carefully examined the Plans, Specifications and other Contract Documents, and that he/she will contract to carry out and complete the said Work as specified and delineated at the price per unit of measure for each scheduled item of Work stated in the Schedule of Prices as follows:

It is understood that the TOTAL AMOUNT stated by the undersigned in the following Schedule of Prices is based on approximate quantities and will be used solely for the comparison of bids, and that the quantities stated in the Schedule of Prices for the various items are estimates only and may be increased or decreased all as provided in the Specifications.

SCHEDULE OF BID PRICES
CONTRACT NO. 2022.02
Exit 36 Improvements and Pavement Rehabilitation (MM 35.5 to MM 36.2)
Culvert Outlet Ditch (MM 34.9) - Exit 25 Paving (MM 25.5)
Exits 43 & 42 Intersection Modifications (MM 31.6 & MM 42.6)

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
201.11	CLEARING	Acre	1				
202.202	REMOVING PAVEMENT SURFACE	Square Yard	39,620				
202.2026	REMOVING PAVEMENT SURFACE - DRAINAGE PATHS	Square Foot	290				
203.20	COMMON EXCAVATION	Cubic Yard	3,090				
203.25	GRANULAR BORROW	Cubic Yard	1,771				
203.33	SPECIAL FILL - STREAMBED MATERIAL	Cubic Yard	8				
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	Cubic Yard	560				
304.14	AGGREGATE BASE COURSE - TYPE A	Cubic Yard	370				
403.207	HOT MIX ASPHALT, 19.0 mm NOMINAL MAXIMUM SIZE	Ton	440				
403.2081	HOT MIX ASPHALT, 12.5 mm (POLYMER MODIFIED) - RAP	Ton	3,490				
403.211	HOT MIX ASPHALT, 9.5 mm NOMINAL MAXIMUM SIZE (SHIMMING)	Ton	100				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
403.213	HOT MIX ASPHALT, 12.5 mm NOMINAL MAXIMUM SIZE (BASE AND INTERMEDIATE BASE COURSE)	Ton	140				
409.152	BITUMINOUS TACK COAT NTSS - 1HM TRACKLESS - APPLIED	Gallon	2,650				
419.30	SAWING BITUMINOUS PAVEMENT	Linear Foot	1,750				
424.323	ASPHALT RUBBER MASTIC CRACK SEALER - APPLIED	Pound	4,140				
470.08	BERM DROPOFF CORRECTION - GRINDINGS	Ton	440				
470.081	BERM CORRECTION	Linear Foot	990				
511.071	COFFERDAM	Lump Sum	1				
515.201	PIGMENTED PROTECTIVE COATING FOR CONCRETE SURFACES	Square Yard	610				
526.301	TEMPORARY CONCRETE BARRIER TYPE I	Linear Foot	1,350				
527.341	WORK ZONE CRASH CUSHION - TL-3	Unit	1				
603.155	12 INCH REINFORCED CONCRETE PIPE - CLASS III	Linear Foot	20				
603.215	36 INCH REINFORCED CONCRETE PIPE - CLASS III	Linear Foot	16				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
603.28	CONCRETE COLLAR	Each	4				
603.7415	REMOVE & RELAY 15" CONCRETE PIPE	Linear Foot	8				
603.7418	REMOVE & RELAY 18" CONCRETE PIPE	Linear Foot	8				
604.18	ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	Each	1				
604.182	CLEANING EXISTING CATCH BASIN AND MANHOLE	Each	10				
604.184	REBUILD CATCH BASIN TO GRADE - TYPE II	Each	1				
604.246	CATCH BASIN TYPE F5	Each	1				
605.11	12 INCH UNDERDRAIN TYPE C	Linear Foot	110				
606.13	31" W-BEAM GUARDRAIL - MID-WAY SPLICE (7' STEEL POSTS, 8" OFFSET BLOCKS, SINGLE FACED)	Linear Foot	520				
606.1307	31" W-BEAM GUARDRAIL - MID-WAY SPLICE FLARED TERMINAL	Each	4				
606.132	31" W-BEAM GUARDRAIL - MID-WAY SPLICE (7' STEEL POSTS, 8" OFFSET BLOCKS, DOUBLE FACED)	Linear Foot	47				
606.1351	31" W-BEAM GUARDRAIL - MID-WAY SPLICE TERMINAL END - ANCHORED END	Each	8				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
606.178	GUARDRAIL BEAM	Linear Foot	50				
606.352	REFLECTORIZED BEAM GUARDRAIL DELINEATOR	Each	200				
606.356	UNDERDRAIN DELINEATOR POST	Each	41				
606.3561	DELINEATOR POST - REMOVE AND RESET	Each	20				
606.3621	GUARDRAIL ADJUST, SINGLE RAIL	Linear Foot	6,550				
606.3622	GUARDRAIL ADJUST, DOUBLE RAIL	Linear Foot	240				
606.471	SINGLE OFFSET BLOCK - W BEAM	Each	20				
606.48	SINGLE GALVANIZED STEEL POST	Each	10				
606.755	MODIFY WIDENED SHOULDER FOR GUARDRAIL TERMINAL	Each	4				
610.08	PLAIN RIPRAP	Cubic Yard	670				
610.181	TEMPORARY STONE CHECK DAM	Cubic Yard	38				
610.213	VOID-FILLED RIPRAP - TYPE A OR B	Cubic Yard	72				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
613.319	EROSION CONTROL BLANKET	Square Yard	1,050				
615.07	LOAM	Cubic Yard	290				
618.14	SEEDING METHOD NUMBER 2	Unit	51				
619.1201	MULCH - PLAN QUANTITY	Unit	51				
619.1202	TEMPORARY MULCH	Lump Sum	1				
619.1401	EROSION CONTROL MIX	Cubic Yard	60				
620.58	EROSION CONTROL GEOTEXTILE	Square Yard	1,700				
626.121	QUAZITE JUNCTION BOX (36X24)	Each	11				
626.122	QUAZITE JUNCTION BOX (18X11)	Each	11				
626.22	NON-METALLIC CONDUIT	Linear Foot	5,800				
626.223	HORIZONTAL DIRECTIONAL DRILLED CONDUIT	Linear Foot	710				
626.32	24 INCH DIAMETER FOUNDATION	Each	6				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
626.35	CONTROLLER CABINET FOUNDATION	Each	1				
626.36	REMOVE OR MODIFY CONCRETE FOUNDATION	Each	4				
626.38	GROUND MOUNTED CABINET FOUNDATION	Each	1				
626.48	60-INCH DIAMETER FOUNDATION	Linear Foot	48				
627.18	12" SOLID WHITE PAVEMENT MARKING LINE	Linear Foot	550				
627.712	WHITE OR YELLOW PAVEMENT MARKING LINE	Linear Foot	30,050				
627.73	TEMPORARY 6 INCH PAVEMENT MARKING TAPE	Linear Foot	620				
627.733	4" WHITE OR YELLOW PAVEMENT MARKING LINE	Linear Foot	340				
627.75	WHITE OR YELLOW PAVEMENT & CURB MARKING	Square Foot	920				
627.77	REMOVING EXISTING PAVEMENT MARKING	Square Foot	2,750				
627.78	TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW	Linear Foot	32,350				
627.812	TEMPORARY RAISED PAVEMENT MARKERS	Each	1,800				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
627.94	PAVEMENT MARKING TAPE	Linear Foot	170				
627.941	PAVEMENT MARKING TAPE – DOTTED WHITE LANE LINE, 6-INCH WIDTH	Linear Foot	240				
627.944	PAVEMENT MARKINGS - RECESSED TAPE - WORDS, ARROWS, STOP BARS	Square Foot	60				
629.05	HAND LABOR, STRAIGHT TIME	Hour	20				
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	Hour	10				
631.133	SKID STEER (INCLUDING OPERATOR)	Hour	20				
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	Hour	20				
631.22	FRONT END LOADER (INCLUDING OPERATOR)	Hour	10				
631.32	CULVERT CLEANER (INCLUDING OPERATOR)	Hour	20				
631.36	FOREMAN	Hour	20				
631.53	ELECTRICIAN	Hour	20				
634.1612	HIGHWAY LIGHTING PANEL AND SERVICE UPGRADES	Lump Sum	1				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
634.2312	CONVENTIONAL LIGHT STANDARD WITH LED FIXTURE - SUPPLIED BY THE AUTHORITY	Each	5				
643.71	TRAFFIC SIGNAL MODIFICATION AT: EXIT 32 AND ROUTE 111	Lump Sum	1				
643.9111	RESET EXISTING MAST ARM POLES: MA4 - Exit 32	Lump Sum	1				
643.9112	RESET EXISTING MAST ARM POLES: MA3 - Exit 32	Lump Sum	1				
643.9113	RESET EXISTING MAST ARM POLES: EXIT 42	Lump Sum	1				
643.92	PEDESTAL POLE	Each	1				
645.105	REMOVE AND STACK SIGN	Each	5				
645.109	REMOVE AND RESET SIGN	Each	3				
645.271	REGULATORY, WARNING, CONFIRMATION AND ROUTE ASSEMBLY SIGN, TYPE I	Square Foot	42				
652.30	FLASHING ARROW	Each	4				
652.312	TYPE III BARRICADES	Each	6				
652.33	DRUM	Each	370				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
652.34	CONE	Each	165				
652.35	CONSTRUCTION SIGNS	Square Foot	3,140				
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	Lump Sum	1.0				
652.38	FLAGGERS	Hour	340				
652.381	TRAFFIC OFFICERS	Hour	33				
652.41	PORTABLE-CHANGEABLE MESSAGE SIGN	Each	10				
652.45	TRUCK MOUNTED ATTENUATOR	Cal. Day	83				
652.452	AUTOMATED TRAILER MOUNTED SPEED LIMIT SIGN	Each	2				
652.47	SEQUENTIAL FLASHING WARNING LIGHTS	Each	30				
656.50	BALED HAY, IN-PLACE	Each	50				
656.60	TEMPORARY BERMS	Linear Foot	1,850				
656.62	TEMPORARY SLOPE DRAINS	Linear Foot	100				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
656.632	30" TEMPORARY SILT FENCE	Linear Foot	4,720				
659.10	MOBILIZATION	Lump Sum	1				
				TOTAL:			

Acknowledgment is hereby made of the following Addenda received since issuance of the Plans and Specifications: _____

_____

_____

Accompanying this Proposal is an original bid bond, cashiers or certified check on _____ Bank, for _____, payable to the Maine Turnpike Authority. In case this Proposal shall be accepted by the Maine Turnpike Authority and the undersigned should fail to execute a Contract with, and furnish the security required by the Maine Turnpike Authority as set forth in the Specifications, within the time fixed therein, an amount of money equal to Five (5%) Percent of the Total Amount of the Proposal for the Contract awarded to the undersigned, but not less than $500.00, obtained out of the original bid bond, cashier's or certified check, shall become the property of the Maine Turnpike Authority; otherwise the check will be returned to the undersigned.

The performance of said Work under this Contract will be completed during the time specified in Subsection 107.1.

It is agreed that time is of the essence of this Contract and that I (we) will, in the event of my (our) failure to complete the Work within the time limit named above, pay to Maine Turnpike Authority liquidated damages in the amount or amounts stated in the Specifications.

The undersigned is an Individual/Partnership/Corporation under the laws of the State of _____, having principal office at _____, thereunto duly authorized.

_____ *(SEAL)*

_____ *(SEAL)*

Affix Corporate Seal
or Power of Attorney
Where Applicable

_____ *(SEAL)*

By: _____

Its: _____

Information below to be typed or printed where applicable:

INDIVIDUAL:

(Name)	(Address)

PARTNERSHIP - Name and Address of General Partners:

(Name)	(Address)
(Name)	(Address)
(Name)	(Address)
(Name)	(Address)

INCORPORATED COMPANY:

(President)	(Address)
(Vice-President)	(Address)
(Secretary)	(Address)
(Treasurer)	(Address)

MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

YORK TO AUGUSTA

CONTRACT AGREEMENT

This Agreement made and entered into between the Maine Turnpike Authority, and sometimes termed the "Authority", and _____

_____

herein termed the "Contractor":

WITNESSETH: That the Authority and the Contractor, in consideration of the premises and of the mutual covenants, considerations and agreements herein contained, agree as follows:

FIRST: The parties hereto mutually agree that the documents attached hereto and herein incorporated and made a part hereof collectively evidencing and constituting the entire Contract to the same extent as if herein written in full, are the Notice to Contractors, the Accepted Proposal, the Specifications, the Plans, this Agreement, the Contract Bond and all Addenda to the Contract Documents duly issued and herewith enumerated:

_____

_____

SECOND: The Contractor for and in consideration of certain payments to be made as hereafter specified, hereby covenants and agrees to perform and execute all of the provisions of this Contract and of all documents and parts attached hereto and made a part thereof, and at his own cost and expense to furnish and perform everything necessary and required to construct and complete, ready for its intended purpose, in accordance with the Contract and such instructions as the Engineer may give, acceptable to the Authority, in the times provided, all of the Work covered and included under Contract No. _____ covering _____ as herein described.

THIRD: In consideration of the performance by the Contractor of his covenants and agreements as herein set forth, the Authority hereby covenants and agrees to pay the Contractor according to the Schedule of Prices set forth in the Proposal with additions and deductions as elsewhere herein provided in the times and in the manner stated in the Specifications. This Agreement shall insure to the benefit of, and shall be binding upon the parties hereto, and upon their respective successors and assigns; but neither party hereto shall assign or transfer his interest herein in whole or in part without the consent of the other, except as herein provided.

IN WITNESS WHEREOF the parties to this Agreement have executed the same in quintuplicate.

AUTHORITY -

MAINE TURNPIKE AUTHORITY

By: _____

Title: CHAIRMAN

Date of Signature: _____

ATTEST:

_____
Secretary

CONTRACTOR -

_____
CONTRACTOR

By: _____

Title: _____

Date of Signature: _____

WITNESS:

_____

CONTRACT BOND

KNOW ALL MEN BY THESE PRESENTS that _____

of _____ in the County of _____ and 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 Maine Turnpike Authority in the sum of _____Dollars ($_____.___), to be paid to said Maine Turnpike Authority, or its successors, for which payment, well and truly to be made, we bind ourselves, our heirs, executors, successors and assigns jointly and severally by these presents.

The condition of this obligation is such that the Principal, designated as Contractor in the foregoing Contract No. _____ shall faithfully perform the Contract on his part and satisfy all claims and demands incurred for the same and shall pay all bills for labor, material, equipment and all other items contracted for, or used by him, in connection with the Work contemplated by said Contract, and shall fully reimburse 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.

Signed and sealed this _____ day of _____, A.D., 202___

Witnesses: CONTRACTOR

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

SURETY

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

_____ _____ *(SEAL)*

(Surety must attach copy of Power of Attorney showing authority of Office or Agent to execute bonds)

FINAL LIEN AND CLAIM WAIVER AND AFFIDAVIT

Upon receipt of the sum of _____, which sum represents the total amount paid, including the current payment for work done and materials supplied for Project No. _____, in _____, Maine, under the undersigned's Contract with the Maine Turnpike Authority.

The undersigned, on oath, states that the Final Payment of _____ is the final payment for all work, labor, materials, services and miscellaneous (all of which are hereinafter referred to as "Work Items") supplied to the said Project through _____and that no additional sum is claimed by the undersigned respecting said Project.

The undersigned, on oath, states that all persons and firms who supplied Work Items to the undersigned in connection with said Project have been fully paid by the undersigned for such Work Items or that such payment will be fully effected immediately upon receipt of this payment.

In consideration of the payment herewith made, the undersigned does fully and finally release and hold harmless the Maine Turnpike Authority, and its Surety, if any, from any and all claims, liens or right to claim or lien, arising out of this Project under any applicable bond, law or statute.

It is understood that this Affidavit is submitted to assure the Owner and others that all liens and claims relating to the Work Items furnished by the undersigned are paid.

_____
(Contractor)

By: _____

Title: _____

State of MAINE

County of _____

I, _____, hereby certify on behalf of ___ _____
(Company Officer) *(Company Name)*

its _____, being first duly sworn and stated that the foregoing representations are
(Title)

are true and correct upon his own knowledge and that the foregoing is his free act and deed in said capacity and the free act and deed of the above-named _____.
(Company Name)

The above-named, _____, personally appeared before me this ____ day of _____ and swears that this is his free act and deed.

(SEAL)

_____
Notary Public

My Commission Expires: _____

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART I – SUPPLEMENTAL SPECIFICATIONS

(Rev. November 10, 2016)

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II – SPECIAL PROVISIONS

PART II - SPECIAL PROVISIONS

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MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II - SPECIAL PROVISIONS

All work shall be governed by the Maine Department of Transportation Standard Specifications, Revision of November 2014, except for that work which applies to sections of the Maine Department of Transportation Standard Specifications which are amended by the Maine Turnpike Supplemental Specifications and the following modifications, additions and deletions.

General Description of Work

The Exit 36 Improvements and Pavement Rehabilitation work consists of milling and paving the Exit 36 interchange ramps and left shoulders and I-195 eastbound and westbound lanes and left shoulders, construction of approximately 1200 linear feet of acceleration lane shoulder, slope repairs, drainage improvements, guardrail improvements, median grading, highway lighting and electrical service, and culvert removal with approximately 30 linear feet of stream restoration in the City of Saco, Maine. The culvert outlet ditching work consists of constructing approximately 170 linear feet of drainage ditch within a wetland area in the City of Saco, Maine. Pavement markings, maintenance of traffic, and all other work incidental thereto will be complete in accordance with the plans and specifications.

The Exit 25 Paving work consists of milling, paving, and striping the northbound toll plaza approaches from Route 35 to 250 ft north of the toll plaza. This work also includes milling, paving, and striping approximately 180 ft of the Kennebunk Maintenance Facility Entrance starting at Route 35 and approximately 190 ft of the Diesel Fuel Entrance.

The intersection modification work at Exit 32 consists of reconstructing median islands on the Route 111 approaches, changing the Thru/Left lane to a Left Only lane on the Exit 32 off ramp approach, changing the Thru/Left lane to a Thru Only lane on the Biddeford Connector approach, relocating two signal mast arms, and relocating the signal controller. The work includes rewiring the whole signal system and connecting the new system to the generator located at the Exit 32 toll facility.

The work at Exit 42 consists of relocating the mast arm in the northwest quadrant of the intersection to a new foundation.

Plans

The drawings included in these Contract Documents, and referred to as the Plans, show the general character of the work to be done under this Contract. They bear the general title “Maine Turnpike – Exit 36 Improvements and Pavement Rehabilitation MM 35.5 TO MM 36.2, Culvert Outlet Ditching MM 34.9, Exit 25 Paving MM 25.5, Exits 32 & 42 Intersection Modifications MM 31.6 & MM 42.5”. The right is reserved by the Resident to make such minor corrections or alterations in the Plans as they deem necessary without change in the unit prices on the Schedule of Prices of the Proposal.

101.2 Definition

Holidays

The following is added after Memorial Day in the Supplemental Specifications:

Juneteenth 2022 (June 19th)	12:01 p.m. preceding Friday to 6:00 a.m. the following Tuesday
Independence Day 2022 (Fourth of July)	6:00 a.m. preceding Friday to 6:00 a.m. the following Tuesday.

103.4 Notice of Award

The following sentence is added:

The Maine Turnpike Authority Board is scheduled to consider the Contract Award on March 31, 2022.

104.3.8 Wage Rates and Labor Laws

Section 104.3.8 Wage Rates and Labor Laws has been amended as follows:

The fair minimum hourly rates determined by the State of Maine Department of Labor for this Contract are as follows:

THIS DOCUMENT MUST BE CLEARLY POSTED AT ALL CONSTRUCTION SITES FUNDED IN PART WITH STATE FUNDS

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

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

2022 Fair Minimum Wage Rates
Highway & Earth York County

Occupational Title	Minimum Wage	Minimum Benefit	Total
Carpenter	$26.40	$6.45	$32.85
Cement Masons And Concrete Finisher	$20.00	$0.00	$20.00
Commercial Divers	$28.00	$2.50	$30.50
Construction And Maintenance Painters	$23.34	$2.53	$25.87
Construction Laborer	$23.00	$0.00	$23.00
Control And Valve Installers And Repairers - Except Mechanical Door	$26.00	$5.49	$31.49
Conveyor Operators And Tenders	$18.00	$2.71	$20.71
Crane And Tower Operators	$31.54	$6.68	$38.22
Crushing Grinding And Polishing Machine Operators	$21.00	$4.52	$25.52
Earth Drillers - Except Oil And Gas	$23.25	$5.53	$28.78
Electricians	$33.37	$15.69	$49.06
Excavating And Loading Machine And Dragline Operators	$28.10	$4.42	$32.52
Fence Erectors	$18.00	$0.72	$18.72
Flaggers	$17.00	$0.00	$17.00
Heating And Air Conditioning And Refrigeration Mechanics And Installers	$26.33	$4.06	$30.39
Heavy And Tractor - Trailer Truck Drivers	$24.00	$2.67	$26.67
Highway Maintenance Workers	$21.50	$1.87	$23.37
Industrial Machinery Mechanics	$26.00	$5.19	$31.19
Industrial Truck And Tractor Operators	$24.00	$5.61	$29.61
Light Truck Or Delivery Services Drivers	$20.00	$2.30	$22.30
Millwrights	$25.13	$3.51	$28.64
Mixing And Blending Machine Operators	$24.71	$8.59	$33.30
Mobile Heavy Equipment Mechanics - Except Engines	$25.13	$3.28	$28.41
Operating Engineers And Other Equipment Operators	$32.20	$2.00	$34.20
Paving Surfacing And Tamping Equipment Operators	$24.34	$4.28	$28.62
Pipelayers	$28.00	$7.20	$35.20
Plumbers Pipe Fitters And Steamfitters	$26.75	$2.69	$29.44
Reinforcing Iron And Rebar Workers	$48.58	$0.00	$48.58
Structural Iron And Steel Workers	$24.00	$1.36	$25.36

Welders are classified as the trade to which welding is incidental (e.g. welding structural steel is Structural Iron and Steel Worker)

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

For any other specific trade on this project not listed above, contact the Bureau of Labor Standards for further clarification.

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

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

A true copy

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

Expiration Date: 12-31-2022

THIS DOCUMENT MUST BE CLEARLY POSTED AT ALL CONSTRUCTION SITES FUNDED IN PART WITH STATE FUNDS

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

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

2022 Fair Minimum Wage Rates
Highway & Earth Cumberland County

Occupational Title	Minimum Wage	Minimum Benefit	Total
Carpenter	$26.40	$7.28	$33.68
Cement Masons And Concrete Finisher	$18.75	$1.15	$19.90
Commercial Divers	$28.00	$2.50	$30.50
Construction And Maintenance Painters	$23.34	$2.53	$25.87
Construction Laborer	$23.00	$0.37	$23.37
Control And Valve Installers And Repairers - Except Mechanical Door	$26.00	$5.49	$31.49
Conveyor Operators And Tenders	$18.00	$2.71	$20.71
Crane And Tower Operators	$31.54	$6.68	$38.22
Crushing Grinding And Polishing Machine Operators	$19.72	$3.95	$23.67
Earth Drillers - Except Oil And Gas	$23.25	$5.53	$28.78
Electricians	$33.37	$15.69	$49.06
Excavating And Loading Machine And Dragline Operators	$28.00	$4.42	$32.42
Fence Erectors	$18.00	$0.72	$18.72
Flaggers	$17.00	$0.00	$17.00
Heating And Air Conditioning And Refrigeration Mechanics And Installers	$26.33	$4.06	$30.39
Heavy And Tractor - Trailer Truck Drivers	$23.45	$2.64	$26.09
Highway Maintenance Workers	$21.81	$1.86	$23.67
Industrial Machinery Mechanics	$26.00	$5.19	$31.19
Industrial Truck And Tractor Operators	$24.00	$5.61	$29.61
Light Truck Or Delivery Services Drivers	$20.00	$2.30	$22.30
Millwrights	$25.13	$3.51	$28.64
Mixing And Blending Machine Operators	$24.71	$8.59	$33.30
Mobile Heavy Equipment Mechanics - Except Engines	$25.25	$3.51	$28.76
Operating Engineers And Other Equipment Operators	$32.20	$2.00	$34.20
Paving Surfacing And Tamping Equipment Operators	$24.60	$4.42	$29.02
Pipelayers	$28.00	$7.20	$35.20
Plumbers Pipe Fitters And Steamfitters	$26.25	$2.97	$29.22
Reinforcing Iron And Rebar Workers	$48.58	$0.00	$48.58
Structural Iron And Steel Workers	$23.38	$1.57	$24.95

Welders are classified as the trade to which welding is incidental (e.g. welding structural steel is Structural Iron and Steel Worker)

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

For any other specific trade on this project not listed above, contact the Bureau of Labor Standards for further clarification.

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

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

A true copy

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

Expiration Date: 12-31-2022

104.4.6 Utility Coordination

This Subsection is amended by the addition of the following:

These Special Provisions outline the arrangements which have been established by the Authority for coordination of the work to be accomplished by the utilities. The scope and schedule of utility relocation work is noted herein. The Contractor shall plan and conduct their work accordingly.

General

Utility working days are Monday through Friday, conditions permitting. 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 Authority if they are exceeded.

The Contractor shall plan and conduct their operations in accordance with the following utility schedule. The Contractor must comply with all OSHA regulations pertaining to work adjacent to utility wires. The Contractor shall plan and conduct their work accordingly.

The following utilities are located within the Project limits. The Contractor shall ascertain the location of the existing utilities and any other necessary information by direct inquiry at the office of the following utility owners:

AERIAL UTILITIES

CENTRAL MAINE POWER (CMP)

160 Canco Road
Portland, ME 04103
ATTN: Jeffrey Howes
Tel: (207) 242-0723
Email: Jeffrey.howes@cmpco.com

CMP provides power to the existing lighting panel at Sta. 29+55, 104’ RT through a service on Lund Road. The contractor shall coordinate with CMP for a power outage prior to switching to the new lighting panel.

CMP provides power to the signals at the Exit 32/ Route 111 intersection. CMP also has aerial lines that run through the project site at Exit 32 that are not anticipated to be impacted by the proposed work.

COMMUNICATION:

Consolidated Communications
5 Davis Farm Road
Portland, ME 04103
ATTN: Marty Pease
Tel: (207) 535-4208
Email: martin.pease@consolidated.com

Charter Communications
118 Johnson Road
Portland, ME 04102
ATTN: Dan Minchev
Tel: (207) 253-2334
Email: Dan.Minchev@charter.com

FirstLight
115 Depot Road
Buckfield, ME 04220
ATTN: Keith Shields
Tel: (207) 740-6949
Email: kshields@firstlight.net

The communication lines within the project site at Exit 32 are not anticipated to be impacted by the proposed work.

The Contractor shall notify Consolidated Communications and Charter Communications two (2) weeks in advance of any work taking place within 50 ft of their communication line.

SIGNALS:

Maine Turnpike Authority (MTA)
2360 Congress Street, Portland, Maine 04102
ATTN: Eric Barnes
Tel: (207) 482-8374
Email: ebarnes@maineturnpike.com

City of Biddeford
Department of Public Services
371 Hill Street
Biddeford, ME 04005
ATTN: Jeff Demers
Tel: 207-282-1579
Email: Jeff.Demers@Biddefordmaine.org

Maine Department of Transportation
Bureau of Traffic Engineering
16 State House Station
Augusta, ME 04333
ATTN: Ron Cote
Tel: 207-624-3602
Email: ron.cote@maine.gov

UNDERGROUND UTILITIES

ELECTRIC (LIGHTING)

Maine Turnpike Authority
2360 Congress Street
Portland, ME 04103
ATTN: Shawn Laverdiere
Tel: (207) 829-3767
Email: slaverdiere@maineturnpike.com

The Maine Turnpike Authority owns highway lighting and communications facilities within the project limits. Any proposed outages of these facilities will be coordinated and approved by the Maine Turnpike Authority

SEWER

Kennebunk Sewer District
44 Water Street
Kennebunk, ME 04043
ATTN: Christopher Gallant
Tel: (207) 985-4741
Email: cgallant@ksdistrict.org

WATER

Kennebunk, Kennebunkport, and Wells Water District
92 Main Street
Kennebunk, ME 04043
ATTN: Keith Archibald
Tel: (207) 467-0099
Email: karchibald@kkw.org

GAS

Until Corporation
376 Riverside Industrial Parkway
Portland, ME 04103
ATTN: Ben Weimont
Tel: (866) 900-4460
Email: weimontb@unitil.com

104.4.7 Cooperation With Other Contractors

This Subsection is amended by the addition of the following:

Adjacent contracts currently scheduled for the 2022 construction season include:

MTA 2022.07 – Interchange Improvements Saco (Exits 35 & 36)

MaineDOT WIN 18769.22 – Pavement Grooving and Polyurea Painting (I-195)

105.8.2 Permit Requirements

The Project is being constructed under the following Maine Department of Environmental Protection (DEP) Permits:

Natural Resources Protection Act Permit by Rule regulations, Section 11 – State Transportation Facilities and Section 19 – Activity Near SVP Habitat

A copy of Maine DEP permits issued for this contract and associated conditions and compliance standards are attached in Appendix A. The Contractor is responsible for executing all work under this contract in accordance with these Maine DEP permits.

The Project has been authorized under Section 404 of the Clean Water Act, through the US Army Corps of Engineers Maine Programmatic General Permit, Category 1. The Project is subject to the General Conditions of the Department of the Army Maine General Permit dated October 14, 2020 through October 14, 2025, as well as the project-specific authorization and conditions issued by the Army Corps Maine Project Office. A copy of the project-specific authorization, conditions, and Maine General Permit is provided in Appendix B. A signed copy of the Start Work Notification Form must be sent to the Army Corps Maine Project Office at least two weeks before work commences. The Contractor is responsible for executing all work under this contract in accordance with the U.S. Army Corps of Engineers permit.

The Project is subject to the Stormwater Memorandum of Agreement for Stormwater Management Between the Maine Department of Transportation, Maine Turnpike Authority, and Maine Department of Environmental Protection (Stormwater MOA). Under the Stormwater MOA, all MTA construction, operation, and maintenance activities are subject to Maine Stormwater Law Basic Standards through implementation of MaineDOT's Best Management Practices for Erosion and Sedimentation Control (MaineDOT BMP Manual), which are the Contractor's responsibility to implement. Under the Stormwater MOA, certain projects may also require the construction of permanent post-construction stormwater management BMPs, as specified in the plan set to this project where applicable.

The Project is subject to the requirements of the Maine Pollutant Discharge Elimination System (MPDES) General Permit for Stormwater Discharge from Construction Activity (Maine Construction General Permit), as promulgated by the US Environmental Protection Agency (US EPA) and Administrated by the Maine Department of Environmental Protection (DEP).

A project-specific Notice of Intent (NOI), accompanied by a preliminary Limit of Disturbance (LOD) plan, or an annual consolidated NOI for all MTA project construction activities, was submitted by the Authority to the DEP for coverage under the Maine Construction General Permit (MCGP). Compliance with the erosion and sedimentation control requirements outlined in this Contract is required by the Contractor.

The Contractor shall prepare a LOD plan illustrating the Contractor's proposed limit of earthwork disturbance. The LOD plan shall show all construction access locations, field office locations, material and temporary waste storage locations, as well as include the Contract limits of earthwork disturbance. All applicable erosion and sedimentation control devices needed shall be detailed on the Contractor's LOD plan and are not limited to those devices shown on the Contract LOD plan. This Plan shall be submitted for review and approval, to the Resident within 14 days of Contract award. Payment for creating, revising, and completing this plan shall be incidental to Item 659.10, Mobilization.

The LOD for this Contract has been estimated to be **2.99** acres.

At any time during the Contract, if the Limit of Disturbance needs to be adjusted to accommodate construction activities, the Contractor shall resubmit the LOD plan (including any additional erosion and sedimentation control measures needed) to the Resident for review and approval prior to any additional disturbance taking place:

- The Resident shall have a minimum of five (5) working days to approve the revised LOD plan.
- For contracts with a project-specific NOI, if the cumulative area of disturbance exceeds the estimated LOD noted above, the Resident shall first approve of the plan and then possibly resubmit the NOI to Maine DEP for approval. The approval may take a minimum of 14 working days from the date of submittal to Maine DEP.

Compliance with the erosion and sedimentation control requirements outlined in this Contract is required by the Contractor.

The Contractor shall comply with the conditions and compliance standards outlined in the Army Corps Maine General Permit, Maine DEP NRPA Permit by Rule, the Stormwater MOA, and the Maine Construction General Permit. The Contractor shall indemnify and hold harmless the Maine Turnpike Authority or its agents, representatives and employees against any and all claims, liabilities or fines arising from or based on the violation of the above noted permits.

This Project is also subject to the requirements of the Maine Pollutant Discharge and Elimination System (MPDES) General Permit for the Discharge of Stormwater from MTA's Municipal Separate Storm Sewer Systems (MS4), because it is located within an Urbanized Area (UA) as defined by the 2010 census by the U.S. Bureau of the Census. MS4 compliance requires all Contractors to be properly trained in Erosion and Sedimentation Control (ESC) measures (as per Special Provision Subsections 105.8.1 and 656.07) and implement measures to reduce pollutants in stormwater runoff from construction activities.

107.1 Contract Time and Contract Completion Date

This Subsection is amended by the addition of the following:

All work shall be completed on or before November 1, 2022.

All construction at Exit 36, except the ditch at Sta. 1699+45 and the removal of Goosefare Brook culvert and stream restoration, shall be substantially complete by July 29, 2022.

The construction of Exit 25 paving shall be substantially complete by June 17, 2022.

The construction of the ditch at Sta. 1699+45 and the removal of Goosefare Brook culvert and stream restoration shall be substantially complete by September 30, 2022.

The construction of the Exits 32 & 42 Intersection Modifications shall be substantially complete by October 14, 2022.

107.1.1 Substantial Completion

This Subsection is amended by the addition of the following:

Substantially complete at each location shall be defined by the Authority as the following:

- All paving, striping, guardrail, and drainage work is complete
- All lighting and/or signal work is complete and operational
- All disturbed slopes are seeded and mulched and temporary erosion control mix and/or blanket and riprap are installed where necessary
- No lane or shoulder closures, except for demobilization (removal of construction signs, drums, and general clean-up)

Supplemental Liquidated damages on a calendar day basis in accordance with Subsection 107.8 shall be assessed for each calendar day that substantial completion is not achieved.

107.4.6 Prosecution of Work

All borrow for the Exit 36 improvements shall come from suitable excavation from the northbound acceleration lane construction. The Contractor shall plan their work to use available material.

The contractor shall be allowed a maximum of 15 nights of single ramp closures to complete the Exit 36 Improvements. Two ramps may be closed simultaneously only if work is occurring on both ramps.

The milling activities for Exit 36 or each ramp shall not begin until the following activities have been completed for each location:

- All guardrail work
- All slope repairs
- Highway lighting installation

- Catch basin adjustments and installation, and culvert and underdrain installation
- Riprap installation

The following activities shall not begin until the date specified:

- Removal of Goosefare Brook culvert ends and stream restoration cannot commence prior to July 15, 2022 and must be completed by September 30, 2022, or as otherwise stipulated in the environmental permits.

The following activities must be completed by the date(s) specified:

- All clearing must be completed prior to June 1, 2022.

The Contractor shall submit to the Authority a construction schedule which shall document that the Contractor has the necessary labor and equipment to work immediately and continuously at the project site once a ramp is closed. The intent of this specification is to minimize the amount of time for ramp closures, while providing the Contractor sufficient time to complete the work in a diligent manner and reopen the ramps as prescribed above.

107.4.7 Limitations of Operations

The construction in each location shall proceed expeditiously. Once a ramp or bound of I-195 is milled it shall be paved (filled in) within two weeks.

The Contractor is allowed to work on multiple ramps or bounds of Exit 36 at the same time. The Contractor shall complete their milling operation in one location prior to beginning their milling operation in another location, unless otherwise approved by the Resident. The Contractor shall complete their paving operation in one location prior to beginning their paving operation in another location.

The Contractor shall begin the paving operation on Exit 36 in Lane 1 (passing lane and shoulder) followed by Lane 2, and then Lane 3 (at toll plaza approaches).

The Contractor shall limit the milling operations such that temporary pavement markings or pavement markers are applied daily prior to the roadway being open to traffic.

Lane or ramp closure(s) will not be allowed over a weekend or holidays unless otherwise approved by the Resident.

The Contractor shall keep a 12-foot-wide lane open for all nighttime operations unless otherwise approved by the Resident.

Temporary bituminous ramps will be required at the ends of each milled lane.

Traffic will be allowed to traverse the longitudinal joint between surface pavement and milled lanes where the pavement is lower in one lane than the adjacent lane.

The Contractor shall not run milling machines, pavers, rollers, or other heavy equipment over the toll slabs.

107.6 Completion Incentives and Disincentives

This Contract will include Completion Incentives of $1,000 per Calendar Day for each night of ramp closures less than the maximum number specified in subsection 107.4.6 Prosecution of Work. The Contract will include Completion Disincentives of $1,000 per Calendar Day for each night of ramp closures beyond the maximum number specified in subsection 107.4.6 Prosecution of Work. Disincentives are separate and distinct from the Liquidated Damages and Supplemental Liquidated Damages.

107.8 Supplemental Liquidated Damages

This Subsection is amended by the addition of the following:

Location	Supplemental Liquidated Damages Date	Supplemental Liquidated Damages Per Calendar Day
Exit 25	June 17, 2022	$1,000.00
Exit 36 (Except Ditching and Culvert Removal)	July 29, 2022	$1,000.00
Exit 36 Ditching and Culvert Removal	August 19, 2022	$1,000.00
Exits 32 & 42	October 14, 2022	$1,000.00

SPECIAL PROVISION

SECTION 202

REMOVING STRUCTURES AND OBSTRUCTIONS

(Removing Pavement Surface-Mainline)
(Removing Existing Pavement Surface)

202.01 Description

The following sentences are added:

This work shall also consist of removing the surface of the bituminous concrete pavement in all locations to the depth, width, grade, and cross section on the mainline as shown on the Plans or as directed by the Resident.

Removal of the pavement and membrane surface from the bridge decks shall be completed by scraping or other methods that will not damage the existing concrete deck surface. Milling of bridge deck pavement shall not be allowed.

Removal of approach pavement shall be completed using a milling machine meeting the requirements in the first two paragraphs of section 202.061.

Areas requiring shim pavement to reach final pavement grade shall not be milled.

This work shall also consist of construction of temporary ramps at all butt joints as shown in the MaineDOT Standard Details, latest revision – Pavement Overlay Butt Joint Detail (Roadways), Page 202(01) or as approved by the Resident. The length of the temporary ramp shall be at least 1/2 L.

The following subsection is added:

202.032 Removing Bridge Pavement Surface and Membrane

All bridge deck pavement, membrane and scrapings shall be disposed of by the Contractor off of the turnpike right-of-way in accordance with the Maine Department of Environmental Protection Solid Waste Management Requirements.

The following paragraph is added:

Extreme care shall be taken to avoid damaging the existing concrete or bituminous pavement intended to remain. All existing bituminous pavement and bridge deck concrete, intended to remain, damaged by the Contractor's removal operations shall be repaired by the Contractor as approved by the Resident at no additional cost to the Authority.

202.061 Removing Pavement Surface

This Subsection is deleted and replaced with the following:

The equipment for removing the bituminous surface, excluding bridge decks, shall be a power-operated milling machine or grinder capable of removing the bituminous concrete pavement to the required depth, transverse cross slope, and profile grade using an automated grade and slope control system. The controls shall automatically increase or decrease the pavement removal depth as required, and readily maintain desired cross slope to compensate for surface irregularities in the existing pavement course. The milling machine shall accurately establish profile grades by referencing from a fixed point such as a 30-foot minimum contact ski (floating beam), 24-foot non-contact ski (floating beam) with 3 or more sensors; or 3 non-contact sensors directly affixed to the fore, mid, and aft points of the milling machine. Systems designed to incorporate a contact sensor located at the mid-point of the milling machine in lieu of a non-contact sensor in conjunction with non-contact sensors at the fore and aft points will be permitted. Grade control sensors shall all be located on the same side. A single sensor, contact or otherwise, shall not be permitted. A copy of the automation operations manual shall be provided to the resident upon request. The equipment shall also have an effective means for removing excess material from the surface and preventing flying material in compliance with Subsections 105.2.5 Compliance with Health and Safety Laws and 105.2.6 Convenience of the Public, of the Specification.

The rotary drum on the machine shall be a minimum of 7 feet in width and utilize carbide tipped tools at a maximum 8mm tooth spacing pattern and a minimum triple wrap configuration. The difference in height from the top of any ridge to the bottom of the groove adjacent to that ridge shall not exceed ¼ inch. The carbide tipped tools on the rotary drum shall be continually maintained and shall be replaced as warranted to provide a uniform milled pavement texture. The forward operating speed shall be limited to a maximum speed of 45 feet per minute (fpm). The limited speed is not to be calculated on an average basis over time but shall be the actual limitation at any moment during the milling operation.

The track pads that the machine travel on shall all be of a uniform thickness equal to or exceeding the manufacturers recommendations. A copy of the manufacturer's recommendations shall be provided to the resident upon request.

The Contractor shall locate, identify and remove all objects in the pavement through the work area that would be detrimental to the milling machine.

The Contractor shall be responsible for the layout of the longitudinal centerline along the crown line. The contractor shall layout the site prior to any milling. Layout shall be achieved by physical measurements obtained every 50' along the length to be milled from a fixed reference point. The contractor shall transfer the measurements to the pavement surface every 50' and apply a paint mark at each location. The marks shall then be connected by a smoothed string line and subsequent paint marks applied along the string at no greater than 10' intervals. The Resident will inspect the layout line before milling activities may begin.

The finished milled surface will be inspected before being accepted, and any deviations in the profile exceeding 3/8 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 12-foot string line or straightedge placed transversely to the centerline will be corrected. In no case shall the cross slope in a single lane width be inverted resulting in a depression as measured transverse to the direction of travel. Any cross-slope inversions or depressions shall be corrected

by spot shimming the area with HMA as directed by the resident prior to installing any leveling or wearing course. Any areas requiring corrections will be subject to the same acceptable surface tolerances. These corrections shall be done with no additional expense to the Authority. Excess material that becomes bonded to the milled surface shall be removed to the Resident's satisfaction before the area is accepted.

If a milled safety wedge is required by the contract, it shall not be removed any sooner than 24 hours prior to paving. In no case will a vertical milled edge be permitted over a weekend or holiday. The contractor shall schedule the wedge removal accordingly.

The Contractor shall deliver the cubic yards of pavement grindings as specified below to the following Maintenance Facilities. The exact location of the stockpile shall be as directed by the Resident.

Name of Facility	Mile Marker	Cubic Yards
None		

All surplus pavement grindings, except for the amount specified above, shall be disposed of by the Contractor off the turnpike right-of-way. All grindings shall be disposed of in accordance with the Maine Department of Environmental Protection Solid Waste Management Requirements.

202.07 Method of Measurement

The removal of existing bituminous concrete pavement – mainline will be measured by the square yard of material removed to the required depth.

The following sentences are added:

Transporting and stockpiling of the pavement grindings at the maintenance facilities will not be measured separately for payment, but shall be incidental to the Removing Pavement Surface items.

Installation of temporary bituminous ramps will not be measured separately for payment, but shall be incidental to the Contract.

Removal of temporary bituminous ramps will not be measured separately for payment, but shall be incidental to the Contract.

Installation of and removal of longitudinal safety wedges will not be measured separately for payment, but shall be incidental to the Contract.

202.08 Basis of Payment

Removing Pavement Surface – Mainline will be paid for at unit price per square yard which price shall be full compensation for removing and disposing of the bituminous and gravel materials.

Payment will be made under:

Pay Item		Pay Unit
202.202	Removing Pavement Surface – Mainline	Square Yard

SPECIAL PROVISION

SECTION 202

REMOVING STRUCTURES AND OBSTRUCTIONS

(Removing Pavement Surface – Drainage Paths)

202.01 Description

The following paragraphs are added:

This work shall consist of grinding drainage paths in the existing inside and outside bituminous shoulders on the mainline and interchange ramps. The depth shall match the elevation of the adjacent milled travel lane. Locations and lengths of removal shall be as shown on the Plans or as directed by the Resident.

This work shall also consist of repaving the shoulder drainage paths with bituminous pavement to match the existing grades on each side of the drainage path to coincide with the paving operation of the adjacent travel lane as shown on the Plans or as directed by the Resident.

The following Subsection is added:

202.011 Materials

Grinding shall be done in accordance with Section 202.

Bituminous pavement shall conform to Section 401, Hot Mix Asphalt, 12.5 mm.

Bituminous tack coat shall conform to Section 409.

Joint sealant shall conform to Federal Specifications SS-S-1401C.

202.06 Removing Bituminous Concrete Pavement

This Subsection is deleted and replaced with the following:

The drainage paths shall be milled concurrently with the adjacent travel lane milling. The drainage paths shall be located such that they include all of any milled section of an impacted rumble strip.

The drainage paths shall be installed at the roadway low points of the sag vertical curves and at 500-foot intervals in both the outside and inside shoulders. Drainage paths shall not be installed within 500 feet of the crest of a vertical curve. The drainage paths shall extend from the edge of the milled travel lane (Lane 2) and daylight six feet into the outside shoulder and from the edge of the milled passing lane (Lane 1) and the edge of pavement (4'-0") without guardrail.

All grindings shall be disposed of in accordance with the Maine Department of Environmental Protection Solid Waste Management Requirements.

The Contractor may request that the Resident waive the requirement for the installation of drains at 500-foot intervals. The Resident will consider the weather forecast as well as the Contractor's proposed paving schedule when reviewing the request.

The tapered sides of the outside drainage paths shall be milled to form a vertical face prior to paving. The drainage paths shall be joint sealed, tack coated, and paved concurrently with the adjacent lane.

The Contractor shall not be required to replace the shoulder rumble strips removed for the drainage paths.

Vehicles will be permitted to traverse unfilled drainage paths.

202.07 Method of Measurement

The second paragraph is deleted and replaced with the following:

Removing Pavement Surface – Drainage Paths shall be measured by the square foot.

202.08 Basis of Payment

The following is added after the last paragraph:

Removing Pavement Surface – Drainage Paths shall be paid for at the Contract unit price per square foot which includes all grinding, tack coat, sealant, bituminous pavement, equipment, labor, and incidentals necessary to satisfactorily complete the work.

Payment will be made under:

Pay Item		Pay Unit
202.2026	Removing Pavement Surface – Drainage Paths	Square Foot

SPECIAL PROVISION

SECTION 203

EXCAVATION AND EMBANKMENT

203.01 Description

The following paragraph is added:

This work shall consist of cutting, removing and disposing of the full depth of existing bituminous concrete pavement at the approaches to the bridge structures within the limits of work as shown on the Plans or as approved by the Resident. The pavement shall be sawcut to the full depth of pavement at the limits of the excavation to provide a clean, vertical cut surface.

203.04 General

The following sentence is added to the end of the third paragraph.

There are no approved waste storage areas or waste areas within the Project limits unless shown on the Plans. Unsuitable materials shall be disposed of off-site in accordance with Subsection 203.06.

All excavations shall be accomplished in accordance with the applicable OSHA Standards. The Resident reserves the right to request the Contractor to prepare an excavation plan. This plan shall include, but not necessarily be limited to, the limit and depth of excavation, side slope, shoring, trench box and utility support.

203.10 Embankment Construction - General

The thirteenth and fourteenth paragraphs are deleted and replaced with the following:

All portions of the embankment shall be compacted in accordance with the designated embankment compaction requirements specified for the Project.

The existing slopes should be benched as shown on the drawings prior to placing additional fill. Embankment fill should be placed in lifts which extend laterally beyond the limits of the design side slopes such that the specified degree of compaction is achieved within the limits of the completed embankment. The slopes should then be trimmed back to design dimensions.

203.16 Winter Construction of Embankments

The word “core” is deleted from the first and second sentences in the first paragraph.

203.18 Method of Measurement

The following paragraphs are added:

There will be no additional payment for the required excavation plan, and costs shall be incidental to the Excavation items.

SPECIAL PROVISION

SECTION 203

EXCAVATION AND EMBANKMENT

(Special Fill – Streambed Material)

203.01 Description

This work shall consist of furnishing and placing stone and granular material within the relocated stream to form a nature-like streambed.

203.02 Materials

Special fill shall be a well graded mix of cobbles, gravel, sand and fines similar in size and shape to those found in natural channels and may be obtained as bank run or screening materials from earth borrow pits. Unwashed stone, and stone with naturally fractured faces will be allowed.

Where applicable, suitable material excavated on-site within the limits of the stream channel in accordance with Special Provision Section 203, Excavation and Embankment - Dredge Materials, may be used to meet the gradation requirements, or as filler material with the approval of the Resident.

Special fill shall conform to the following requirements:

a. Streambed gravel - shall be well graded bank run gravel. The gradation of the part that passes a 3-inch sieve shall meet the grading requirements of the following table:

Sieve Designation	**Percentage by Weight Passing Square Mesh Sieves**
½ inch	35 - 80
¼ inch	25 - 65
No. 40	5.0 - 30
No. 200	5.0 - 12

Streambed gravel shall not contain particles of rock that will not pass a 6-inch square mesh sieve.

b. 6-inch cobbles - shall be a well graded mix of stones with a minimum size of 3/4 inches and a maximum size of 6 inches average dimension. Fifty percent of the stones by volume shall have an average dimension greater than 3 inches. At least seventy five percent of the material shall be within the specified minimum and maximum sizes.

c. Filler material - shall consist of a well graded mix of gravel, sand and fines used to fill voids and seal the surface of the streambed, and other features (see also Special Provision 610 – Void-Filled Riprap). It shall have enough fines, as determined by visual inspection,

so that water pools on the surface. Filler material shall be free from vegetable matter, debris, peat and other unsuitable material, and shall not contain oversized stones larger than 6 inches. The material may be obtained from earth borrow pits, dredge, on-site excavation or other sources approved by the Resident.

Mix Proportions: Special Fill shall be mixed in the following proportions:

Streambed Gravel	6-inch Cobbles
1 part	1 part

Mix proportions and material gradations shall be within the above limits or as otherwise adjusted by the Resident to obtain a well graded streambed. Acceptance will be based on the test results, and visual inspection by the Resident. Special fill shall conform to the gradation requirements at the time it is placed to form the streambed.

At least 10 working days prior to the start of streambed construction the Contractor shall identify the source and proposed materials for inspection and shall furnish to the Resident a copy of gradation test results from a certified laboratory for the streambed gravel portion of the mix. The Department will obtain samples of the streambed gravel for Process Control prior to placement.

The grading of stone shall be determined by the Resident in accordance with the Standard Specifications, Section 610.032.d Inspection.

203.03 Construction Requirements

1. Construct a channel with an approximately trapezoidal streambed surface in accordance with Special Provision 610 – Void-Filled Riprap. The Contractor shall construct a test section for review by the Resident.

2. Place special fill in well mixed layers without pockets of either fine or coarse material. The material shall be placed by machine or by hand as necessary to achieve the specified shape and thickness. Larger stones may protrude above the average surface but shall be firmly embedded in the mix.

3. Special fill shall be thoroughly washed-in with water immediately after placement. If voids remain in the streambed after the initial washing-in, filler material shall be spread on the surface as required to fill remaining voids. Wash-in with additional water until water remains on the surface with minimal infiltration.

4. Mechanical methods of compaction may be used with the approval of the Resident. If the Contractor uses mechanical methods the void-filling and washing-in requirements shall still apply.

5. Prior to exposure to natural flow conditions the streambed shall be thoroughly wetted and compacted with voids filled and the surface sealed, checked and approved by the Resident. After washing-in, the minimum thickness of the special fill shall be as called for on the plans with an allowable surcharge of up 3 inches above the design grade.

203.04 Method of Measure

Special fill will be measured in place by the cubic yard.

203.05 Basis of Payment

The accepted quantity of special fill will be paid for at the contract price per cubic yard complete in place. Payment shall be full compensation for furnishing all materials, equipment, and labor and washing-in with water.

Payment will be made under:

Pay Item		Pay Unit
203.33	Special Fill – Streambed Material	Cubic Yard

SPECIAL PROVISION

SECTION 206

STRUCTURAL EXCAVATION

206.02 Construction Methods

The following paragraphs are added:

There are no approved waste storage areas or waste areas within the Project limits. Unsuitable materials shall be disposed of off-site in accordance with Subsection 203.06.

SPECIAL PROVISION

SECTION 401

HOT MIX ASPHALT PAVEMENT

Section 401 of the Maine Turnpike Authority 2016 Supplemental Specifications is modified as follows:

401.01 Description

The following paragraph is added:

A Quality Control Plan (QCP) is required.

401.02 Materials

Section 401.02 is deleted in its entirety and replaced with the following:

Aggregates for HMA Pavements Coarse Aggregate and fine aggregate for HMA pavements shall be graded such that when combined in the proper proportions, including filler if required, the resultant blend will meet the composition of mixture for the type of pavement specified. Materials shall meet the requirements specified in Section 700 – Materials:

Asphalt Cement	702.01
Aggregates for HMA Pavement	703.07
RAP for HMA Pavement	703.08
HMA Mixture Composition	703.09

Mainline Surface HMA Coarse aggregate: The material retained on the No. 4 sieve, shall consist of angular fragments obtained from crushed quarry stone and be free of dirt or other objectionable materials. Coarse aggregate shall have a Micro-Deval value of 15.0 percent or less as determined by AASHTO T 327. The crushed stone shall have a maximum of 1.5% material finer than the No. 200 mesh when tested in accordance with AASHTO T-11. Flat and elongated particles shall not exceed a maximum of 8% at a 5:1 ratio in accordance with ASTM D-4791. Coarse aggregate angularity shall be a minimum of 95/90 in accordance with AASHTO T-335.

Mainline Surface HMA Fine aggregate: The material passing the No. 4 sieve, shall be crushed manufactured sand free from dirt, clay balls, or other objectionable material. Natural sand may be incorporated into the mix at a rate no greater than 10 percent by weight of total aggregate. The unconfined void content of the fine aggregate blend shall be a 45 minimum value when tested in accordance with AASHTO T-304, method A. AASHTO T-176 sand equivalent value shall be a 45 minimum.

Asphalt Low Modulus Joint Sealer: Asphalt Low Modulus Joint Sealer shall be a modified asphalt and rubber compound designed for sealing and improving the strength and performance of the base asphalt cement and shall conform to ASTM D6690 Type IV and the following specifications:

Cone Penetration	90-150
Flow @ 60°C [140ºF]	3.0mm [1/8 in] max
Bond, non-immersed	Three 12.7mm [½ in] specimens pass 3 cycles @ 200% extension @ -29°C [-20ºF]
Resilience, %	60 min
Asphalt Compatibility, ASTM D5329	pass*

* There shall be no failure in adhesion, formation of any oily exudate at the interface between the sealant and asphaltic concrete or other deleterious effects on the asphaltic concrete or sealant when tested at 60°C [140ºF].

The contractor shall provide the Resident or authorized representative with a copy of the material manufacturer's recommendations pertaining to heating, application, and reheating prior to the beginning of operations or the changing of materials.

401.021 Recycled Asphalt Materials

Delete the second paragraph and replace with the following:

In the event that RAP source or properties change, the Contractor shall notify the Authority of the change and submit new documentation stating the new source or properties. A plant produced test batch meeting all requirements including Hamburg Wheel Tracker results shall be produced using the new RAP source or properties.

401.03 Composition of Mixtures

Section 401.03 is deleted in its entirety and replaced with the following:

HMA pavement mixtures for base, intermediate, shim and local road bridge projects shall be a currently approved MDOT design unless otherwise noted. A maximum of 20% RAP may be used. VMA shall meet the requirements listed in Table 1.

HMA pavement mixtures for Mainline surface paving projects shall conform to the following requirements:

The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. HMA shall be designed and tested according to AASHTO R35 and the volumetric criteria in Table 1. The Contractor shall size, uniformly grade, and combine the aggregate fractions in proportions that provide a mixture meeting the grading requirements of the Job Mix Formula (JMF). The Contractor may use a maximum of 15 percent reclaimed asphalt pavement (RAP) in any mainline surface course.

The Contractor shall submit a job mix formula (JMF) developed for each specified mixture at least 30 days prior to placement.

The JMF shall establish a single percentage of aggregate passing each sieve size within the limits shown in Subsection 703.09. The mixture shall be designed and produced, including all production tolerances, to comply with the allowable control points for the particular type of mixture as outlined in Subsection 703.09. The JMF shall state the original source, gradation, and percentage to be used of each portion of the aggregate and mineral filler if required. It shall also state the proposed PGAB content, the name and location of the refiner, the supplier, the source of PGAB submitted for approval, the type of PGAB modification if applicable, and the location of the terminal if applicable.

In addition, the Contractor shall provide the following information with the proposed JMF:

- Properly completed JMF indicating all mix properties (Gmm, VMA, VFB, etc.).
- Stockpile Gradation Summary.
- Test reports for individual aggregate consensus properties
- Design Aggregate Structure Consensus Property Summary.
- Design Aggregate Structure Trial Blend Gradation Plots (0.45 power chart).
- Trial Blend Test Results for at least three different aggregate blends.
- Selected design aggregate blend.
- Test results for the selected design aggregate blend at a minimum of three binder contents.
- Test results for final selected blend compacted to $N_{max.}$
- Specific Gravity for the PGAB to be used.
- Recommended mixing and compaction temperatures from the PGAB supplier.
- Data Sheets (SDS) For PGAB.
- Asphalt Content vs. Air Voids trial blend curve.
- Test report for Contractor's Verification sample.
- Summary of RAP test results (if used), including count, average and standard deviation of binder content and gradation.

At the time of JMF submittal, the Contractor shall identify and make available the stockpiles of all proposed aggregates at the plant site. There must be a minimum of 150 ton for coarse aggregate stockpiles, 75 ton for fine aggregate stockpiles before the JMF may be submitted. The Authority shall obtain samples for laboratory testing. The Contractor shall also make available to the Authority the PGAB proposed for use in the mix in enough quantity to test the properties of the asphalt and to produce samples for testing of the mixture. Before the start

of paving, the Contractor and the Authority's representative shall test a production sample in the Contractor's laboratory for evaluation. If the Authority finds the mixture acceptable, an approved JMF will be forwarded to the Contractor. The Authority will then notify the Contractor that paving may commence. The first day's production shall be monitored, and the approval may be withdrawn if the mixture exhibits undesirable characteristics such as checking, shoving or displacement. The Contractor shall be allowed to submit aim changes within 24 hours of receipt of the first Acceptance test result for an individual JMF. Adjustments will be allowed of up to 2% on the percent passing the 2.36 mm sieve through the 0.075 mm and 3% on the percent passing the 4.75 mm or larger sieves. Adjustments will be allowed on the %PGAB of up to 0.2 percent. Adjustments will be allowed on GMM of up to 0.010.

Approved mix designs from the previous calendar year may be carried over, however no aim changes will be granted for a carryover mix design and the initial design must not be older than the previous paving season.

The Contractor shall submit a new JMF for approval each time a change in material source or materials properties is proposed. The same approval process shall be followed. The cold feed percentage of any aggregate except natural sand may be adjusted up to 10 percentage points from the amount listed on the JMF, however no aggregate listed on the JMF shall be eliminated. Natural sand may be adjusted up to 5 percent from the amount listed on the JMF but shall not exceed 10% by weight of total aggregates. The cold feed percentage for RAP may be reduced up to five percentage points from the amount listed on the JMF and shall not exceed the percentage of RAP approved in the JMF or for the specific application.

TABLE 1
VOLUMETRIC DESIGN CRITERIA

Design ESAL's (Millions)	Required Density (Percent of G_{mm})			Voids in the Mineral Aggregate (VMA)(Minimum Percent) Nominal Maximum Aggregate Size (mm)				Voids Filled with Binder (VFB) (Minimum %)	Fines/Eff. Binder Ratio
	$N_{initial}$	N_{design}	N_{max}	19	12.5	9.5	4.75		
10 to <30	≤89.0	96.0	≤98.0	13.5	14.5	15.5	15.5	65-80	0.6-1.2

As part of the JMF submittal, there are Hamburg Wheel Tracker requirements, the Contractor shall provide the Authority the test results in accordance with AASHTO T324. The results shall be generated by a third-party independent testing laboratory as approved by the Authority. The test results for each individual specimen as well as the average shall meet the requirements of Table 1A

TABLE 1A
HAMBURG WHEEL TRACKER REQUIREMENTS

Specified PG Binder Grade	Test Temperature (ºC)	Maximum Rut Depth (mm)	Minimum Number of Passes	Minimum Allowable SIP*
64-28	45	12.5	20,000	15,000
64E-28	48	8.0	20,000	15,000
70E-34	50	6.3	20,000	15,000

401.031 Warm Mix Technology

Add the following to the end of the first paragraph:

Weather and seasonal limitations as outlined in section 401.06 may be reduced by a maximum 5ºF with the use of WMA except for HMA being placed over bridge deck membrane.

401.04 Temperature Requirements

Add the following line item after the third bullet:

- Any HMA placed over bridge deck membrane shall have a minimum temperature of 300° F measured directly behind the screed in the uncompacted mat.

Add the following paragraph:

No vehicular loads shall be permitted on newly completed pavement until adequate stability has been attained and the material has cooled sufficiently to prevent distortion or loss of fines. The newly paved area may be opened to traffic after the internal temperature of the pavement has cooled to 120° F. The Resident will test the internal temperature of the pavement and shall be the sole judge as to the opening to traffic. The period of time before opening to traffic may be extended at the discretion of the Resident. The lane closure may not be removed until the internal temperature has cooled to 120° F.

401.06 Weather and Seasonal Limitations

The first paragraph shall be deleted and replaced with:

The Contractor may place Hot Mix Asphalt Pavement for use other than a traveled way wearing course, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is 45°F or higher and the area to be paved is not frozen. The Contractor may place Hot Mix Asphalt Pavement as traveled way wearing course, provided the air temperature determined as above is 50°F or higher. For the purposes of this Section, the traveled way includes truck lanes, ramps, approach roads, shoulders, and auxiliary lanes. The atmospheric temperature for all courses on bridge decks shall be 50°F or higher.

401.08 Hauling Equipment Trucks for Hauling HMA

Add the following paragraphs:

The undercarriage of haul units actively hauling HMA to the site shall be relatively free of dust / mud agglomerations. Haul units found to be contaminating the paving surface shall be removed from the site and cleaned prior to returning.

The contractor shall supply enough haul units such that paving is continuous and without any delays or paver speed changes during the installation of mainline wearing course or any course placed on a bridge deck. A Quality Control Violation as outlined in Section 106.4.6 will

be issued for every shift which does not have enough haul units. The Quality Control Violation will start at the 2nd incident.

401.09 Pavers

Add the following to the end of the fourth paragraph:

The forward operating speed of the paver shall be limited based on the course being placed. A shim or leveling course shall have a maximum speed of 50 feet per minute (fpm). Any base, intermediate, or surface course shall have a maximum paver speed of 40 fpm. The limited speed is not to be calculated on an average basis over time but shall be the actual limitation at any moment during the paving operation.

401.091 Material Transfer Vehicle (MTV)

The first paragraph shall be deleted and replaced with:

When required by Special Provision Section 403, the paver shall be supplied mixture by a material transfer vehicle (Roadtec SB2500 or approved equal) capable of receiving and storing bituminous mixture from haul trucks, remixing, and delivering the mix to the paver hopper in a consistently uniform manner.

The fourth paragraph shall be deleted and replaced with:

The MTV shall be designed so that the mix receives additional mixing action.

401.11 Preparation of Existing Surface

Add the following paragraph:

The contractor will be permitted to be generally innovative in methods to dry existing wet or damp pavement. Any method which causes damage or burning of the existing pavement, or which causes debris to fly into traffic shall be discontinued.

401.111 Layout

The contractor shall layout the site prior to any pavement course or final striping. Layout shall be achieved by physical measurements obtained every 50’ along the length to be paved or striped from a fixed reference point. The contractor shall transfer the measurements to the pavement surface every 50’ and apply a paint mark at each location. The marks shall then be connected by a smoothed string line and subsequent paint marks applied along the string at no greater than 10’ intervals. The Resident will inspect the layout line before associated activities may begin.

401.165 Longitudinal Joint Density

The first paragraph shall be deleted and replaced with:

When noted in Special Provision Section 403, the Authority will measure the pavement density of longitudinal joints between adjoining mainline travel lanes in both the unconfined and confined condition as determined by the days paving operation.

The eighth paragraph shall be deleted and replaced with:

The minimum density of the completed pavement shall be 92.0 percent of the theoretical maximum density obtained. Two consecutive failing tests shall result in production shut down. Prior to resuming paving operations, the contractor quality control unit shall satisfy the Authority that the paving operation will produce joint densities in compliance with the Specifications.

The eleventh paragraph and associated table shall be deleted and replaced with:

Payment reduction will be applied to each sublot that has a density lower than 92.0% as outlined below.

PERCENT COMPACTION	PERCENT PAY
92.0 or greater	100
91.9 to 90.0	95
89.9 to 88.5	90
88.4 or less	80

401.17 Joints

Delete the following sentence from the third paragraph:

"The Authority may allow feathered or "lap" joints on lower base courses or when matching existing base type pavements."

The fourth paragraph shall be deleted and replaced with:

When required by Special Provision Section 403, Mainline Longitudinal joints shall be constructed as notched-wedge joint and constructed in a manner that will best ensure joint integrity.

401.18 Quality Control

Add the following paragraph v. to the QCP requirements

v. The contractor shall provide a detailed plan outlining how the number of haul units will be determined and supplied to the project to prevent the paver from stopping on mainline wearing course and bridge deck paving over membrane

The following shall be added to section c. Quality Control Technician(s) QCT:

The QCT shall be on site during paving operations performing quality control activities. QCT's shall not act as equipment operators, trainers or laborers.

401.191 Inspection/Testing

In paragraph nine delete and replace Item #8 with:

8. Secure High-Speed Internet Access

401.21 Method of Measurement

The second paragraph shall be deleted and replaced with:

A reduction in payment will occur when the voids, asphalt content, and density are other than the limits specified below for 100 percent payment. The payment reduction for voids and PGAB content and density will be based upon each sublot (500 tons) of production as specified in Subsections 401.162, 401.163, 401.164, and 401.165. The Contractor may request one retest for each failing sublot for core density only. The original core density and the recut core density shall be averaged together to determine payment for the sublot. No retest will be allowed for voids or asphalt content. The Contractor shall pay $250.00 for each additional core tested. Pavement restoration will not be measured separately for payment but shall be incidental to the respective pay item.

SPECIAL PROVISION

SECTION 401

HOT MIX ASPHALT PAVEMENTS

(HMA using Hydrated Lime)

The following sections of Section 400 have been revised with following additional requirements.

401.01 Description

The Contractor shall compose Hot Mix Asphalt (HMA) Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), hydrated lime, and mineral filler if required. Hydrated Lime shall be utilized in all mixtures so denoted in Special Provision 403 - Hot Mix Asphalt Pavement.

401.02 Materials

Materials shall meet the requirements specified.

Hydrated Lime	AASHTO 216

401.03 Composition of Mixtures

The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), hydrated lime and mineral filler if required. HMA shall be designed and tested according to AASHTO R35 and the volumetric criteria in Table 1. The Contractor shall size, uniformly grade, and combine the aggregate fractions in proportions that provide a mixture meeting the grading requirements of the Job Mix Formula (JMF).

Hydrated lime shall be used in all HMA at a rate of one percent (1%) by weight of the total dry aggregate including RAP aggregate, if used. The Contractor shall obtain a shipping ticket for each shipment of hydrated lime. The Contractor shall provide the Resident with a copy of each shipping ticket from the supplier, including the date, time and weight of hydrated lime shipped and used in HMA production. The Contractor shall submit a material data sheet for the hydrated lime to the Resident for approval.

The Contractor shall provide the following information with the proposed JMF:
Safety Data Sheets (SDS) for hydrated lime
Supplier and source for Hydrated Lime

401.13 Preparation of Aggregates

The Contractor shall add water to the aggregates as required to maintain a minimum total aggregate moisture content of 3 percent. The Contractor shall mix the lime uniformly with the aggregate before introducing the aggregate into the dryer or dryer drum. Hydrated lime introduction systems must be controlled by a proportioning device to the amount required on the JMF plus or minus 0.1% of the target.

The Contractor shall add lime to the aggregate by one of the following methods:

A. The Contractor shall add lime to the combined cold feed aggregate using an enclosed in-line cold feed mechanical pugmill mixer. The Contractor shall use a twin-shaft, continuous mixing pugmill with mixing paddles to thoroughly blend the lime with the aggregate. The Contractor shall adjust the retention time of the mixture in the pugmill so no unmixed lime is visible after the lime and aggregate exit the pugmill.

B. The Contractor shall add lime to the combined cold feed aggregate by introducing the lime between aggregate layers as the aggregate flows from the cold feed bins. The Contractor shall thoroughly mix the lime and aggregate on the conveyor belt. The Contractor shall provide a lime introduction system so that no unmixed lime is visible before the lime and combined aggregate enter the drum.

The cold storage for hydrated lime shall be a separate bulk storage bin with a vane feeder or other approved feeder system which can be readily calibrated. The system shall provide a means for convenient sampling of the hydrated lime additive and verifying the quantity of lime dispensed. If the hydrated lime is to be introduced directly into the plant then the additive equipment shall be synchronized with the cold feed controls to operate concurrently with the cold feed operation. The system will be configured to automatically adjust the hydrated lime feed to variations in the cold aggregate feed. The hydrated lime system shall have out-of-tolerance sensing ability by weight, and have a means to indicate the out–of–tolerance condition.

401.14 Mixing

Hydrated lime shall be added into the HMA aggregate mixture prior to the aggregate blend mixing with the PGAB. Aggregate feed rate, or pugmill mixing times shall be adjusted to ensure complete blending of Hydrated Lime and aggregate before the PGAB is added.

401.18 Quality Control

The Contractor shall provide a written supplement to the project specific QCP outlining the proposed methods of adding and mixing the hydrated lime for approval by the Authority. This written summary shall also provide information describing how the Contractor will perform quality control on the addition of hydrated lime, specifically the method of introduction and how the lime use will be measured to assure that the specified percentage is consistently added, and appropriately mixed. The supplemental QCP covering hydrated lime introduction shall be provided to the Authority at least one week prior to the prepave meeting.

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

403.01 Description

This work shall also consist of the construction, maintenance and removal of all temporary bituminous ramps at locations as shown on the Plans or as directed by the Resident.

403.02 General

The Contractor shall compose the Hot Mix Asphalt Pavement with aggregate, Performance Graded Asphalt Binder (PGAB), and mineral filler if required. The Performance Graded Asphalt Binder (PGAB) shall be polymer modified as detailed in this special provision and shall conform to the requirements of AASHTO M 332 (including Appendix 1). The PG64E-28 Binder shall contain a minimum of 2.25% Styrene-Butadiene-Styrene (SBS) polymer {BWT} in a homogeneous blend with a minimum average percent recovery of 75% as determined by AASHTO T350 @ 3.2 kPA (R3.2) on RTFO residue at 64ºC to assure significant polymer load and performance. The stability of the modified binder shall be verified in accordance with ATSM D7173 using the Dynamic Shear Rheometer (DSR). The DSR G*/sin(δ) results from the top and bottom sections of the ATSM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report.

When required PG70E-34 Binder shall be modified with Styrene-Butadiene-Styrene (SBS) polymer {BWT} in a homogeneous blend with a minimum average percent recovery of 75% as determined by AASHTO T350 @ 3.2 kPA (R3.2) on RTFO residue at 70ºC to assure significant polymer load and performance. The stability of the modified binder shall be verified in accordance with ATSM D7173 using the Dynamic Shear Rheometer (DSR). The DSR G*/sin(δ) results from the top and bottom sections of the ATSM D7173 test shall not differ by more than 10%. The results of ASTM D7173 shall be included on the Certified Test Report.

403.03 Construction

All areas which have been milled or overlaid shall have a minimum length temporary ramp constructed as determined by the Resident at the milled or overlaid limits prior to opening the roadway to traffic. Temporary ramps shall be constructed using the same material as being placed on that day or as directed by the Resident. All temporary ramps are to be constructed on a sand joint. The Contractor shall be responsible for all repairs and maintenance required for the temporary ramps.

The Contractor shall be responsible for the layout of the longitudinal centerline between the travel lanes.

The sand and loose debris adjacent to the median guardrail shall be removed and disposed of by the Contractor off of Turnpike property.

The forty-five degree pavement safety edge needed between lanes shall be incidental to the 202 pay items.

A minimum test strip of 100 tons placed at a nominal depth of 1 ½ inches, full lane width, shall be required. It shall be evaluated under testing requirements for mix volumetric and density. The exact location will be identified by the Authority. Prior to placement of the test strip, a leveling course (Item 403.211) shall be placed at the chosen location. A fog coat of Item 409.15, Bituminous Tack Coat, shall be applied to the level course prior to the placement of the HMA surface course, payment to be made under the 409.15 pay item. The test strip will be excluded from the remainder of the projects' QA analysis. The Contractor shall notify the Authority at least 48 hours in advance of placing the test strip. The test strip is intended to allow the Contractor to establish a method of compaction and adjust plant settings prior to mainline plant production.

403.04 Method of Measurement

The construction and removal of temporary ramps on sand joints, and maintaining the ramps will not be measured separately for payment, but shall be incidental to Items 403.

The removal of sand and loose debris will not be measured separately for payment, but shall be incidental to paving items.

Hot Mix Asphalt, 12.5 mm (Polymer Modified pavement with (up to) 15% RAP, placed as a wearing surface will be measured under Item 403.2081 Hot Mix Asphalt, 12.5 mm (Polymer Modified) - RAP.

403.05 Basis of Payment

Hot Mix Asphalt, 12.5 mm (Polymer Modified) pavement with (up to) 15% RAP, placed as a wearing surface will be paid under Item 403.2081 Hot Mix Asphalt, 12.5 mm (Polymer Modified) – RAP.

The following pay items are added:

Pay Item		Pay Unit
403.2081	Hot Mix Asphalt, 12.5 mm (Polymer Modified) – RAP	Ton
403.2084	Hot Mix Asphalt, 12.5 mm Nominal Maximum Size (sidewalks, drives, islands& incidentals)	Ton

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

Course	HMA Grading	Item Number	Total Thickness	No. of Layers	Complimentary Notes
I-195 and Ramp Mill and Overlay and Shoulder Reconstruction and Exit 25 Mill and Overlay					
Wearing	**12.5mm**	**403.2081**	**1.5”**	**1**	**A,D,E,G,H,I,J,K**
Base	**12.5mm**	**403.213**	**2”**	**1**	**C, I**

Note: MTV will not be required at the Kennebunk Maintenance Facility at Exit 25.

Exit 36 NB On Ramp Acceleration Lane					
Wearing	**12.5mm**	**403.2081**	**1.5”**	**1**	**A,D,E,G,H,I,J,K**
Intermediate	**12.5mm**	**403.213**	**1.5”**	**1**	**C, I**
Base	**19.0mm**	**403.207**	**2.5”**	**1**	**C, I**
Base	**19.0mm**	**403.207**	**2.25”**	**2**	**C, I**
Spot Shims/Delaminated Areas (As Directed by the Resident)					
Shim	**9.5 mm**	**403.211**	**variable**	**1**	**C, I**
Route 111					
Wearing	**12.5mm**	**403.208**	**1.5”**	**1**	**C, I**
Base	**12.5mm**	**403.213**	**1.5”**	**1**	**C, I**
Route 111 Islands					
Wearing	**12.5 mm**	**403.2084**	**2”**	**1**	**C, I**

COMPLEMENTARY NOTES

A. The required PGAB for this mixture shall be **64E-28.**
B. RAP may not be used.
C. The Maine DOT will conduct the job mix verification. The aggregate qualities shall meet the design traffic level of 3 to <10 million ESALS for mix placed under this contract. Minimum and Maximum PGAB content limits from 401.21 shall not apply.
D. The MTA will conduct the job mix verification. The aggregate qualities shall meet the design traffic level of 10 to <30 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**. (N design)

E. A material transfer vehicle (MTV) shall be used for the placement of Hot Mix Asphalt wearing surface on all roadways including acceleration and deceleration lanes and all ramps.
F. Joints shall be constructed as the “notched wedge” type in accordance with Subsection 401.17.
G. Joint density will be measured in accordance with Subsection 401.165.
H. PGAB shall conform to the provisions of 403.02 – Polymer Modified PGAB for HMA
I. The contractor shall furnish a quality control technician equipped with an approved densometer to ensure density requirements are met.
J. Hydrated Lime shall be incorporated into the mixture.
K. The antistrip additive Zycotherm manufactured by Zydex Industries shall be incorporated into the PGAB at a rate of 0.125%.

SPECIAL PROVISION

SECTION 409

BITUMINOUS TACK COAT

409.01 Description

This Subsection is deleted and replaced with the following:

This work consists of furnishing and applying one uniform application of UltraTack (NTSS-1HM) by Blacklidge or an approved equal as indicated in this specification and as per manufacturers' recommendation. The application rate shall be 0.06 gal/yd^2.

This work consists of furnishing and applying one uniform application of Emulsified Asphalt RS-1 or RS-1h conforming to the specifications of AASHTO M-140. The application rate shall be 0.04 gal/yd^2

409.05 Equipment

Add "or as determined by the Resident", after the words "gal/yd^2]" in the fourth line of the second paragraph of this Subsection.

409.06 Preparation of Surface

The following paragraph is added:

All existing pavement and shoulder areas on which bituminous concrete mixtures are to be placed shall receive a tack coat. The surface area where the tack coat is to be applied shall be dry and cleaned of all dirt, sand, and loose material. Cleaning shall be accomplished by use of revolving brooms or mechanical sweepers. Undesirable material not removed by the above means shall be cleaned by hand sweeping or scraping, or a combination of both. Small areas otherwise inaccessible may be swept with hand brooms. The tack coat shall be applied only when the existing surface is dry.

409.08 Method of Measurement

The following paragraphs are added:

Measurement will be based on delivery slips made out in duplicate by the Contractor and signed by the Resident, or their representative, at the point of delivery. One of these slips shall be retained by the Resident and one by the Contractor. Delivery slips shall be furnished by the Contractor and shall provide space for identifying the vehicle and driver, for stating the volume of material carried, the source of the material, the date, and the Resident or their representative's signature.

Material included in the delivery slips and not used or rejected shall be deducted from the amount being measured for payment. Each day's delivery slips shall be reconciled by the Contractor and the Resident within 24-hours.

Cleaning of the surface area where tack coat is to be applied shall be incidental to Item 409.152, Bituminous Tack Coat NTSS-1HM Trackless - Applied.

409.09 Basis of Payment

The following pay items are added:

Pay Item		Pay Unit
409.15	Bituminous Tack Coat RS-1 or RS1h – Applied	Gallon
409.152	Bituminous Tack Coat NTSS-1HM Trackless– Applied	Gallon

SPECIAL PROVISION

SECTION 419

SAWING AND SEALING JOINTS IN BITUMINOUS PAVEMENT

(Sawing Bituminous Pavement)

419.01 Description

This work consists of sawing bituminous concrete pavement as shown on the Plans, as specified herein or as approved by the Resident.

419.02 General

The bituminous concrete pavement to be sawed shall be accurately marked before cutting. The marking shall be in accordance with the locations as shown on the Plans or as approved by the Resident. Cutting shall be with an approved power-driven saw with an abrasive blade.

Unless otherwise noted or directed, the sawcut shall be vertical, a minimum of 3/8 inch wide, and extend to the depth as shown on the Plans.

Residue or debris from the sawing operation shall be removed immediately and legally disposed of by the Contractor.

419.03 Method of Measurement

Sawing Bituminous Pavement will be measured by the linear foot of pavement actually cut and accepted. No additional payment will be made for variations in the pavement thickness.

419.04 Basis of Payment

Sawing Bituminous Pavement will be paid for at the Contract unit price per linear foot which shall be full compensation for all materials, tools, equipment labor, and all incidentals necessary for the completion of the work to the satisfaction of the Resident. The disposal of sawcut residue shall be incidental to this item.

Payment will be made under:

Pay Item		Pay Unit
419.30	Sawing Bituminous Pavement	Linear Foot

SPECIAL PROVISION

SECTION 424

ASPHALT RUBBER MASTIC CRACK SEALER

424.01 Description

This work shall consist of the furnishing and placement of a mastic material in the longitudinal, transverse and random cracks of the milled bituminous concrete pavement in accordance with these Special Provisions.

Placement shall consist of:

1. Crack cleaning and drying
2. Material preparation and application
3. Material finishing and shaping.

424.02 Materials

GAP 201 Mastic shall be supplied by Maxwell Products or an approved equal designed especially for improving the strength and performance of the base asphalt cement with sealant and engineered aggregates.

424.03 Weather

Mastic shall not be applied on a wet surface or when the atmospheric temperature is below 45°F as determined by an approved thermometer (placed in the shade at the crack sealing location), or when weather conditions are otherwise unfavorable for proper construction procedures.

424.04 Equipment

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

(a) Air Compressor: Air compressors shall be portable and capable of furnishing not less than 4 yd^3 of air per minute at not less than 90 psi pressure at the nozzle. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water.

(b) Sweeper: Manually operated, gas powered air-broom or self-propelled sweeper designed especially for use in cleaning pavements shall he used to remove debris, dirt, and dust from the cracks.

(c) Hot Air Lance: Should operate with propane and compressed air in combination at 2000°F - 3000°F, exit air heated at 310 m/s [1000 ft/s]. The lance should draw propane from no smaller than a 100-pound tank using separate hoses for propane and air draw. The hoses shall be

wrapped together with reflectorized wrap to keep them together and to protect workers in low light situations.

(d) Hand Tools: Shall consist of a square shaped box screed, brooms, shovels, metal bars with chisel shaped ends, and any other tools which may be satisfactorily used to accomplish this work. The joints shall be raked open.

(e) Melting Kettle: The unit used to melt the joint sealing compound shall be a double boiler. indirect fired type. The space between inner and outer shells shall be filled with a suitable heat transfer oil or substitute having a flash point of not less than 320°C [608°F]. The kettle shall be equipped with a satisfactory means of agitating and mixing the mastic. This may be accomplished by continuous stirring with mechanically operated paddles and/or a continuous circulating gear pump attached to the heating unit. The kettle must be equipped with thermostatic control calibrated between 200°F and 550°F.

424.05 Preparations of Cracks

All cracks ¾ of an inch and shall be blown free and raked off of loose material, dirt, vegetation, and other debris by high pressure air. Material removed from the crack shall be removed from the pavement surface by means of a power sweeper or appropriate hand tools as required. Cracks showing evidence of vegetation after being blown out shall be additionally cleaned by appropriate hand tools and additionally blown out. All cracks must be blown and heated via the hot air lance 10 minutes prior to the crack being sealed. Distance between the hot air lance and the crack sealing unit should be no more than 50 ft to eliminate reinvasion of water. debris, and other incompressibles. All debris, vegetation, and water shall be removed to enhance adhesion of the crack sealing material. This work shall not be done in inclement weather.

424.06 Preparation and Placement of mastic

The mastic material shall be heated and applied at the temperature specified by the manufacturer and approved by the Resident or authorized representative. Any material that has been heated above the manufacturer's specification longer than thirty minutes shall not be used. Material that is reheated or held at temperature for an extended period of time may be used as allowed by the manufacturer's specification and approval of the Resident or authorized representative. The Contractor shall provide the Resident or authorized representative with a suitable device for verifying the mastic temperature in the kettle and at the application site.

Any over application or spills are to be removed to the satisfaction of the Resident or authorized representative. Any sealed areas with damaged or contaminated sealer or visible voids are to be removed, prepared and resealed.

Mastic shall be delivered to the crack while the cracks are still hot from the hot air lance preparation through a pressure hose line and applicator shoe. The applicator shall be followed by a V-shaped squeegee to minimize any overband. A heated steel hotplate may be used on the surface of the repair area after the mastic has been applied. Any loose material on the surface or in the crack, which may contaminate the crack sealer or impede bonding of the sealant to the pavement, is to be removed by hand tools prior to crack filling. No crack filling material shall be applied in a crack that is wet or where frost, snow, or ice is present.

424.07 Quality of Work

A Maxwell Products representative shall be present to verify the proper application, installation, material and pavement preparation on the first days' production. Excess of spilled mastic shall be removed from the pavement by approved methods and discarded. Any quality of work determined to be below normal acceptable standards will not be accepted and will be corrected and/or replaced as directed by the Resident or authorized representative at no additional expense to the Authority.

424.08 Method of Measurement

Asphalt Rubber Mastic Crack Sealer - Applied will be measured by the pound of mastic used. The manufacturer's weights of the mastic will be accepted as the basis for measurement.

424.09 Basis of Payment.

Asphalt Rubber Mastic Crack Sealer – Applied will be paid for at the contract unit price per pound complete in place. This price shall be full compensation for furnishing and placing crack sealer, including cleaning and drying cracks; and furnishing all labor, materials, tools, equipment and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
424.323	Asphalt Rubber Mastic Crack Sealer - Applied	Pound

SPECIAL PROVISION

SECTION 470

BERM DROPOFF CORRECTION

(Berm Dropoff Correction – Grindings)
(Berm Correction)

470.01 Description

This work shall consist of furnishing and placing bituminous grindings to eliminate the berm drop-off along the inside and outside shoulder edges at all locations, including guardrail sections at locations shown on the plans or as directed by the Resident.

The work shall also consist of removing materials at the inside and outside shoulder edges at all locations, including guardrail sections at locations shown on the plans or as directed by the Resident.

470.02 Bituminous Materials

The recycled bituminous pavement shall be reprocessed (crushed) to meet the following gradations:

Sieve Designation	Percentage by Weight Passing Square Mesh Sieve
¾”	100
½”	95-100
No. 4	50-80
No. 50	18-28
No. 200	3-10

470.03 Method of Construction

Work under this item shall be in accordance with the details as shown on the Plans or as directed by the Resident.

At a minimum, a walk behind plate compactor shall be used for compaction. Other methods may be used upon approval by the Resident.

470.04 Method of Measurement

Berm Dropoff Correction – Grindings will be measured by the ton of Pavement grindings delivered and installed.

Material included in the delivery slips and not used or rejected shall be deducted from the amount being measured for payment.

Berm Correction will be measured by the linear foot for material removed.

470.05 Basis of Payment

The accepted quantity of "Berm Dropoff Correction – Grindings" will be paid for at the contract unit price per ton, which price shall include all materials, crushing to gradation range, weighing, transportation, placement, labor, equipment, and all incidentals necessary to accomplish the work.

The accepted quantity of "Berm Correction" will be paid for at the contract unit price per linear foot, which price shall include removing all materials, grading, transportation, labor, equipment, and all incidentals necessary to accomplish the work.

Payment will be made under:

Pay Item		Pay Unit
470.08	Berm Dropoff Correction – Grindings	Ton
470.081	Berm Correction	LF

SPECIAL PROVISION

SECTION 511

COFFERDAMS

(Cofferdam)

511.1 Description

The first paragraph is deleted and replaced with the following:

This work shall consist of the complete design, construction, maintenance and removal of cofferdams and other related work, including dewatering, bypass pumping, and inspection, required to allow for the removal of the Goosefare Brook culvert ends east of the Exit 36 northbound off ramp and restoration of the stream.

The contractor shall prepare a cofferdam and in-stream work plan for the Authority to review and approval. The plan shall include proposed cofferdam system, how downstream flows will be maintained, proposed system for 'dirty' water dewatering between the two cofferdams, contingency plans for cofferdam failure, and spill control and countermeasure plan for activities near the stream (pump and equipment refueling, monitoring equipment operation, fuel/oil storage). This plan must be approved in writing by the Authority prior to starting any cofferdam related work.

511.06 Basis of Payment

The third paragraph is deleted and replaced with the following:

All costs for sedimentation control practices, including, but not limited to, constructing, maintaining, and removing sedimentation control structures, and pumping or transporting water and other materials for sedimentation control and to maintain stream flow will not be paid for directly, but will be considered incidental to the cofferdam Pay Item(s).

The fifth paragraph is deleted and replaced with the following:

All costs associated with preparation of the Cofferdam and In-stream Work Plan, Working Drawings, design calculations, written procedure for sediment shall be considered incidental to the cofferdam Pay Item(s).

The following is added to this section:

Payment will be made under:

Pay Item		Pay Unit
511.071	Cofferdam	Lump Sum

SPECIAL PROVISION

SECTION 511

COFFERDAMS

(Cofferdam)

511.03 Cofferdam Construction

The first paragraph is deleted and replaced with the following:

A. Working Drawings. The Contractor shall submit Working Drawings, showing the materials to be used and the proposed method of construction of cofferdams to the Department. All cofferdam design computations, plans, and working drawings shall be designed and sealed by a Professional Engineer, who must be licensed in accordance with the laws of the State of Maine. Construction shall not start on cofferdams until such Working Drawings have been submitted, reviewed and accepted by the Resident. Any review of or comment on, or any lack of review of or comment on, these Working Drawings by the Authority shall not result in any liability upon the Authority and it shall not relieve the Contractor of the responsibility for the satisfactory functioning of the cofferdam.

   The temporary earth retaining structures shall be designed to support all appropriate combinations of earth, static water, stream pressure, ice loads and surcharge loads (from traffic, construction equipment, material stockpiles, and other sources) imposed on the system during all phases of construction. The Contractor's design shall consider the means and methods and construction sequencing proposed by the Contractor The height of the cofferdam and the depth of the seal concrete shall be determined by the Contractor’s Engineer. The working drawings shall indicate the water elevation above which the cofferdam should be flooded to avoid overloading.

   Design computation shall be in accordance with the requirement of either the AASHTO Standard Specifications for Highway Bridges, 17th edition, or the AASHTO LRFD Bridge Design Specifications, Latest Edition. Additionally, the Contractor’s Engineer shall design the cofferdam to conform to all Federal, State, County and Local Regulations and Permits.

SPECIAL PROVISION

SECTION 515

PROTECTIVE COATING FOR CONCRETE SURFACES

(Pigmented Concrete Protective Coating)

Section 515, Protective Coating for Concrete Surfaces, is deleted in its entirety and replaced with the following:

515.01 Description

The work shall include the surface preparation and application of a pigmented concrete protective coating system, consisting of a pigmented penetrating sealer, to protect new and existing concrete and masonry structures. The coating system shall be applied in accordance with the manufacturer's published recommendations.

Where pigmented protective coatings are already present on concrete surfaces specified to receive new protective coatings, the work shall also include removing areas of existing protective coating that are blistered, flaking, peeling, or otherwise loosely adhered to the concrete substrate prior to application of the new coating. The removal of loosely adhered pigmented protective coatings shall be completed by high-pressure washing.

515.02 Materials

The pigmented penetrating sealer system shall be a one-coat system consisting of ChemMasters TextureDOT Smooth, as manufactured by ChemMasters, Inc., or an approved equal, consisting of the following:

- The coating shall be an acrylic silane polymer blend or an approved equal. This primer shall provide the main protection against the ingress of water borne chlorides and sulfates.

The products shall comply with regulations limiting the Volatile Organic Compound (VOC) content of architectural and industrial maintenance coatings.

The Contractor shall submit the product data sheets, material safety data sheets and recommended instructions for application of the ChemMasters Texture DOT Smooth coating.

The pigmented penetrating sealer color shall be Concrete Gray, Federal Number 16492.

Materials shall be delivered to the site in original packages or containers bearing the manufacturer's labels and identification.

515.021 Substitute Materials

The Contractor shall submit a written request for approval of proposed substitute material naming the proposed manufacturer and product. This request shall be accompanied by:

1. Test data from an independent testing laboratory stating that the proposed substitute meets or exceeds the specified requirements as listed and has been tested in accordance with the specified test standards.

2. Documentation that the proposed material has a proven record of performance when used in the intended application as confirmed by actual field tests and successful installations in place on at least five similar projects.

3. Certification that if two or more types of products are intended to be used as part of a system, they will be supplied by the same manufacturer to ensure compatibility of materials, and to maintain single source manufacturer responsibility.

The Resident reserves the right to require additional testing to evaluate any proposed substitute product at no additional cost to the Authority. The Resident's decision as to the acceptability or non-acceptability of the proposed product shall be final.

515.03 Surface Preparation

The surface shall be prepared in accordance with the instructions of the approved manufacturer. Surface shall be fully cured, dry, and free from contamination such as coatings, oil, grease, loose particles, decaying matter, moss, algae growth, and curing compounds. The Contractor shall lightly sandblast the surface to achieve an adequate surface roughness for coating adhesion, in accordance with manufacturer’s recommendations. After sandblasting, all surfaces shall be rinsed by pressure washing, and allowed to air dry for a minimum of 48 hours. Once the surface preparation has been completed to the satisfaction of the Resident, the Contractor may apply the protective coating.

All caulking, patching, and joint sealant shall be installed and cured prior to application of the protective coating.

Existing form tie hole plugs which are loose or deteriorated shall be completely removed. The holes shall be reamed to sound concrete. All open form tie holes, new and existing shall be filled with an approved non-shrinking mortar, and after setting, rubbed level to the adjacent surface. Filled holes shall be cured for at least two (2) days prior to the application of the protective coating.

Grass and vegetation adjacent to surfaces to be coated shall be removed or trimmed closely to permit proper preparation and application of the protective coating.

Where protective coatings are specified to be applied to concrete surfaces that have been previously covered with pigmented coating, the Contractor shall remove any protective coating that, in the judgement of the Resident, is blistered, flaking, peeling, or otherwise loosely adhered to the concrete substrate. Loosely adhered coating shall be generally defined as any coating that can be removed by high pressure washing as described below. The goal of the removal work is to remove areas of flaking, missing or otherwise compromised coating systems; protective coatings that are tightly adhered to the concrete substrate need not be removed.

The removal of existing protective coatings shall be completed using high pressure washing. The Contractor shall use a 5,000 psi pressure washer with a rotating head. After high-pressure washing, the Resident shall verify all loosely adhered coatings have been removed from the specified areas. The Contractor will be required to complete additional pressure washing to remove any remaining loosely adhered coatings identified by the Resident.

The Contractor may use, when required, appropriate cleaning materials recommended by the sealer manufacturer in conjunction with high pressure washing. Following removal of existing coating systems, all surfaces of the substructure unit to be coated shall be lightly sandblasted to achieve a surface roughness adequate for coating adhesion, then shall cleaned and rinsed by pressure washing.

The Contractor will be responsible for controlling and filtering runoff resulting from the pressure washing operations in accordance with Supplemental Specification 656, and all local, state and federal requirements.

515.04 Application

The materials shall be mixed and applied in strict accordance with the instructions of the approved manufacturer. Apply the coating at the recommended application rate. If the surface is very absorbent, the coating should be applied until surface is saturated per the manufacturer's written instructions. All areas not to receive coating shall be marked with straight, even lines as the limit lines.

The Contractor shall, in the presence of the Resident, apply the materials on a sample area which is representative of a jobsite application. When color and application methods are approved, the sample area shall serve as a standard of acceptance for all further work.

The coating shall not be applied in direct sunlight when the air or surface temperature is greater than 90ºF, or when air or surface temperature is below 45ºF.

Coating material shall be applied per the manufacturer's recommended application rate and in strict accordance with the manufacturer's written instructions. The coating shall provide consistent color without light spots or shadows. The Resident reserves the right to have the Contractor recoat coating if the dried coat lacks consistent color or shows light spots or shadows.

For surfaces that have previously received pigmented coating, the coating shall be applied to the complete limits of pigmented coating application as described on the Contract Plans, not just the area of old coating removal.

Regardless of the application method used (sprayer, roller or brush) the Contractor shall be responsible for achieving 100% coverage of the concrete including the interior surfaces of concrete voids, recesses, or other depressions on the concrete surface.

Protect plants, grass, sealant, asphalt, traffic, etc. during application from spray.

515.05 Method of Measurement

Pigmented Concrete Protective Coating will be measured for payment by the square yard, satisfactorily applied and accepted.

The removal of existing pigmented protective coatings will not be measured for payment separately, but shall be incidental to the Pigmented Protective Coating for Concrete Surfaces pay item.

515.06 Basis of Payment

Pigmented Concrete Protective Coating will be paid at the Contract unit price per square yard which price shall be full compensation for all labor, materials, equipment and incidentals required for furnishing and applying the pigmented concrete protective coating as shown on the Plans, in accordance with these Specifications or as approved by the Resident.

Surface preparation, including high-pressure washing to remove existing pigmented coatings, vegetation removal, and protection of surfaces not designated for treatment will not be paid for separately, but shall be incidental to the Pigmented Concrete Protective Coating item.

Payment will be made under:

Pay Item		Pay Unit
515.201	Pigmented Protective Coating for Concrete Surfaces	Square Yard

SPECIAL PROVISION

SECTION 526

CONCRETE BARRIER

(Temporary Barrier Markers)

526.1 Description

The following paragraphs are added:

This work shall consist of furnishing, installing and maintaining temporary barrier markers on all temporary barrier supplied by the Contractor and the Authority.

526.2 Materials

The following paragraphs are added:

Temporary barrier markers shall be "Big Dog" barrier markers manufactured by Custom Products Corporation, or approved equal. Markers shall be bi-directional with a minimum effective reflective area of 96 square inches (48 square inches each side) as approved by the Resident. The reflectors shall meet MUTCD reflectivity requirements and shall be orange in color.

526.3 Construction Requirements

The following paragraphs are added:

Temporary barrier markers shall be mounted as follows:

1. One on every fourth barrier in tangents and one on every two barriers in tapers, including all barrier furnished by the Contractor.

2. Delineators shall be physically adhered so as to withstand the force of throw from a snow plow.

3. If more than 25% of delineators in any 50 foot section of barrier fall off for any reason, the Contractor will be responsible for reinstalling all the delineators in that run at that their own cost.

4. Contractor is required to submit the installation method for review and approval to the Resident.

526.4 Method of Measurement

The following paragraphs are added:

Temporary barrier markers shall not be measured for payment separately but shall be incidental to the temporary barrier item.

526.5 Basis of Payment

The following paragraphs are added:

Temporary barrier markers shall not be paid for separately but shall be incidental to the temporary barrier item.

SPECIAL PROVISION

SECTION 526

CONCRETE BARRIER

(Temporary Concrete Barrier Type I)

526.01 Description

The following paragraphs are added:

The work also includes supplying connecting pins and furnishing and mounting retro-reflective delineators, per Subsection 526.02 and 526.03.

526.02 Materials

The following paragraphs are added:

f. Delineators shall be bi-directional with a minimum effective reflective area of eight square inches as approved by the Resident. The reflectors shall be methyl methacrylate and the housing of acrylonitrile butadiene styrene. Color shall be in accordance with the MUTCD.

g. Temporary traffic barrier shall be one of the barriers included under FHWA's Roadside Hardware Policy and Guidance for crashworthy longitudinal barriers, at the Contractor's discretion, unless otherwise specified. The type of temporary traffic barrier shall be provided to the Resident Engineer prior to use. All temporary traffic barrier and corresponding connections shall meet, unless otherwise specified in the Plans, Test Level 3 (TL-3) criteria as defined in NCHRP Report 350 or the AASHTO Manual for Assessing Safety Hardware (MASH) based on date of manufacture; all temporary concrete barrier manufactured after 12/31/19 shall meet MASH requirements. The appropriate resource shall be determined as described in the MASH publication. The Contractor shall supply the FHWA approval letter, manufacturer approved shop drawings and connection and anchorage details (if applicable), date of manufacture, and catalogue cuts for each barrier type to the resident engineer for approval. The manufacturer's shop drawings shall specify the maximum deflection distance the product is approved for. The Contractor's shop drawing submittal shall specify the available distance between the back or non-roadway side of the barrier to the closet fixed object or edge of open excavation being protected for each location of differing available deflection distance.

526.03 Construction Requirements

The following paragraphs are added:

Concrete barrier placed at roadway low points shall be shimmed on 1" by 2" by 2' long wood planks to allow drainage to pass under the barrier. In addition, the Resident may direct the Contractor to shim the concrete barrier at other locations to provide for proper roadway drainage.

All labor, material, and equipment necessary to shim the barrier will not be measured separately for payment but shall be incidental to the Concrete Barrier.

The removal of concrete barrier from adjacent to the travel lane may be conducted without a lane closure if it is accomplished in accordance with the following requirements:

- Barrier is removed from the trailing end and the workmen and equipment involved in the operation are always behind the barrier. No workmen or equipment shall enter the travel lane.
- Barrier shall be dragged away from the travel lane to at least a 30-degree angle by the use of a cable.
- Barrier shall be lifted no more than six inches while within 10 feet of the travel lane.

Retro-Reflective Delineators shall be mounted as follows:

- One on top of each barrier.
- One on the traffic side of every barrier used in a taper.
- One on the traffic side of every other barrier at regularly spaced intervals and locations.
- Delineators shall be installed on both sides of the barrier if barrier is used to separate opposing traffic.
- Delineators shall be physically adhered to withstand the force of throw from a snowplow.
- If more than 25% of delineators in any 50-foot section of barrier fall off for any reason, the Contractor will be responsible for reinstalling all the delineators in that run at that their own cost.
- Contractor is required to submit the installation method for review and approval to the Resident.

526.04 Method of Measurement

The following paragraphs are added:

Payment for furnishing, installing and maintaining retro-reflective delineators will not be measured for payment separately but shall be incidental to the Temporary Concrete Barrier Pay Item.

Payment will be made under:

Pay Item		Pay Unit
526.301	Temporary Concrete Barrier, Type I	Linear Foot

SPECIAL PROVISION

SECTION 527

ENERGY ABSORBING UNIT

(Work Zone Crash Cushion)
(Resetting Existing Work Zone Crash Cushions)

527.01 Description

The first paragraph is deleted in its entirety and replaced with the following:

The Contractor shall furnish and install, or reset work zone crash cushions where shown on the Plans, as specified herein, in Special Provision 652, or as approved by the Resident. Work zone crash cushions are required at each exposed end of temporary concrete barrier or guardrail.

The exposed end of the concrete barrier within 30 feet of the mainline travel lane shall be protected at all times. Barrier shall not be reset until after the work zone crash cushion(s) has been set to protect the exposed end of the barrier.

527.02 Materials

The following paragraph is added:

Work zone crash cushions fabricated prior to December 31, 2019 in serviceable condition shall meet the requirements of NCHRP 350 TL-3 crash test requirements and work zone crash cushions fabricated after December 31, 2019 shall meet the MASH TL-3 crash test requirements for use on the turnpike and local roadways with posted speeds of 45 MPH or greater. Work zone crash cushions fabricated prior to December 31, 2019 shall meet in serviceable condition shall meet the requirements of NCHRP 350 TL-2 crash test requirements and work zone crash cushions fabricated after December 31, 2019 shall meet the MASH TL-2 crash test requirements for use on local roadways with posted speeds of 40 MPH or less. The Contractor shall provide the Resident with documentation of the proposed work zone crash cushion's MASH Crash Test Results prior to installation at the jobsite.

527.03 Construction Requirements

The following is added to the end of the first paragraph:

The design speeds for work zone crash cushions shall be 45 mph for local road and 70 mph for turnpike roadways unless otherwise noted on the Plans.

527.04 Method of Measurement

Work Zone Crash Cushions used to protect exposed ends of guardrail for steel girder erection will not be measured separately for payment but shall be included under the Maintenance of Traffic for Steel Girder Erection item.

Replacement barrels, after collisions, will be paid for as a percentage of the individual barrels damaged to the total barrels in the complete system. The removal of impacted barrels and debris will be considered incidental to the replacement barrels. Barrels on hand, but unused will not be paid for directly.

Resetting Existing Work Zone Crash Cushion will be measured by the Unit, complete in place and accepted.

527.05 Basis of Payment

Resetting Existing Work Zone Crash Cushion will be measured by the Unit, complete in place and accepted.

Payment will be made under:

Pay Item		Pay Unit
527.341	Work Zone Crash Cushions – TL-3	Unit
527.342	Work Zone Crash Cushions – TL-2	Unit
527.343	Resetting Existing Work Zone Crash Cushion	Unit

SPECIAL PROVISION

SECTION 603

PIPE CULVERTS AND STORM DRAINS

(Reinforced Concrete Pipe)
(Concrete Collar)
(Corrugated Polyethylene Pipe)

603.01 Description

The following paragraphs are added:

This work shall also consist of furnishing and installing Class III or Class V reinforced concrete pipe at the locations as shown on the Plans or as approved by the Resident.

This work also consists of furnishing and installing a concrete collar to join existing concrete pipe to the proposed concrete or Corrugated High Density Polyethylene (HDPE) pipe in accordance with the details as shown on the Plans. The Contractor shall note that the concrete pipe ends may be of different sizes and may not fit snugly together.

This work shall also consist of furnishing and installing various sizes of corrugated HDPE pipe, including a dual wall adaptor fitting by Hancor or an approved equal as shown on the plans. No other pipe types within the Option III alternatives will be accepted.

603.02 Materials

All Corrugated High Density Polyethylene (HDPE) pipe for storm water and drainage systems shall meet the requirements of Subsection 706.06.

603.11 Method of Measurement

The following paragraph is added:

The Concrete Collar shall be measured by each unit installed, complete in place and accepted. This shall be full compensation for furnishing labor and materials to construct a Concrete Collar to connect the existing and proposed pipe ends in a working like manner.

Dual Wall Adapter Fitting shall be included for payment as three additional linear feet of the largest pipe involved.

603.12 Basis of Payment

Concrete Collars will be paid for at the Contract unit price each regardless of the size of the existing and proposed pipes.

Corrugated HDPE pipe will be paid for under the appropriate sized Culvert Pipe Option III pay items

Payment will be made under:

Pay Item		Pay Unit
603.155	12 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.165	15 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.1653	15 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.175	18 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.1753	18 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.195	24 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.1953	24 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.205	30 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2053	30 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.215	36 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2153	36 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.225	42 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2253	42 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.235	48 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2353	48 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.245	54 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2453	54 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.255	60 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2553	60 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.265	66 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2653	66 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.275	72 inch Reinforced Concrete Pipe - Class III	Linear Foot
603.2753	72 inch Reinforced Concrete Pipe - Class V	Linear Foot
603.155	12 Inch Reinforced Concrete Pipe – Class III	Linear Foot
603.28	Concrete Collar	Each

SPECIAL PROVISION

SECTION 604

MANHOLES, INLETS AND CATCH BASINS

604.01 Description

This Subsection is amended by the addition of the following:

The Type II work shall consist of rebuilding catch basins as specified in the Specifications to grade, removing the existing unsound concrete, frame and grate, applying a bead of Elastomeric sealer to the frame seat and reinstalling the existing grate in accordance with these Specifications and in reasonable close conformity with the lines and grades as shown on the Plans.

The Type IV work shall consist of rebuilding catch basins as specified in the Specifications to grade, removing the existing unsound concrete, frame and grate, and reinstalling the existing frame and grate in accordance with these Specifications and in reasonable close conformity with the lines and grades as shown on the Plans.

Brick and mortar shall NOT be used to set frames, alter, adjust, or rebuild catch basins and manholes; concrete shall be used.

The work locations are listed on the Drainage Summary sheets of the Plans.

604.02 Materials

The following sentences are added:

Elastomeric sealer shall be Sikaflex 1a as manufactured by Sika or an approved equal.

Class AAA concrete shall conform to Subsection 502.05; except that the minimum cement factor shall be 750 pounds per cubic yard and the coarse aggregate size shall conform to ASTM C33 Grading 7.

The third paragraph should be deleted and replaced with:

Catch Basin Frames and Grates shall be as outlined below and be manufactured by EJ Company of Brockton, Massachusetts or an approved equal and shall meet or exceed the AASHTO M306 Loading Requirements.

Catch Basin Frames shall be manufactured by EJ Company of Brockton, Massachusetts (or an approved equal) with the following product numbers:

5521Z – 8 Inch Frame Product Number 00552111
5546Z – 6 Inch Frame Product Number 00554611
5544Z – 4 Inch Frame Product Number 00554411

Catch Basin Frames shall be 8" frames unless otherwise specified by the plans or approved by the resident.

Catch Basin Grates shall be a square holed grate as manufactured by EJ Company of Brockton, Massachusetts (or an approved equal) with the following product number:

5520M5 Grate Product Number 00552060

If a cascade catch basin grate is specified on the plans then it shall be manufactured by EJ Company of Brockton, Massachusetts (or an approved equal) with the following product numbers depending on the direction of flow:

5520M8 Product Number 00552084 or 5520M8 Product Number 00552085

604.04 Altering, Adjusting, and Rebuilding Catch Basins and Manholes

This Subsection is deleted and replaced with the following:

When adjusting the existing catch basins they shall be dismantled sufficiently to allow reconstruction in accordance with the following requirements and as shown on the Plans:

Brick and mortar shall NOT be used to set frames, alter, adjust, or rebuild catch basins and manholes; concrete shall be used.

Any frame or grate damaged by the Contractor's operations shall be replaced by the Contractor at no additional cost to the Authority. Replacement frame and grate shall meet the requirements of Subsection 604.02. Damaged frames and grates shall become the property of the Contractor and shall be removed from Turnpike property.

Rebuild Catch Basin to Grade – Type II

The existing frame and grate shall be removed, stacked and reset. Remove all unsound concrete and anchor rods shall be removed to sound concrete as determined by the Resident. Install four Number 4 dowels, twelve inches in length, in each sidewall, reform catch basin to necessary grade using Class AAA concrete. The existing frame shall be reinstalled to the pavement grade as determined by the Resident.

Prior to installation of the grate, the frame shall be cleaned to accept a bead of elastomeric sealer. Sealer shall be placed in a continuous bead over the horizontal surface in accordance with the manufacturer's recommendation. The existing grate shall be reinstalled and allowed to set for a minimum of 1 ½-hour before receiving traffic loads.

Rebuild Catch Basin to Grade – Type IV

The existing frame and grate shall be removed, stacked and reset. Remove all unsound concrete and anchor rods to sound concrete as determined by the Resident. Install four Number 4 dowels, twelve inches in length, in each sidewall, reform catch basin to necessary grade using Class AAA concrete. Reinstall the existing frame and grate to the finished grade as designated by

the Resident and construct a bituminous concrete waterway including regrading (raising) the drainage swale with gravel borrow.

The Contractor shall remove unsound concrete (two inches minimum) from the existing floor slab and replace if directed by the Resident. Existing sumps shall be retained in the basin. Prior to placement of the concrete, the catch basin floor and walls shall be cleaned of all debris, loose and foreign materials to the satisfaction of the Resident.

604.05 Method of Measurement

The following are added after Subsection e. Grate:

Rebuild Catch Basin to Grade – Type II will be measured for payment by each unit rebuilt, secured and accepted.

Rebuild Catch Basin to Grade – Type IV will be measured for payment by each unit rebuilt, and accepted.

Each unit includes removing and replacing a depth up to 12 inches from the bottom of the frame to the top of sound concrete in the wall. Each six inches of concrete removed and replaced over 12 inches will be measured for payment as one eighth (1/8) of a unit. Depth measurements in excess of the dimensions authorized will not be included.

604.06 Basis of Payment

The following paragraphs are added after the first paragraph:

The accepted quantity of Rebuild Catch Basin to Grade – Type II will be paid for at the Contract unit price each. This price shall be full compensation for removing existing frame and grate, rebuilding the catch basin top to grade, reinstalling the existing frame, cleaning the horizontal surface, applying the elastomeric sealer, reinstalling the existing grate, and all other labor, equipment and materials required to complete the work.

The accepted quantity of Rebuild Catch Basin to Grade – Type IV will be paid for at the Contract unit price each. This price shall be full compensation for removing existing frame and grate, rebuilding the catch basin top to grade, reinstalling the existing frame and grate, and all other labor, equipment and materials required to complete the work.

The second paragraph is deleted and replaced with the following:

Excavation and backfill will not be measured separately for payment, but shall be incidental to the following pay items.

Bituminous concrete waterways shall be paid for under Item 459.06 or 459.061.

Sawing bituminous pavement will not be measured separately for payment, but shall be incidental to the related drainage items.

Payment will be made under:

Pay Item		Pay Unit
604.184	Rebuild Catch Basin to Grade – Type II	Each
604.186	Rebuild Catch Basin to Grade – Type IV	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks, Single Faced)
(31" W-Beam Guardrail – Mid-way Splice (8' Steel Posts, 8" Offset Blocks, Single Faced)
(31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks, Double Faced)

606.01 Description

The section is amended by the addition of the following:

This work shall consist of furnishing and installing guardrail components the required locations in accordance with the Specifications and in reasonably close conformity with the lines and grades shown on the Plans. The types of guardrail are designated as follows:

31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks)
31" W-Beam Guardrail – Mid-way Splice (8' Steel Posts, 8" Offset Blocks)

606.02 Materials

The section is amended by the addition of the following:

Steel posts shall be 7 feet or 8 feet long as specified in the plans.

The guardrail elements shall be per the Components' List found on Sheet No. 2 of 2 of draft Drawing SGR47 – 31" W-Beam Guardrail with Standard 8" Offset Block in the Task Force 13 Report noted above and/or as noted in the Contract Documents unless noted otherwise.

606.04 Rails

The section is amended by the addition of the following:

Height of top of rail shall be 31" measured from final grade. Height transition from 31" W-Beam, mid-spliced guardrail to existing guardrail shall occur over a 25' length.

606.08 Method of Measurement

The section is amended by the addition of the following:

31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks) and 31" W-Beam Guardrail – Mid-way Splice (8' Steel Posts, 8" Offset Blocks) will be paid for at the contract unit price per linear foot of rail satisfactorily installed and accepted.

606.09 Basis of Payment

The section is amended by the addition of the following:

The accepted quantity of 31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks) and 31" W-Beam Guardrail – Mid-way Splice (8' Steel Posts, 8" Offset Blocks) will be paid for at the contract unit price per linear foot of rail and shall be full compensation for furnishing all labor, equipment and materials necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
606.13	31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks, Single Faced)	Linear Foot
606.131	31" W-Beam Guardrail – Mid-way Splice (8' Steel Posts, 8" Offset Blocks, Single Faced)	Linear Foot
606.132	31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks, Double Faced)	Linear Foot

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(31" W-Beam Guardrail – Mid-way Splice Tangent Terminal)

606.01 Description

The following sentences are added:

This work shall consist of furnishing and installing a MFLEAT (MASH-compliant Flared Energy Absorbing Terminal) for use with the 31" W-Beam Guardrail – Mid-way Splice (7' Steel Posts, 8" Offset Blocks, Single Faced) as manufactured by Road Systems, Inc., 3616 Old Howard County Airport Road, Big Spring, Texas 79720, (432) 263-2435, and retroreflective adhesive sheeting in accordance with these Specifications and the manufacturer's installation instructions, and in reasonably close conformity with the lines and grades as shown on the Plans or as approved by the Resident.

606.02 Materials

The following sentence is added:

31" W-Beam Guardrail – Mid-way Splice Flared Terminal components shall be comprised of those shown in the manufacturers installation instructions. 8" blocks shall be used.

Reflective sheeting shall meet the requirements of Subsection 719.01, Reflective Sheeting – minimum ASTM Type XI; 3M™ Diamond Grade™ DG³ Reflective Sheeting Series 4000 or approved equal. The color for the reflective sheeting shall be silver (white) when installed on the right shoulder and shall be black chevron on yellow background only when installed on the left shoulder.

The following Subsections are added:

606.045 Offset Blocks

8" Non-wood offset blocks shall be used.

606.035 Construction Requirements

The Contractor shall submit a set of installation drawings to the Resident for approval. The system shall be installed in accordance with the manufacturer's recommendation and the installation drawings.

A reflective adhesive sheeting shall be applied to the nose of the MFLEAT System after installation.

606.041 Reflective Sheeting

The color for the reflective sheeting shall be silver (white) when installed on the right shoulder and shall be black chevron on yellow background only when installed on the left shoulder.

606.08 Method of Measurement

The second paragraph is amended by the addition of: "31" W-Beam Guardrail – Mid-way Splice Flared Terminal," after the words "Terminal section,".

606.09 Basis of Payment

The first paragraph is amended by the addition of: "31" W-Beam Guardrail – Mid-way Splice Flared Terminal," after the words "Terminal section,".

The second paragraph is amended by the addition of: ", 31" W-Beam Guardrail – Mid-way Splice Flared Terminal," after the words "NCHRP 350 end treatments".

The retroreflective sheeting will not be measured separately for payment but shall be incidental to the 31" W-Beam Guardrail – Mid-way Splice Tangent Terminal item.

Payment will be made under:

Pay Item		Pay Unit
606.1307	31" W-Beam Guardrail – Mid-way Splice Flared Terminal	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(31" W-Beam Guardrail – Mid-way Splice Terminal End – Anchored End)

606.01 Description

The section is amended by the addition of the following:

This work shall consist of furnishing and installing Terminal End – Anchored End – 31" W-Beam Guardrail end treatment in accordance with these Specifications and Plan Sheet details, the AASHTO-AGC-ARBTA Joint Committee Task Force 13 Report: A Guide to Standardized Highway Barrier Hardware, Drawing SEW31 in AASHTO Manual for Assessing Safety Hardware (MASH) approval letter B-256; and in reasonably close conformity with the lines and grades as shown on the Plans or as approved by the Resident.

606.02 Materials

The following sentences are added:

The guardrail elements shall be per the Components' List found on Sheet No. 2 & 3 of 3 of Drawing SEW31 – Trailing-end Anchorage System in the Task Force 13 Report noted above and/or as noted in the Contract Documents. The component RWM14a shall be modified to a length of 9'-4½" measured from the center of the Mid-way Splice to the center of the last guardrail post.

606.042 Terminal End – Anchored End

The following sentences are added:

Installation of the Terminal End – Anchored End - 31" W-Beam Guardrail end treatment shall be in accordance with these plans and specifications, the AASHTO-AGC-ARBTA Joint Committee Task Force 13 Report and the Details on Sheet No. 1 of 3 of Drawing SEW31 – Trailing-End Anchorage System.

606.08 Method of Measurement

The second paragraph is amended by the addition of: ", Terminal End - Anchored End – 31" W-Beam Guardrail," after the words "Terminal section,".

606.09 Basis of Payment

The first paragraph is amended by the addition of: ", Terminal End - Anchored End – 31" W-Beam Guardrail," after the words "Terminal section,".

The second paragraph is amended by the addition of: “, Terminal End - Anchored End – 31” W-Beam Guardrail, and” after the words “NCHRP 350 end treatments”.

Payment will be made under:

Pay Item		Pay Unit
606.1351	31” W-Beam Guardrail – Mid-way Splice Terminal End – Anchored End	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Reflectorized Beam Guardrail Delineator)

606.01 Description

The following paragraphs are added:

Reflectorized beam guardrail delineators shall be installed on existing guardrail to remain in place, guardrail noted to be removed, modified and reset (single and/or double rail) or new guardrail, at the locations noted on Maintenance of Traffic plans or as approved by the Resident. The delineators shall be installed prior to traffic being shifted closer to the identified guardrail run. The color for the reflective sheeting shall be silver (white) when installed on the outside shoulder and yellow when installed on the inside shoulder.

Reflectorized beam guardrail delineators shall be mounted as follows:

1. Delineators on guardrail adjacent to a shifted detour should be spaced every other guardrail post and located at the bolt in the valley of the guardrail beam.

2. On existing steel bridge rail, the delineators shall be mechanically attached towards the top, every 10 feet, and bottom, every 20 feet. Delineators shall also be mechanically attached in a similar pattern to concrete endposts that are 10 feet or longer.

3. If more than 25% of delineators in any 50 feet of guardrail, bridge rail, or endposts fall off for any reason, the Contractor will be responsible for reinstalling all delineators in that run at that their own cost.

4. In no instance shall delineators be installed on guardrail which deviates substantially from the alignment (horizontal or vertical) of the roadway or which is located more than eight feet from the edge of pavement.

5. On Tangents, mount delineators every 62.5-feet or every 10^{th} post.

6. On Curves, mount delineators every 31.25-feet or every 5^{th} post.

Exceptions and/or modifications will only be made with the approval of the Resident.

Contractor is required to submit installation method for review and approval to the Resident.

606.02 Materials

The fourth paragraph is deleted and replaced with the following:

The reflectorized beam guardrail delineators shall be fabricated from galvanized steel.

Reflective sheeting shall meet the requirements of Subsection 719.01, Reflective Sheeting – minimum ASTM Type XI; 3M™ Diamond Grade™ DG³ Reflective Sheeting Series 4000 or approved equal.

606.08 Method of Measurement

The following paragraph is added:

Reflectorized Beam Guardrail Delineators will be measured by each unit of the kind specified and installed. Maintenance and replacement of delineators will not be measured separately for payment unless otherwise approved by the Resident.

606.09 Basis of Payment

The second and third sentences in the first paragraph are deleted and replaced with the following:

Reflectorized Beam Guardrail Delineators will be paid for at the Contract unit price each when installed on existing guardrail, complete in place, which price shall be full payment for furnishing and installing all components and for all incidentals necessary to complete the installation. Reflectorized Beam Guardrail Delineators will not be paid for on new guardrail.

Payment will be made under:

Pay Item		Pay Unit
606.352	Reflectorized Beam Guardrail Delineator	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Delineator Post – Remove and Reset)
(Delineator Post - Remove and Stack)

606.01 Description

The following paragraphs are added:

This work shall also consist of furnishing and installing new delineator posts and/or removing and resetting and/or removing and stacking existing delineator posts within the Contract limits. The existing reflectorized delineator panels shall be removed and replaced with new reflectorized delineator panels as required by the Resident.

Existing and new delineator posts shall be located as follows, with the indicated panel:

Outside Shoulder:

- One at guardrail trailing ends (green delineator).
- Two at guardrail approach ends (one red delineator on first post and one red delineator on angle points.)

Median:

- One at guardrail trailing ends (green delineator, facing traffic).
- Two at guardrail approach ends (one red delineator on first post of CAT units, green on guard rail side, red on median opening side; and one red (both sides) delineator at angle point.)
- One at all other median guardrail angle points (red on both sides)

Other Locations:

- One at culvert outlets (green delineator).
- Twenty per mile evenly spaced at the edge of outside shoulder (white delineator).
- One at electrical junction boxes not associated with another item (red delineator).
- One at communication only junction boxes not associated with another item (orange delineator).

Delineator posts that do not exist in the locations described above, shall be supplied and installed by the Contractor. The installation of the delineator post shall include the demountable reflectorized delineator panel.

White edge delineators shall not be installed on any portion of the widened shoulder for Guardrail 350 Flared Terminal installations and shall not be installed behind the Guardrail 350 Flared Terminal rail segments.

606.02 Materials

The following paragraphs are added:

Non-guardrail Delineator Posts shall conform to Subsection 606.02 paragraph 3.

The seventh through ninth sentences of the fourth paragraph are deleted and replaced with the following:

Reflectorized flexible guardrail markers shall be a minimum of 2-inches in diameter, a maximum of 36” in length, ovalized at the top of the post to allow application of 3 inch by 9 inch high intensity reflective sheeting, and shall be capable of recovering from repeated impacts. The flexible guardrail delineator markers shall be grey and capped at the top with a flexible rubber cap; Safe-Hit Flexible Guardrail Delineator or approved equal. Reflective material shall meet the requirements of ASTM Type IX Diamond Grade VIP (Visual Impact Performance).

The demountable reflectorized delineator panels shall meet the material requirements of Subsection 719.06. The delineator panel shall be rectangles measuring 9" x 3".

606.03 Posts

The following paragraphs are added:

The top of delineator posts shall be installed 4’ - 6” (54”) above edge of pavement elevation. Delineators shall be installed four feet from edge of pavement except those delineating end treatments, culverts and electrical items.

Mile marker posts shall be mounted on breakaway supports. The bottom of the sign shall be 5’ - 0” (60”) above the pavement at the solid white line and shall be offset five feet from the edge of pavement.

A mock-up of the guardrail delineator posts shall be submitted to the Resident for approval prior to installation.

Any materials damaged by the Contractor’s operations shall be replaced at no additional cost to the Authority.

Top of the delineator panel shall be flush with the top of post.

606.08 Method of Measurement

The following paragraphs are added:

Delineator Posts shall be measured by each unit satisfactorily installed. Delineator Post-Removed and Reset will be measured by each unit satisfactorily removed and reset. Delineator Posts Removed and Stacked will be measured by each unit satisfactorily removed and stacked.

Mile Marker post shall be measured for payment as Delineator Post. The breakaway supports shall be incidental to the Underdrain Delineator Post pay item.

606.09 Basis of Payment

The following sentences are added:

The accepted quantity of Delineator Posts will be paid for under the Underdrain Delineator Post item, at the Contract unit price per each which price shall be full compensation for the post and specified delineator or mile marker panel, complete in place.

The accepted quantity of Delineator Post - Removed and Reset will be paid for at the Contract unit price each, which price shall be full compensation for removing and resetting the delineator panel or mile marker panel and post and all incidentals necessary to complete the work.

The accepted quantity of Delineator Posts Removed and Stacked will be paid for at the Contract unit price each, which price shall be full compensation for removing and stacking delineator panel or mile marker panel and posts and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
606.3561	Delineator Post - Remove and Reset	Each
606.3562	Delineator Post - Remove and Stack	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Guardrail – Remove, Modify and Reset, Single Rail)
(Guardrail – Remove, Modify and Reset, Double Rail)
(Guardrail – Remove and Stack)
(Guardrail Adjust – Single Rail)
(Guardrail Adjust – Double Rail)

606.01 Description

The following paragraphs are added:

This work shall also consist of adjusting the height of the existing single and double rail guardrail in locations where the existing height of rail is not 30 inches. The guardrail shall be adjusted to a height of 30 inches. Existing single and double rail shall also be adjusted for lean.

The guardrail adjustment shall take place at all necessary locations; approximate locations are listed in the schedule of guardrail limits both median and outside shoulder. Exact locations for adjustment shall be determined by the Resident. If, during the course of the work, the contractor finds additional rail to be adjusted, then he shall notify the Resident, and the Resident determine if the rail is to be adjusted.

This work shall also consist of removing, stockpiling and stacking of existing single and double guardrail elements, component parts and hardware suitable for replacement as approved by the Resident. At the completion of the Contract, any unused guardrail elements, posts, component parts and hardware suitable for reuse shall remain the property of the Authority. Any guardrail elements, posts, component parts and hardware unsuitable for reuse shall become property of the Contractor.

Stockpiled materials, suitable for reuse, shall be utilized on Remove, Modify and Reset items prior to new materials being paid for.

This work shall consist of removing, disposing of existing guardrail elements, component parts and hardware, as directed by the Resident. All materials shall become the property of the Contractor and shall be removed from the site at the completion of the Project. The Contractor shall provide the Resident with an affidavit stating the final location of all disposed material and that the material was disposed of in accordance with the Maine Department of Environmental Protection Solid Waste Regulations.

606.02 Materials

The following paragraph is added at the end of the subsection:

New non-wood offset blocks conforming to NCHRP 350 Test Level 3 shall be installed on all guardrail being reset. The existing steel offset brackets and backup plates shall become the property of the contractor.

The following Subsection is added:

606.021 General

All existing guardrail to be raised or lowered shall be completed prior to new guardrail or end treatments being attached.

606.036 Adjusting Existing Guardrail

Any materials or galvanizing damaged by the Contractor's operations shall be replaced or touched-up at no additional cost to the Authority.

Guardrail posts shall be raised to a minimum of five inches above final elevation prior to driving post to final elevation; this applies to both raising and lowering rail.

Any given length of guardrail to be adjusted shall be done in such a way that top of rail elevations do not vary drastically between each section of guardrail. Rail height tolerance shall be 30 inches, plus 0 inches, minus 1/2 inch. The 30 inches shall be measured from the edge of pavement to the top of rail beam when within 2 feet of the edge of pavement.

Rail shall be adjusted for lean where needed. All posts shall be plumb after adjusting for lean.

When the rail tapers from one bound to the other the rail shall be adjusted to the correct height on the farthest ends and shall be adjusted towards the center of the median to create a smooth line.

Earth around each adjusted or reset post shall be raked and compacted with a minimum 8 pound hand tamper or an approved device. Holes created due to adjusting or resetting a post shall be filled with a similar surrounding material and compacted.

606.08 Method of Measurement

The following paragraphs are added:

Adjusting of both single and double rail guardrail shall be measured by the linear foot of Guardrail adjusted and accepted.

Raking and compacting the earth around each reset post with a minimum 8 pound hand tamper or an approved device, and infilling and compacting holes created due to resetting posts with a similar surrounding material will not be paid separately, but shall be incidental to the Guardrail - Remove, Modify and Reset Pay or Guardrail - Adjust pay items.

Guardrail Remove and Stack will be measured on a linear foot basis of guardrail satisfactorily removed and stockpiled whether single rail or double rail. Single and double twisted end sections will be measured for payment on a linear foot basis as 25 feet of guardrail removed.

Guardrail removed and not reset or stacked shall be incidental to Contract Items and include all removal, disposal, equipment and labor necessary to satisfactorily complete the work.

Steel posts to replace damaged posts shall come from the stockpile of guardrail components to be disposed of, from this Contract and will not be measured separately for payment. If, in the opinion of the Resident, there are no suitable steel posts in the stockpile then steel posts will be measured for payment.

W-beam rail elements to replace damaged rail elements shall come from the stockpile of guardrail from the Remove and Stack or the guardrail to be disposed of from this Contract and will not be measured separately for payment. If, in the opinion of the Resident, there are no suitable W-beam rail elements in the stockpile then the W-beam rail elements will be measured for payment.

606.09 Basis of Payment

The following paragraphs are added:

Adjusting of single and double rail guardrail will be paid for at the Contract unit price per linear foot and shall be full compensation for furnishing all labor, equipment and materials necessary to complete the work. Guardrail Adjust will not be measured for payment until all compaction has been completed.

The accepted quantity of guardrail removal will be paid for at the Contract unit price bid, which price shall be full compensation for removing, transporting and stacking all guardrail elements, component parts and hardware, equipment, labor and all incidentals necessary to complete the work. No additional payment will be made for double rail.

Payment will be made under:

Pay Item		Pay Unit
606.3605	Guardrail – Remove, Modify, and Reset Single Rail	Linear Foot
606.3606	Guardrail – Remove, Modify, and Reset Double Rail	Linear Foot
606.369	Guardrail - Remove and Stack	Linear Foot
606.3621	Guardrail Adjust, Single Rail	Linear Foot
606.3622	Guardrail Adjust, Double Rail	Linear Foot

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Single Offset Block – W-Beam)
(Single Offset Block - Thrie-Beam)
(Asymmetrical Thrie Beam Transition)

606.01 Description

The following paragraph is added:

This work shall consist of furnishing and installing single offset blocks at all existing guardrail beam locations that are not part of a new or remove, modify and reset location and as shown on the Contract Documents. New NCHRP 350 compliant offset block shall be installed on existing galvanized steel posts and connected to Guardrail Type 3d and Thrie Beam Rail.

This work shall consist of removing and stacking existing Thrie Beam Transition panels, furnishing and installing the Asymmetrical Thrie beam to W-beam Transition panels, single rail - modified section and double rail modified section, connecting it to the existing or proposed W-Beam guardrail and Thrie Beam modified at locations on the Maine Turnpike, as shown on the Plans or as approved by the Resident. All guardrail components shall have passed the NCHRP 350 Test Level 3. Composite offset blocks shall be used.

606.02 Materials

The following sentences are added:

Offset blocks shall have passed NCHRP 350 Test Level 3 and shall not be wood.

The following Subsection is added:

606.021 General

The existing median guardrail posts have four off-center bolt holes used to attach the existing steel offset blocks. The new offset blocks have two bolt holes centered on the W-beam section. The existing posts must be retrofitted to receive the new non-wood offset block assembly. Additional bolt holes required in the existing posts shall be drilled or punched but the size shall not exceed the dimension given by the manufacturer. Metal around the holes shall be cleaned and painted with a cold-applied zinc-rich paint. The holes shall not be burned with a torch.

The completed guardrail system shall be in conformance with the NCHRP 350 Test Level 3 requirements.

606.08 Method of Measurement

The following paragraphs are added:

Single Offset Block - W-Beam and Single Offset Block - Thrie Beam shall be measured per each unit installed and accepted.

Asymmetrical Thrie Beam Transition shall be measured by each unit installed and accepted.

606.09 Basis of Payment

The following paragraphs are added:

New Single Offset Block - W-Beam and Single Offset Block - Thrie Beam furnished and installed at specified locations will be paid for at the Contract unit price each complete in place and accepted. Payment shall be full compensation for furnishing all labor, equipment and materials necessary to complete the work including, but not necessarily limited to, removal of existing rail beam, removal and disposal of existing offset block, drilling new holes in existing post, application of galvanized paint, furnishing and installing new non-wood offset block, removal and disposal of back-up plates, and resetting the rail beam.

Asymmetrical Thrie Beam Transition will be paid for at the Contract unit price each complete in place, and shall be full compensation for furnishing all labor, equipment and materials necessary to complete the work consisting of, but not necessarily limited to, furnishing and installing the Asymmetrical Thrie Beam to Existing W-beam Transition, Single Rail - Modified Section and Existing Double Rail – Modified Section, and all detailed accessories; furnishing and installing all required posts, composite offset blocks, cables, nuts, bolts, washers, and all other items necessary to complete the installation and connection to the existing or proposed W-Beam and the Thrie Beam – Modified.

Payment will be made under:

Pay Item		Pay Unit
606.471	Single Offset Block – W-Beam	Each
606.472	Single Offset Block – Thrie Beam	Each
606.701	Asymmetrical Thrie Beam Transition	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Widen Shoulder for Guardrail Terminal)
(Modify Widened Shoulder for Guardrail Terminal)

606.01 Description

The following sentence is added:

Widen Shoulder for Guardrail Terminal work shall consist of widening the existing shoulder at specified Guardrail Terminal locations by excavating, furnishing, grading and compacting new shoulder aggregate subbase course gravel, granular borrow, common borrow, and asphalt grindings in accordance with the thickness and typical sections as shown on the Plans or as approved by the Resident.

Modify Widened Shoulder for Guardrail Terminal work shall consist of grubbing the existing widened shoulder to granular base material, widening the existing shoulder widening at specified Guardrail Terminal locations by excavating, furnishing, grading and compacting new shoulder aggregate subbase course gravel, granular borrow, common borrow, and asphalt grindings in accordance with the thickness and typical sections as shown on the Plans or as approved by the Resident.

The following Subsections are added:

606.021 Granular Borrow

Granular borrow shall be material meeting the requirements of Subsection 703.19.

606.022 Fill Material

Fill material shall be existing excavation or common borrow from an outside source.

606.023 Asphalt Grindings

Asphalt grindings shall consist of pavement millings created by the cold planning process. The asphalt grindings stockpile must be viewed and approved by the Resident prior to any grindings being placed at any location.

The grindings shall be reprocessed (crushed) to meet the following gradation:

SIEVE DESIGNATION	GRADING
3/4”	100
1/2”	95 - 100
No. 4	50 - 80
No. 50	18 - 28
No. 200	3 - 10

606.024 Aggregate Subbase Course-Gravel

Aggregate subbase course-gravel shall be material meeting the requirements of Subsection 703.06.

606.051 Compaction - Asphalt Grindings

The asphalt grindings shall be placed and compacted to a minimum thickness of three inches unless otherwise designated by the Resident.

606.08 Method of Measurement

Widen Shoulder for Guardrail Terminal will be paid at the contract unit price per each.

Modify Widened Shoulder for Guardrail Terminal will be paid at the contract unit price per each.

Common borrow will be measured in accordance with Section 203 of these Specifications.

Loam, seed and mulch will not be measured separately but shall be incidental to the Widen Shoulder for Guardrail 350 Flared Terminal pay item and the Modify Widened Shoulder for Guardrail 350 Flared Terminal.

606.09 Basis of Payment

The following paragraphs are added:

The accepted quantity of Widen Shoulder for Guardrail Terminal and Modify Widened Shoulder for Terminal shall also include the excavation, asphalt grindings, aggregate subbase course gravel, granular borrow, loam, seed, fertilizer, and mulch.

Common borrow will be measured in accordance with Section 203 of these Specifications.

Payment will be made under:

Pay Item		Pay Unit
606.755	Modify Widened Shoulder for Guardrail Terminal	Each

SPECIAL PROVISION

SECTION 610

STONE FILL, RIPRAP, STONE BLANKET AND STONE DITCH PROTECTION

(Temporary Stone Check Dams)

610.01 Description

Paragraph (g) is added as follows:

(g) Stone Check Dams – Machine placed stone, including the placement, removal and storage of the stone used for temporary stone check dams.

610.032.e. Stone Check Dams

The following paragraph is added:

Stone check dams shall be constructed in accordance with the details as shown on the Plans, detailed in the MaineDOT's latest Best Management Practices, or as approved by the Resident. The stone shall be placed in one operation without special handling or handwork except to create a low point along the top gradient above the ditch flow lines.

The following Subsection is added:

610.033 Removing Stone

The stone for temporary stone check dams shall be removed after vegetation has been established in the ditches as approved by the Resident.

Any damage to the slopes and ditches caused by the removal of the stone check dams shall be repaired by the Contractor at their own expense.

The area directly under the temporary stone check dams shall be loamed, seeded and mulched immediately after the removal of the stone check dams. The loam, seed and mulch will be measured for payment under the appropriate pay items.

Stone used for temporary stone check dams shall be removed and stored and shall become the property of the Contractor at the completion of the Project.

The following Subsection is added:

610.034 Maintenance

Stone check dams shall be maintained by the Contractor. Sediment deposits behind check dams shall be removed when the depth of sediment reaches 50 percent of the check dam height.

610.05 Method of Measurement

The following paragraphs are added:

Stone for Temporary Stone Check Dams will be measured by the cubic yard complete in place. The removal and storage of the stone will not be measured separately for payment, but shall be incidental to the Temporary Stone Check Dam item. This shall include the transporting and unloading of the stone. If this stone is reused on the Project, it will be measured separately for payment under the appropriate pay item.

The removal and disposal of sediment from behind the Temporary Stone Check Dams will not be measured separately for payment, but shall be incidental to the Temporary Stone Check Dam pay item.

610.06 Basis of Payment

The following sentences are added:

The accepted quantities of stone for Temporary Stone Check Dams will be paid for at the Contract unit price per cubic yard.

Payment will be made under:

Pay Item		Pay Unit
610.181	Temporary Stone Check Dam	Cubic Yard

SPECIAL PROVISION

SECTION 610

STONE FILL, RIPRAP, STONE BLANKET, AND STONE DITCH PROTECTION

(Void-Filled Riprap)

610.01 Description

This work consists of excavating for and constructing a protective covering of stone, with the voids filled by granular material.

610.02 Materials

Material for Void-Filled Riprap -Type A shall conform to the following requirements:

a. Approximately 3 parts by volume shall be Plain Riprap meeting the requirements of Standard Specifications Subsection 703.26.
b. Approximately 1 part by volume shall be Streambed Material meeting the requirements of Special Provision Section 203, Special Fill - Streambed Material.

The proportion of the Plain Riprap to Streambed Material may be modified by the Resident if it is apparent that insufficient gravel is included to fill all the voids or excess gravel is reducing the stability of the riprap. The Contractor shall premix the Plain Riprap and Streambed Gravel prior to placement.

Material for Void-Filled Riprap - Type B shall conform to the following requirements:

a. Approximately 3 parts by volume shall be Plain Riprap meeting the requirement of Standard Specification Subsection 703.26
b. Approximately 1 part by volume shall be stockpiled clean Native Material or Loam meeting the requirement of Standard Specification 615.07.

The proportion of the Plain Riprap to Native Material/Loam may be modified by the Resident if it is apparent that insufficient material is included to fill all the voids or excess material is reducing the stability of the riprap. The Contractor shall premix the Plain Riprap and Native Material/Topsoil prior to placement.

The Contractor shall identify the source and proposed mixes for inspection at least 10 working days prior to the start of stream channel construction. The grading of the stone portion of Void-Filled Riprap shall be determined by the Resident by visual inspection in accordance with the Standard Specifications Subsection 610.032d Inspection.

610.03 Construction Requirements

Void-Filled Riprap - Type A construction shall be placed full depth in one operation, approximately true to the required slope line and grade of the channel and be uniform in appearance.

Prior to returning stream flow to the channel, the riprap shall be flooded to the maximum extent practical to compact the gravel material. Voids shall be filled by adding additional Streambed Gravel as filler material and flooding to wash the material in. If the top layer of material in the channel is too coarse to pond water on top, Common Borrow, Granular Borrow for Embankment, excavation, dredge, or other material with a significant proportion of fines and approved by the Resident shall be washed into the Void-Filled Riprap until the voids are filled and sealed so that water ponds on the surface.

Void-Filled Riprap - Type B shall be placed full depth in one operation along the riverbanks as shown on the plans. Additional Native Material/Topsoil shall be used to fill voids on the surface of the Void-Filled Riprap.

610.04 Method of Measure

Void-Filled Riprap – Type A or B will be measured by the cubic yard, complete in place.

610.05 Basis of Payment

Payment for Void Filled Riprap – Type A or B will be made at the contract unit price per cubic yard complete in place.

Costs of all required excavation below the slope line for the placement of bedding, riprap, and gravel fill material and for furnishing and placing the bedding material itself will be considered incidental to the contract item and no separate payment will be made. Water and filler material added to the Void Filled Riprap to fill voids shall be considered incidental to the contract item and no separate payment will be made.

Payment will be made under:

Pay Item		Pay Unit
610.213	Void-Filled Riprap – Type A or B	Cubic Yard

SPECIAL PROVISION

SECTION 613

EROSION CONTROL BLANKET

613.01 Description

This work shall also include seeding, mulching and watering the median swale and/or longitudinal flow line to the limits and width as shown on the Plans or as directed by the Resident.

613.02 Materials

The following sentences are added:

Seeding shall meet the requirements of Section 618, Seeding, Method Number 2.

Mulch shall meet the requirements of Section 619.

The following Subsection is added:

613.041 Maintenance and Acceptance

See Section 618.10 for maintenance and acceptance of seeding.

613.042 Mulch

All mulch shall be placed after the area has been seeded and prior to the installation of the Erosion Control Blanket.

613.09 Basis of Payment

The following "and mulch" is added after the words "initial seeding" in the second sentence.

SPECIAL PROVISION

SECTION 619

MULCH

(Mulch – Plan Quantity)
(Temporary Mulch)

619.01 Description

The first paragraph is modified by the addition of the following:

"as a temporary or permanent erosion control measure" after the word "mulch".

Add the following sentence at the end of the first paragraph:

Refer to Section 656 Temporary Soil and Water Pollution Control, for more information on Temporary Mulch.

619.03 General

The first paragraph is deleted and replaced with the following:

Cellulose fiber mulch shall not be used within 200 feet of a wetland or stream. The limits shall be 200 feet up station and down station of the wetland or streams as well as the slopes adjacent to the stream. The application of hay or straw mulch with an approved binder shall be used at these locations to prevent erosion.

The use of cellulose fiber mulch will only be allowed at other areas with the approval of the Resident. The Contractor may be required to demonstrate that the material may be applied in a manner that will prevent erosion and will aid in the establishment of permanent vegetation. The Resident reserves the right to require the use of hay or straw mulch at all locations if he determines that the cellulose mulch is ineffective. Cellulose fiber mulch is not acceptable for winter stabilization.

610.06 Method of Measurement

The following sentence is added:

Temporary Mulch will be paid for by the lump sum.

656.10 Basis of Payment

Temporary Mulch will be paid for at the Contract price per lump sum which shall be full compensation for furnishing and spreading the Temporary Mulch as many times as necessary as determined by the Contractor's operations and staging. The price shall also include the additional mulch netting and snow removal necessary during the winter months.

Payment will be made under:

Pay Item		Pay Unit
619.1201	Mulch – Plan Quantity	Unit
619.1202	Temporary Mulch	Lump Sum

SPECIAL PROVISION

SECTION 626

FOUNDATIONS, CONDUIT, AND JUNCTION BOXES FOR HIGHWAY SIGNING, LIGHTING, AND SIGNALS

626.031 Conduit

The third paragraph shall be deleted and replaced with:

All junction or pull boxes shall be vehicle rated with a minimum design load of 22,000lbs and installed as shown on the plans. Junction boxes for the traffic signal and communication conduit associated with the project shall be polymer concrete as manufactured by QUAZITE® a division of Hubbell Power Systems, or an approved equal. The boxes shall be 36" x 24" and 21" deep. The words TRAFFIC SIGNAL or COMMUNICATION shall be stamped on the cover as noted in the Plans or directed by the Resident. All existing junction boxes in useable condition shall be removed and stacked as directed by the Resident Engineer.

Junction boxes for the electrical associated with highway lighting shall be polymer concrete as manufactured by QUAZITE® a division of Hubbell Power Systems or an approved equal. The boxes shall be 18" x 11" and 18" deep. New boxes shall have the word LIGHTING stamped on the cover as noted in the Plans or directed by the Resident. The boxes shall have a 15,000-lb. load rating.

The fourth paragraph shall be deleted and replaced with:

Where conduits enter exposed junction boxes, they shall be sloped to drain towards the conduit entrance holes, unless otherwise directed. All conduit ends in exposed junction boxes or in concrete foundations shall be fitted with bell ends. Weep holes of ¼ inch diameter shall be placed in all pull boxes, junction boxes, and fuse boxes. A 3-inch PVC drain pipe shall be installed projecting 3" into the gravel bedding and extend until daylight at a minimum of 0.5% slope draining away from the junction box.

626.033 Polyvinylchloride Conduit Installation

The following paragraph shall be added:

Exposed conduit shall be rigidly and securely fastened with acceptable fasteners or supports, as indicated on the plans or approved. Fasteners or supports shall not be placed more than 6 feet apart on centers, except as otherwise authorized. Conduits shall generally be supported by an approved spacer at the point of support, so that there is an air space between the conduit and the supporting surface. Ends of conduit runs terminating in any box without a threaded hub shall be provided with a metallic locknut and insulated bushings on the inside of the box.

626.034 Concrete Foundations

The following paragraphs shall be added after the 10th paragraph:

The above grade portion of concrete foundation surfaces shall receive an application of Type 1C penetrating silane concrete sealer from the MaineDOT Qualified Products List. The application rate and method of application shall be in accordance with manufacturer's published recommendations.

On surfaces to be treated, all voids shall be filled with mortar and the entire surface shall be dressed by dry rubbing to remove marks and blemishes to present a neat appearance. The silane application shall not be done until 14 days minimum after casting. Surfaces shall be free from laitance, oil, dirt, grease, dust, curing compound or any other deleterious material. The temperature of the concrete shall be above 40 degrees F and below 90 degrees F at the time of application or per manufacturer's published recommendations.

Any concrete foundation that is damaged during placement or doesn't meet design requirements will be replaced. No repairs to the foundations will be allowed.

All precast foundations in satisfactory condition as determined by the Resident shall be stacked at the MTA Crosby Maintenance Area. All cast in place foundations, and precast foundation in unsatisfactory condition shall become property of the contractor and disposed of by the Contractor off the turnpike right-of-way.

626.04 Method of Measurement

The following sentence is added:

Quazite junction box shall be measured by each unit in place and accepted existing or new and shall include 3-inch pvc drain pipe as shown in the plans.

Precast junction box shall be measured by each unit in place and accepted existing or new plans.

626.05 Basis of Payment

The following sentence shall be added to the third paragraph:

Payment of non-metallic conduit shall also include furnishing, installation, routing, termination, splices and connection of the wire per the plans and specifications.

The words, "polymer concrete" shall be added after the words, "precast concrete" in the second sentence of the second paragraph.

Payment will be made under:

Pay Item		Pay Unit
626.121	Quazite Junction Box (36X24)	Each
626.122	Quazite Junction Box (18X11)	Each

SPECIAL PROVISION

SECTION 626

FOUNDATIONS, CONDUIT, AND JUNCTION BOXES
FOR HIGHWAY SIGNING, LIGHTING AND SIGNALS

(Horizontal Directional Drilled Conduit)

626.01 Description

Horizontal Directional Drilling (HDD) method shall be used for installation of non-metallic conduit for highway lighting, toll systems and traffic signals when specified on the project plans or approved by the Resident. It shall include furnishing of all materials, site preparation, equipment setup, pilot bore, conduit pulling through the drilled bore, installation of pull wire and fittings, site restoration, and incidental work necessary to satisfactorily install conduit at the required locations and depths.

626.02 Materials

Conduit for Horizontal Directional Drilling shall meet requirements of Section 715.03 for non- metallic conduit. Non-metallic conduit to be installed under roadways shall be Schedule 80 or greater. Non-metallic conduit to be installed in other locations shall be Schedule 80 or greater. Conduit sections shall be joined by methods suitable for installation by HDD. Joined conduit sections must have adequate strength and flexibility to withstand the installation stresses and overburden pressures without compromising the structural stability of the conduit wall. Conduit must be able to meet the bend radius required for the proposed installation. Conduit sections shall be joined in a manner resulting in the inner surfaces being flush and even. PVC End Bells shall be utilized on all conduit ends.

626.03 Construction

Prior to commencing HDD work, the Contractor shall submit a drilling work plan to the Resident for approval addressing the following, at minimum:

- Profile of the proposed bore plotted at a scale appropriate for the crossing and acceptable to the Resident;
- HDD site layout including entry and exit points;
- Drilling fluid management plan, including drilling fluid types and specifications, cleaning and recycling equipment to be used, estimated flow rates, procedures for minimizing drilling fluid escape, and the method and location for final disposal of waste drilling fluids. Material safety data sheets shall be provided for all drilling fluid additives that will be used;
- Conduit storage and handling details;
- Summary of assembly and installation procedures to be used;
- Material safety data sheets of any other potentially hazardous substances to be used;
- Response plans for possible problems that may be encountered;

- Documentation and certification of the ability of the proposed conduit to withstand installation stresses and pressures.

The HDD drill rig and auxiliary pieces of equipment shall be appropriate for the diameter and length of conduit being installed. The power system shall provide sufficient pressure to power the drilling operations with a hydraulic system free from leakage. The directional drilling machine shall be anchored as necessary to stabilize it against excessive dislocation.
In order to minimize friction and prevent collapse of the bore hole, a soil stabilizing agent (drilling fluid) may be introduced into the annular bore space from the front end of the drill head to create a slurry. The drilling fluids shall be selected or designed for the site's specific soil and ground water conditions. The drilling fluid mixing system shall be self-contained and closed with sufficient size to mix and deliver drilling fluid to the drill head. The mixing system shall continually agitate the drilling fluid during drilling operations. The fluids delivery system shall be capable of pumping drilling fluid with sufficient volume and pressure from the mixing tank through the drill rods to the drill head.

Alignment of the bore shall be accomplished by proper orientation of the drill head as it is pushed through the ground by the drill rig. Orientation and tracking of the drill head shall be determined by using an acceptable tracking system from a transmitter located within the drill head. The HDD guidance system shall be capable of locating and tracking the drill head continuously and accurately both horizontally and vertically during the pilot bore. All equipment shall be properly calibrated before commencing the directional drilling operation. The alignment of the conduit shall remain at least 10 feet below the mainline traffic lanes and ramps at all times.

Borehole diameter relative to the conduit diameter shall be minimized to limit potential damage from soil displacement, settlement, and heaving. When necessary, the pilot borehole may be enlarged by back reaming to accommodate conduit larger than the pilot borehole size. Back reaming may be accomplished ahead of or at the same time as pulling the conduit through the pilot borehole. The back-reamer shall be sized to create a large enough borehole to allow cuttings to transfer from the face of excavation to the surface with minimum soil displacement.

Escaping slurry or drilling fluids shall be confined at the ground surface during pull back or drilling. All drilling fluids shall be disposed of or recycled in a manner acceptable to the Maine Department of Environmental Protection. Upon completion of the HDD operation, the work site shall be cleaned of all excess slurry or spoils. Any damage caused by heaving, settlement, separation of pavement, escaping drilling fluid, or other damage from the directional drilling operation shall be repaired by the Contractor to the satisfaction of the Resident.

At the completion of the HDD conduit installation, the Contractor shall provide to the Resident marked up plans noting location, depth, and material type of all conduit installed by the Horizontal Directional Drilling method.

626.04 Method of Measurement

Horizontal Directional Drilled Conduit will be measured by the number of linear feet of conduit in place and accepted by the Resident.

626.05 Basis of Payment

Payment will be made for the total number of linear feet of Horizontal Directional Drilled Conduit and accepted at the contract price per linear foot. Payment shall include the cost of furnishing and installing the conduit; site preparation and restoration of drilling entry and exit points; removal of excavated material and drilling spoils; removal and disposal of drilling fluids and excess slurry; pull wire, fittings, grounding and bonding; test cleaning of conduit interior; and all other materials, labor, equipment, and incidentals necessary to complete the work. All wiring, as indicated on the plans, within the Horizontal Directional Drilled Conduit for highway lighting and traffic signal shall be incidental to this item. All wiring, as indicated on the plans, within the Horizontal Directional Drilled Conduit for toll power and communication shall be paid for at the unit price for the specific 655 wire/cable item.

Payment will be made under:

Pay Item		Pay Unit
626.223	Horizontal Directional Drilled Conduit	Linear Foot

SPECIAL PROVISION

SECTION 626

FOUNDATIONS, CONDUIT, AND JUNCTION BOXES
FOR HIGHWAY SIGNING, LIGHTING AND SIGNALS

(Foundations)

626.01 Description

Item 626.35 – Controller Cabinet Foundation shall be used at Exit 32 for traffic signal modifications.

Item 626.38 – Ground Mounted Cabinet Foundation shall be used at Exit 36 for lighting panel and service upgrades.

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(Temporary 6 Inch Pavement Marking Tape)
(Temporary 6 Inch Black Pavement Marking Tape)

627.01 Description

The following sentence is added:

This work shall also consist of furnishing, placing, maintaining and removing temporary pavement marking tape at locations shown on the Plans or as directed by the Resident.

This work shall also consist of furnishing, placing, maintaining and removing temporary black pavement marking tape at locations shown on the Plans or as directed by the Resident. Temporary 6 Inch Black Pavement Marking Tape shall be used to cover conflicting existing pavement marking paint.

627.02 Materials

The following paragraph is added:

Temporary pavement marking tape shall be Stamark Wet Reflective Removable Pavement Marking Tape Series 710 as manufactured by 3M of St. Paul, Minnesota or an approved equal.

Temporary pavement marking tape shall be Stamark Removable Black Line Mask Tape Series 715 as manufactured by 3M of St. Paul, Minnesota or an approved equal.

627.04 General

The following paragraphs are added:

Work under this item shall be in accordance with the manufacturer's recommendations. A factory representative from 3M shall be present for the first application of all temporary pavement marking tape to insure proper application and product performance.

The pavement markings shall be applied mechanically to clean dry pavement as recommended by the manufacturer and approved by the Resident.

Temporary pavement markings shall consist of applying six inch solid white, six inch broken white, and six inch yellow reflectorized pavement marking tape for traffic maintenance during construction as shown on the Plans or as directed by the Resident.

Temporary pavement marking tape that loses reflectivity, becomes broken, dislodged or missing during the life of the Contract shall be replaced by the Contractor at no additional cost to the Authority.

627.06 Application

The following paragraphs are added:

For application of the tape, when the pavement temperature is below 50°F, heat shall be applied to the pavement surface, if deemed necessary by the factory representative or as directed by the Resident, at no additional cost to the Authority. Proper primer for the temperatures shall be used as directed by the manufacture.

The pavement mark tape shall be rolled over with a vehicle once application is complete and then scored every 20 feet when placed in long runs to prevent full length unraveling.

627.08 Removing Lines and Markings

The following sentence is added:

Removal of temporary pavement marking tape shall be accomplished without the use of heat, solvents, grinding or sandblasting and in such a manner that no damage to the pavement results.

627.09 Method of Measurement

The following paragraph is added:

Temporary Pavement Markings - Tape will be measured for payment by the linear foot. The measurement of broken lines will not include the gaps.

627.10 Basis of Payment

The following paragraphs are added:

Payment for the Temporary Pavement Markings - Tape will be made at the Contract bid price per linear foot, which price shall include furnishing, installing, maintaining and removing the temporary tape and all materials, labor, equipment and incidentals necessary to accomplish the work. Replacement of Temporary Pavement Markings - Tape, as described above, will be incidental and no separate payment will be made.

Payment for the Temporary 6 Inch Black Pavement Marking Tape will be made at the Contract bid price per linear foot installed, which price shall include furnishing, installing, maintaining and removing the temporary tape and all materials, labor, equipment and incidentals necessary to accomplish the work. Replacement of 6 Inch Black Temporary Pavement Marking Tape, as described above, will be incidental and no separate payment will be made.

Payment will be made under:

Pay Item		Pay Unit
627.73	Temporary 6 Inch Pavement Marking Tape	Linear Foot
627.731	Temporary 6 Inch Black Pavement Marking Tape	Linear Foot

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(White or Yellow Pavement Marking Line)

627.01 Description

The following sentences are added:

This work shall consist of furnishing and placing the final pavement markings at locations as shown on the Plans or as directed by the Resident.

The following sentence is added:

This work shall consist of furnishing and placing pavement marking paint and temporary pavement marking paint at locations as shown on the Plans or as directed by the Resident.

627.02 Materials

The following is added before the last paragraph:

The paint for pavement markings shall be 100% acrylic waterbase paint.

627.04 General

The following is added to the third paragraph:

Dotted white lines (DWL) shall consist of alternate 3 foot painted line segments and 9 foot gaps.

Permanent pavement marking paint shall be applied at the end of each work week prior to opening the work area to traffic or as approved by the Resident.

Temporary pavement marking paint and temporary pavement markers shall be applied daily prior to opening the work area to traffic during non-work hours or as approved by the Resident.

627.08 Removing Lines and Markings

The last sentence is deleted and is not replaced.

627.09 Method of Measurement

The second and third sentences in the second paragraph are deleted and replaced with the following:

The measurement of broken white lines, both permanent and temporary and dotted white lines, will include the gaps when painted. Temporary painted pavement marking lines will be measured for payment by the linear foot.

627.10 Basis of Payment

This Subsection is deleted and replaced with the following:

The accepted quantity of white or yellow pavement marking lines will be paid at the Contract price per linear foot. This price shall include all labor and materials to furnish, and install the paint line.

The accepted quantity of broken and dotted white pavement marking lines will be paid at the Contract price per linear foot. This price shall include all labor and materials to furnish and install the paint line.

The accepted quantity of temporary white or yellow pavement marking lines will be paid at the Contract price per linear foot. This price shall include all labor and materials to furnish, install and maintain the paint marking.

Payment will be made under:

Pay Item		Pay Unit
627.712	White or Yellow Pavement Marking Line	Linear Foot

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(Temporary Raised Pavement Markers)

627.01 Description

The following sentence is added:

This work shall consist of furnishing, placing and removing temporary raised pavement markers at locations as shown on the Plans or as directed by the Resident.

627.02 Materials

The second paragraph is deleted and replaced with the following:

The temporary raised pavement markers shall be white or yellow one-way markers (Type Tom W-1, Y-1, Grade WZ) as distributed by Davidson Plastics Co. (DAPCO), Kent, WA, or an approved equal. Colors shall conform to 2009 MUTCD requirements.

627.04 General

The following sentences are added:

Temporary raised pavement markers shall be used to delineate travel lanes (BWLL) after placement of the surface course (HMA 12.5 mm).

Temporary raised pavement marker that lose reflectivity, becomes broken, dislodged or missing during the life of the Contract shall be replaced by the Contractor at no additional cost to the Authority.

The spacing and number of temporary pavement markers installed as edge lines shall be the same as shown for the BWLL on the Plans for Temporary Pavement Marking.

627.09 Method of Measurement

The following sentence is added:

Temporary Raised Pavement Markers will be measured by each unit, complete in place, maintained and accepted.

627.10 Basis of Payment

The following paragraphs are added:

The accepted quantity of Temporary Raised Pavement Markers white and/or yellow will be paid for at the Contract price each. This price shall include all labor and materials to furnish, install, maintain, and remove the markers.

Payment will be made under:

Pay Item		Pay Unit
627.812	Temporary Raised Pavement Markers	Each

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(Pavement Marking Tape)
(Pavement Marking Tape – Dotted White Lane Line, 6-inch Width)

627.01 Description

The following sentence is added:

This work shall consist of furnishing and placing reflective pavement marking tape in conformity with the Plans, as specified herein and as directed by the Resident.

The pavement marking tape shall be installed at all locations.

627.02 Materials

The following sentence is added:

For the Broken White Lane Line (BWLL), Pavement Marking Tape shall be 3M Stamark™ High Performance Tape Series 380AW – High Performance pavement marking tape, color- white, six (6) inch width, as manufactured by 3M of St. Paul, Minnesota.

For the Dotted White Lane Line (DWLL), Pavement Marking Tape shall be 3M Stamark™ High Performance Tape Series 380I ES – High Performance pavement marking tape, color- white, six (6) inch wide and twelve (12) inch wide, as manufactured by 3M of St. Paul, Minnesota.

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627.04 General

The following paragraphs are added:

The tape shall be used as a supplemental broken white lane line. The tape shall be installed between the painted Broken White Lane Line (BWLL) spaced eighty (80) foot center to center as shown on the Plans. The length of the tape shall be three (3) feet.

The tape shall also be used to mark a Dotted White Lane Line (DWLL) and shall be installed on parallel deceleration and acceleration lanes at locations as noted in the Plans. On deceleration lanes, the tape shall be installed from the beginning of the full width deceleration lane and shall extend to the theoretical gore markings. On acceleration lanes, the DWLL shall extend from the theoretical gore markings to a point one-half of the total length of the acceleration lane (including the lane taper length). Layout data is noted on the Plans. Dotted

White Lane Line tape shall be three (3) foot in length and shall be spaced nine (9) feet apart. Spacing from the Solid White Lane Line (SWLL) or the Theoretical Gore Markings shall be nine (9) feet.

627.05 Preparation of Surface

The following paragraph is added:

The Contractor shall mill a groove in the pavement for each tape length to be placed ("in-and-out" pattern). Continuous grooving for installation of the tape shall not be allowed. The groove length shall be the required tape length plus 12 inches on both ends. Tape length spacing shall be as shown on the plans. The groove width for inlaid tape pavement marking shall be the pavement marking width plus 1 inch, with a tolerance of ± ¼ inch. The groove shall have a uniform depth of 150 Mils (±20 Mils). Groove position shall be a minimum of 2 inches from the edge of the pavement marking to the longitudinal pavement joint. The bottom of the groove shall have a smooth, flat finished surface. The use of gang stacked Diamond cutting blades is required for asphalt pavement surfaces. The spacers between blade cuts shall be such that there will be less than a 10 mil rise in the finished groove between the blades.

Grooves shall be clean, dry and free of laitance, oil, dirt, grease, paint or other foreign contaminants. The Contractor shall prevent traffic from traversing the grooves, and re-clean grooves, as necessary, prior to application of the primer and pavement marking tape. Depth plates shall be provided by the contractor to assure that desired groove depth is achieved.

Reference is made to 3M Information Folder 5.18 Grooving Applications, May 2011, "Application Guidelines for Pavement Marking in Grooved Pavement Surfaces."

627.09 Method of Measurements

The following paragraph is added:

The quantity of Pavement Marking Tape measured for payment will be the linear feet of tape in place and accepted. The measurement will not include the gaps.

627.10 Basis of Payment

The following paragraphs are added:

The accepted quantity of pavement marking tape will be paid for at the Contract unit price per linear foot which price shall include all material, pavement grooving, equipment, labor and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
627.94	Pavement Marking Tape	Linear Foot
627.941	Pavement Marking Tape – Dotted White Lane Line, 6-inch Width	Linear Foot

SPECIAL PROVISION

SECTION 627

PAVEMENT MARKINGS

(Recessed Pavement Marking Tape)

627.01 Description

The following sentence is added:

This work shall consist of furnishing and placing recessed, reflective pavement marking tape in conformity with the Plans, as specified herein and as directed by the Resident.

627.02 Materials

The following sentence is added:

Pavement Marking Tape for lane designation words, arrows, and stop bars shall be pre-cut by the manufacturer, and shall be 3M Stamark Extended Season Tape Series 380IES– High Performance pavement marking tape, color - white, as manufactured by 3M of St. Paul, Minnesota.

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627.05 Preparation of Surface

The following paragraph is added:

The Contractor shall mill a groove in the pavement for each tape length or area to be placed ("in- and-out" pattern). Continuous grooving for installation of the tape shall not be allowed. The groove length shall be the required tape length plus 12 inches on each end. Tape length spacing shall be as shown on the plans. The groove width for inlaid tape pavement marking shall be the pavement marking width plus 1 inch, with a tolerance of ± ¼ inch. The groove width for inlaid tape pavement areas shall be the pavement marking width plus 3 inches, with a tolerance of ± 1 inch. The groove shall have a uniform depth of 150 Mils (±20 Mils). Groove position shall be a minimum of 2 inches from the edge of the pavement marking to the longitudinal pavement joint.

The bottom of the groove shall have a smooth, flat finished surface. The use of gang stacked Diamond cutting blades is required for asphalt pavement surfaces. The spacers between blade cuts shall be such that there will be less than a 10 mil rise in the finished groove between the blades.

Grooves shall be clean, dry and free of laitance, oil, dirt, grease, paint or other foreign contaminants. The Contractor shall prevent traffic from traversing the grooves, and re-clean grooves, as necessary, prior to application of the primer and pavement marking tape. Depth plates shall be provided by the contractor to assure that desired groove depth is achieved.

Reference is made to 3M Information Folder 5.18 Grooving Applications, September 2019, "Application Guidelines for Pavement Marking in Grooved Pavement Surfaces."

627.09 Method of Measurements

The following paragraph is added:

The accepted quantity of Pavement Markings – Recessed Tape – Words, Arrows, Stop Bars will be measured for payment by the square foot in place and accepted. The square foot areas of the Words and Arrows will be the areas posted in the Pavement Marking section of the MaineDOT Standard Details.

627.10 Basis of Payment

The following paragraphs are added:

The accepted quantity of Pavement Markings – Recessed Tape - Words, Arrows, Stop Bars will be paid for at the Contract unit price per square foot which price shall include all material, pavement grooving, equipment, labor and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
627.944	Pavement Markings – Recessed Tape – Words, Arrows, Stop Bars	Square Foot

SPECIAL PROVISION

SECTION 634

HIGHWAY LIGHTING

(Highway Lighting Panel and Service Upgrades)

634.01 Description

The following paragraphs are added:

This work shall also consist of furnishing and installing highway lighting panel and service upgrades as shown in the plans, including removal of existing components.

634.028 Lighting Cabinet

The following paragraphs are added:

The lighting panelboard, circuitry, and all other components shall be enclosed within a weather tight 1/8 inch thick aluminum NEMA "P-44" type cabinet, with side and back mounting panels, a main door, and a switch compartment door on a 15" aluminum extension base. All exterior seams shall be continuously welded.

The cabinet door shall be a minimum of 80% of the front surface area and shall be hinged on the right side with a continuous hinge. The cabinet doorframe shall be flanged on all four sides with a light switch bracket located in the upper right hand corner. The latching mechanism shall be a 3-point draw roller type made of steel with a center catch. The operating handle shall have provisions for padlocking in the closed position. The main lock shall be a Corbin 1548-1 and furnished with two keys as specified by the Authority. The door shall have a gasket that forms a weather tight seal between the door and the cabinet. The lower portion of the door shall be vented with louvers on the exterior to provide 100 cfm of air flow. A filter held firmly in place by side and bottom brackets shall cover the louver vents on the door's interior. A door restraint shall be furnished to prevent door movement during windy conditions.

The exterior of the cabinet shall be natural aluminum. The interior surface of the cabinet and door, including shelves shall be painted with appliance white alkyd baked enamel paint.

The cabinet power panel shall be installed on the left side of the cabinet 8 inches up from the mounting flange. It shall have a 100-amp panel and a 60-amp main breaker and 24 circuit breakers. A 15 amp breaker shall be used for a switched 240V LED Light Fixtures equal to Canlet LED Vaporproof, Gray, 12W, Wall Mount with Polycarbonate Globe, catalog number: 02-12-LED-W-F-OG-PCG(18). Provide panelboard with breakers and contactors as noted in the contract plans. The switched light shall be mounted on the upper right side. Provide a 480/240V AC line filter and ISLATROL series line filter and lightning/surge suppressor shall be installed on the power panel.

The cabinet trouble light shall be a stainless steel, flex shaft type, 18 inch in length with on/off switch. Trouble light shall be mounted on the right-inside of the cabinet.

The cabinet shall be furnished with a resealable plastic print holder and a set prints showing all wiring and one copy of the highway lighting drawings. Print holder shall be mounted on the inside of the door.

634.092 Method of Measurement

The following paragraphs are added:

Highway Lighting Panel and Service Upgrades shall be measured by the lump sum, complete and in place.

634.093 Basis of Payment

The following paragraphs are added:

Lump Sum payment for Highway Lighting Panel and Service Upgrades shall be full compensation for furnishing and installing the enclosure cabinet, extension base, photocell, panelboard, anchorages, bonding, grounding and ground rods, and all other hardware or incidentals required to complete the work. Lump Sum payment for Highway Lighting Panel and Service Upgrades shall also include all costs for modifications and disconnections or connections to the power source and removal and disposing of the existing light panel.

Foundations shall be paid under Ground Mounted Cabinet Foundation

Payment will be made under:

Pay Item		Pay Unit
634.1612	Highway Lighting Panel and Service Upgrades	Lump Sum

SPECIAL PROVISION

SECTION 634

HIGHWAY LIGHTING

(Conventional Light Standard with LED Fixture)

634.01 Description

The following paragraphs are added:

The work shall consist of verifying the voltage of existing luminaires and circuits.

The work shall consist of installing new conventional light standards with LED fixtures supplied by the Authority, including all appurtenances at locations shown.

Existing lighting shall remain operational at all. Any temporary lighting that may be needed during removing and resetting of existing light standards shall be incidental to the 634 items.

Conventional light standards with LED fixtures supplied by the Authority will be available at the MTA Sign Shop at MM 58 NB.

634.02 General

The following paragraphs are added:

All Contract work shall be overseen by a Maine licensed Master Electrician. The lead person for the field installations shall be either a Maine licensed Master Electrician, or a Maine licensed Journeyman Electrician. Apprentice Electricians, Helper Electricians, Journeyman-In-Training Electricians, and helpers may work under the Master or Journeyman Electrician as permitted under the law.

The Contractor shall comply with National Electrical Code (NFPA 70) as applicable to construction and installation of electrical cable, wire and connectors; provide electrical cable, wire and connectors, which have been listed and labeled by Underwriters Laboratories, and comply with National Electrical Manufacturers Association/Insulated Power Cable Authorities Association Standards publications pertaining to materials, construction and testing wire cable, where applicable.

At a minimum the Contractor shall provide the following field quality control:

- Prior to energizing, check wire for continuity of circuitry and for short circuits with ohmmeter type testing equipment. Correct malfunction when detected.
- Subsequent to wire hook-ups, energize circuitry and demonstrate functioning in accordance with requirements.

634.021 Materials

The following paragraphs are added:

Splices in junction boxes shall be made with Burndy UGS350ULDB Direct Burial/Submersible Splice Wire Range #12 AWG – 350KCMIL connectors for the appropriate wire count only.

This item shall include the providing and installation of all AWG XHHW grade wire for highway lighting, as described herein, including grounding wires (where applicable), for all locations called for in the plans/specifications. All wire installed in conduit must be copper and direct burial grade, suitable for wet locations. Payment for all wiring for highway lighting will be incidental to the 634 items.

634.06 Luminaires

The second paragraph is revised to read:

The connections between the luminaires and connector kits shall be made with number 10 wires AWG copper stranded XHHW, minimum size. A 14-inch-long Teflon sleeve shall be placed over each end of each conductor in the luminaire.

634.092 Method of Measurement

The following sentence is added:

Conventional Light Standard with LED Fixture – Supplied by The Authority will be measured by the single unit, complete in place and accepted.

634.093 Basis of Payment

The following paragraphs are added:

Payment for Conventional Light Standard with LED Fixture – Supplied by The Authority will be made for the accepted quantity at the Contract unit price each. Payment shall be full compensation for loading, transporting light standards from the MTA Sign Shop at MM 58 to the project site, installing the light standard, breakaway device, bracket arm, new LED luminaire, driver, fixture mounted shorting cap at photocell receptacle, as supplied by the Authority and provide disconnect fuse kit, and all incidentals to complete the work.

Payment will be made under:

Pay Item		Pay Unit
634.2312	Conventional Light Standard with LED Fixture - Supplied by The Authority	Each

SPECIAL PROVISION

SECTION 643

TRAFFIC SIGNALS

643.01 Description This work shall consist of the modification of the existing traffic signal at Maine Turnpike Exit 32 and Route 111 in Biddeford. Work shall include relocation of the existing traffic signal cabinet and traffic signal modifications. The work shall include relocating the cabinet, adding a new extension base to the existing cabinet, conduit and all necessary fittings, cables, and components as required to make a fully functional traffic signal and video detection system.

Traffic signal terms shall be in accordance with those defined in the NEC, MUTCD, NESC, NEMA, IMSA and the ITE Standards for traffic control equipment.

This work shall also include modification of the existing raised roadway islands as shown in the Plans, as described herein, and in accordance with the referenced sections of the Standard Specifications.

643.02 Materials A list of the recommended materials required to install the system may be included as an amendment to this specification, but the Authority will give no guarantee as to the completeness of this list. Unless otherwise specified, all equipment and components shall be new and free of defects.

Electrical materials shall meet the standards herein, local and utility codes, and the National Electrical Code, where applicable.

Drawings, manufacturer's specifications and applicable catalog cuts for all materials and components shall be submitted in accordance with Section 105.7 of the Standard Specification within 21 days after award of the Contract. An additional set of final approved documents, to total 6 sets, shall be provided to the Resident.

At the conclusion of the project, two complete sets of cabinet prints (24 inch by 36 inch) and one complete set of user manuals will be provided and left in the cabinet. In addition, 1 complete set of cabinet prints will be provided digitally on a "thumb drive." The cabinet prints will be an exact representation of the wiring, including field wiring, and programming that is actually present in at the time of acceptance. This shall also include a laminated 8.5" x 11" chart posted on the door closest to the controller that states at least the following: phasing diagram, intersection sequence, timing chart for both free and all coordination plans as applicable, and preemption timing, as actually programmed in the controller at the time of acceptance.

643.0211 Traffic Signal Heads New housings shall be constructed of die cast aluminum or polycarbonate with a smooth outer surface. All new or relocated / reconfigured housings shall be equipped with a Quick Change Kit as manufactured by GGI Road and Traffic. Housings shall be adaptable for pedestal, bracket, or rigid mast arm vertical or horizontal mounting. The assembled housing shall be dust proof and moisture proof. Each housing shall be equipped with a hinged door of die cast aluminum or polycarbonate to hold the lens and parts of the optical units. The doors shall be designed to ensure uniform pressure around the doorframe when closed. Doors shall be fastened by two hinged wing nut assemblies or other approved fasteners.

Unless otherwise indicated on the plans, lenses shall be furnished with approved tunnel visors (not less than 10 inches). If either longer visors than those specified above or louvers are deemed necessary, they shall be furnished and installed. If required, louvers shall be attached with a minimum of two (2) machine screws, nuts and washers. The use of "self-tapping" machine screws will not be allowed. All new, relocated or reconfigured traffic signals shall be furnished with a 5 inch backplate with a factory applied 2" diamond grade retroreflective border. Any other signal head mounted on a mast arm that has a signal head being added of modified shall have the existing backplate removed and replaced with a new 5 inch backplate with a factory applied 2" diamond grade retroreflective border installed. Backplates shall be louvered aluminum coated flat black, be fastened with stainless steel hex head slotted screws and a 3/16 inch by 3/4 inch stainless steel fender washer. Signal housings shall be manufactured by the Econolite Group, Inc. or an approved equal.

The assembled housings shall be made up of individual sections fastened together with bolts; the assembly of sectional units shall present a smooth unbroken contour of pleasing appearance. Each end of the housing assembly shall have an opening for a 1-1/2 inch pipe nipple. The area around this opening shall be reinforced and serrated so that lock nuts will seat firmly. The use of "Tri-Studs" to join the signal sections together will not be permitted.

Where five-section "Dog-house" style housings are used, the bottom doors shall be arranged so that the doors open in opposite directions of each other, so that any one door can be opened independently of the others.

One cap shall be supplied with each new assembled housing to act as a cover over the hole in the top to prevent water from entering. Signal housing drain holes shall be unobstructed and oriented to drain. Where this is not possible, RTV or other sealant as approved by the resident shall be used to permanently seal the manufacture's drain holes, and new holes field drilled in as close to the same location and size as the manufacture's drain holes as practicably possible.

Housing adapters for pedestal mounting shall be constructed of cast iron except as noted below. They shall be adjustable with serrated surfaces to permit the housing to be locked in the desired horizontal position. The adapters shall be secured to the bottom of the housing by means of a close nipple, shall slip fit at least 7 inches over a standard traffic signal post of 4 inches in diameter and shall be secured to the post by a minimum of four set screws. The adaptors shall also be equipped with a means to support the top of the signal housing. Adapters shall contain raceways from the housing to the post to protect the wires from the elements.

Mast arm brackets shall be cabled with "Astro-Brac" by Pelco or an approved equal. The mounting of the "doghouse" style signal to the pedestal pole shall made with a banded "Astro-Brac" by Pelco or an approved equal. Tubes for the brackets shall be equipped with a gusset oriented toward the mast arm to facilitate running communication and power cable, this gusset shall be sealed with the manufacture's supplied sealing membrane. The tube itself shall be held in place by the use of a hinged clamp, Pelco AG-3055 or approved equal. Except for the pedestal pole mounted signal, the use of "u-bolt" style clamps will not be permitted.

Span wire hardware shall consist of hangers with a cast nipple. "Tri-Stud" hangers will not be permitted.

Light Emitting Diode (LED) lamps shall have a regulated power supply designed to electrically protect the diodes. The lamp shall be watertight and sealed to eliminate

contaminants. The lamp shall be capable of operating at ambient air temperatures of -40° F to 140° F. LED's shall be a 120 Volt AC LED module as manufactured by Trastar or an approved equal. All LED lamps shall have a date code not to exceed 6 months prior to the start of construction.

Each LED module shall be wired with two leads which shall terminate at the terminal block in each signal head. Separate leads shall be used to wire the block to the base. Leads shall be minimum 18 AWG stranded wire with spade type copper terminal ends. All colors shall be bright and clearly defined and cover the insulation the entire length of the lead. The color of these leads shall be as follows:

(a) From the receptacle behind the red or "Don't Walk" lens: one red wire and one white wire with an optional red tracer;

(b) From the receptacle behind the yellow lens: one yellow wire and one white wire with an optional yellow tracer;

(c) From the receptacle behind the green or "Walk" lens: one green wire and one white wire with an optional green tracer;

(d) From the receptacle behind the green arrow: one blue wire and one white wire with an optional blue tracer.

LED lamp life shall be a minimum of 100,000 hours of continuous operation. Power consumption for 12" indications including power supply shall not exceed 10 W.

LED modules shall conform to the standards set forth by the Institute of Transportation Engineers and shall be of the color indicated, circular in shape, with a visible diameter of approximately 12 inches.

All existing traffic signals and LEDs to remain shall be inspected before any work commences to ensure that the signals are fully functional. The signals will be inspected again at the completion of the project and any indications found to be degraded shall be replaced by the contractor at no cost to the Authority. Both of the pre-project and post project testing will be performed in the presence of a representative of the Authority.

643.03 Traffic Signal Poles, Mast Arms, and Pedestals Section 720 of the Standard Specifications shall apply unless otherwise noted.

Steel Structures. Section 720.04 of the Standard Specifications shall apply.

Concrete foundation shall be concrete Class AAA meeting the requirements of Section 502 of the Standard Specifications - Structural Concrete. Reinforcing steel shall meet the requirements of Section 503 of the Standard Specifications – Reinforcing Steel. The foundations shall be as shown on the plans.

Anchor bolts. Section 720.07 of the Standard Specifications shall apply.

Mast-arm structure and foundation (when required) design calculations and shop drawings shall be submitted for documentation in accordance with Section 105.7 of the Standard Specifications.

Wood Utility Poles. Section 720.10 of the Standard Specifications shall apply.

Messenger, tether and guy cable shall be a minimum seven strand, 5/16 inch diameter wire with a breaking strength of 8,000 pounds, double galvanized in accordance with AASHTO M 111.

Aluminum Structures. Sections 720.01 and 720.02 of the Standard Specifications shall apply.

Strain poles, pedestal poles and mast arm poles shall be erected in a vertical position, with a maximum deviation from the vertical of ¼ inch in 5 feet using the leveling nuts provided with the anchor bolts. Once the poles have been plumbed, the top nuts shall be tightened by bringing the nut to a snug tight condition using the full effort of a worker using a spud wrench or compatible tool. After all nuts have been brought to a snug, tight condition, each nut shall be tightened an additional one-third turn, using an impact wrench, torque wrench or large crescent wrench. A minimum of two full threads shall project beyond the outside face of the nut. Nuts and bolts, other than anchor bolts, shall also be tightened by the above procedure.

643.04 Traffic Signal Controllers and Cabinets. The existing controller and cabinet shall be relocated to a new foundation. A new 12-inch extension base will be added to the existing cabinet at this time. Silicone or other sealant as approved by the Authority shall be applied between the mating surface of the cabinet and new extension base, and the mating surface of the new extension base and foundation.

643.041 Cabinet Component Spares The following will be provided as spare equipment:

1 BIU and 3 Load Switches.

643.05 Fire Pre-emption. The existing fire pre-emption system at the intersection shall be maintained. The fire preemption system shall be tested before any work commences to ensure that the system is fully functional. The system will be tested again at the completion of the project and any components found to be non-functioning shall be replaced by the contractor at no cost to the Authority. Both the pre-project and post project testing will be performed in the presence of a representative of the Authority.

The confirmation light shall be programmed to be operated by a load switch (ie channel #9 Yellow).

Optical detector locations shall be verified by the Authority to assure optimum reception. Optical detector cable shall run unspliced from the optical detector head to the controller cabinet.

Each optical detector lead-in cable shall be marked with plastic tape as per section 643.10 “Phase color code” of this special provision. The fire preemption markings shall correspond to the following chart associating the fire preemption call with its corresponding phase:

PREEMPTION PHASE CODE

Preempt 3	Phases 1 & 6
Preempt 4	Phases 2 & 5
Preempt 5	Phases 3 & 8
Preempt 6	Phases 4 & 7

643.06 Video Detection. The existing video detection shall be reused. The video detection system shall be tested before any work commences to ensure that the system is fully functional. The system will be tested again at the completion of the project and any components found to be non-functioning shall be replaced by the contractor at no cost to the Authority. Both of the pre-project and post project testing will be performed in the presence of a representative of the Authority.

643.07 Contacts. All contacts used in connection with interval indications shall be of pure coin silver or equivalent, and shall be capable of breaking and carrying 15 A at 125 V alternating current. The contacts shall be readily accessible and capable of being replaced in the timer without the use of any tools other than pliers and screwdriver.

643.08 Meter Pedestals. Power will be provided by the Maine Turnpike Authority.

643.09 Radio and television interference. Electrical equipment shall be prevented from interfering with radio and television reception.

643.10 Cable and Wire. Cable shall be plastic covered cable meeting the applicable requirements of the International Municipal Signal Association (IMSA) 20-1 specifications. The conductor color coding shall not be by means of printed code. All wiring shall be new. Reuse of existing cable will not be allowed. Actual color coding shall be used. Wiring will not be paid for separately but will be incidental to the respective signal item. The minimum size wire for the circuits shall be as follows:

	Minimum A.W.G. #
(a) Service to Cabinet	2 Stranded (XHHW)
(b) Cabinet to Pole or Pedestal	12 Stranded (XHHW)
(c) Cabinet to Luminaire	10 Stranded (XHHW)
(c) Pole or Pedestal to Receptacles	14 Stranded (XHHW)
(d) Equipment Grounding Conductor	8 Stranded (XHHW)

Each lead-in cable shall be marked with plastic tape corresponding to the following color code to identify which phase it pertains to at the splice(s) in both the pull box(es) and in the cabinet.

PHASE COLOR CODE

Phase 1	1 Blue
Phase 2	1 Green
Phase 3	1 Yellow
Phase 4	1 Red
Phase 5	2 Blue
Phase 6	2 Green
Phase 7	2 Yellow
Phase 8	2 Red

Traffic signal conduit, pull boxes, frames, and covers shall conform to Section 626 of the Standard Specifications. Conduit for all lines shall be 3 inch in diameter unless noted on the plans. Unless otherwise noted, all conduits shall be schedule 80 PVC.

643.11 Painting. Prior to erection and assembly, if not manufactured of polycarbonate material, the entire traffic or pedestrian signal housing and visors shall be painted with an approved zinc-rich primer and a finish enamel coat as noted below. All paint shall conform to Section 708 of the Standard Specifications. The following colors of enamel shall be used:

(a) Controller Cabinet	Outside: Natural Aluminum
(b) Housings	Yellow (3); Door Face: Black (2)
(c) Visors	Inside: Black (2); Outside: Yellow (3)

	Federal No.
(1) Green Enamel =	H8-577
(2) Black Enamel =	17038
(3) Federal Yellow Enamel =	13538

After the signals have been completely installed, two coats of enamel shall be applied to all unpainted or scratched surfaces after the surface has been lightly sanded to remove gloss.

643.12 Interconnect. Interconnect will be accomplished wirelessly with equipment by Ubiquiti. The contractor will only be required to mount, pull and terminate the CAT 5E cable and aim the radio to a point directed by the Authority or resident. The Cat 5E cable shall be shielded and come with an integral drain wire. The Authority will supply the wireless interconnect equipment. The equipment shall be installed to the manufacturer's specification, and field located by the Authority or resident. All final setup and testing will be done by the Authority.

643.13 Construction Requirements. All traffic signal and electrical installations shall comply with the requirements specified herein, local and utility codes, MUTCD, and the National Electrical Code (NEC), latest edition. All employees of the signal subcontractor shall have an

OSHA 10 Hour Certification. The signal subcontractor shall have at least one representative onsite at all times with an IMSA Traffic Signal Level 2 Field certification.

A preconstruction meeting with the Contractor, Signal Subcontractor, Engineer and Maine Turnpike Authority representative shall be arranged not less than 3 days prior to the start of signal installation, to resolve any problems.

Upon commencement of any signal work within the intersection, the contractor will be responsible for any ongoing trouble calls at the intersection. There will be no separate payment for this work but shall be considered incidental to the traffic signal modification item.

Any operating traffic signal shall be left in a non-flash operating condition at the end of each workday, with or without detection.

The signal Subcontractor shall notify the Maine Turnpike Authority ITS / Toll Manager no less than 3 days prior to final inspection of signal installation.

Each new signal head or sign or any signal head or sign mounted on a mast arm that is being disturbed shall be installed with or have added a 1/8 inch diameter aircraft cable, looped around the mast arm and mast arm bracket, as a safety device to prevent the signal head from falling. Cable ends shall be fastened by two opposing "U" clamps. When suspended by this cable, the top of the signal head or sign shall be no more than 6 inches below the bottom of the mast arm.

All conduit lines necessary shall be constructed for the proper operation of the signals and shall conform to Section 626 of the Standard Specifications.

All conduits terminating in the cabinet, mast arms or junction boxes shall be sealed.

Concrete foundations with anchor bolts to secure the traffic signal structures, flasher or controller cabinets, and meter pedestals, shall be installed at the locations specified on the plans. The concrete foundation for the controller cabinet shall be raised a minimum height of 3 inches up to a maximum height of 18 inches above the finished surface as directed by the Resident. Chamfer strips shall be used on all signal controller cabinet foundations. Forms shall be inspected before concrete is placed. The use of a precast foundation for the controller cabinet will not be permitted.

Poles shall not be mounted on the leveling nuts until the concrete has cured for at least 7 days or attained a minimum of at least 80 percent of its design compressive strength.

Provide protection for wiring from rodents and other elements as approved by the Engineer and/or as shown on the Plans.

Prior to placing the controller cabinet on its foundation, silicone sealant shall be applied to the area of contact.

The Contractor shall use bolt pattern templates when setting mast-arm anchor bolts, signal pedestal bolts and controller cabinet mounting bolts. The templates shall remain in place for a minimum of 24 hours. The use of drilled anchors shall not be permitted.

Wood poles shall be placed in the ground to a depth of 20% of their overall length, with a maximum deviation from the vertical of ¼ inch in 5 feet.

Wood poles with a back-guy cable shall be placed in the ground to a depth of 20% of their overall length. Poles shall be back-guyed using a 10-inch expanding anchor with a 3/4 inch by 96-inch anchor rod. Thimble eyes of anchor rods shall extend 12 inches above finish ground. Cable used for back-guying shall be attached to the anchor rod by a short bail automatic type grip and to the guy hook on the pole by a preformed type grip. The pole shall be drilled 14 inches from top and a 5/8 inch oval eyebolt installed with one square flat washer and square nut on the messenger side and one square washer, square nut and guy hook on the opposite side. Any guy wire, messenger wire or span wire installations done on Utility Company poles shall follow Utility Company requirements.

643.131 Backfill for foundations. Unless otherwise ordered, backfill for foundations shall be material conforming to the requirements of Section 203.26 of the Standard Specifications – Gravel Borrow.

643.132 Service and Meter Box. Electrical Service for the signals will be provided by the Authority. The contractor shall run the needed conduit and junction boxes from the existing utility building on the south side of the toll plaza. The contract will coordinate with the Authority to locate the clean and dirty power panels from which to supply the signal and luminaries respectively.

Clean and dirty circuits may be run in a single conduit provided the conduit is not filled beyond capacity shall be colored distinctly apart and conform to section 643.10 Cable and Wire of this special provision

643.133 Signal Cable and Wire Installation. The Contractor shall furnish and install sufficient cable and wire to operate the system properly and at least 4 spare conductors in each cable run shall be provided. Pulling a separate cable to achieve the required number of spares will not be allowed.

Each approach to the intersection shall have a dedicated cable run from the controller cabinet.

No more than one cable shall be permitted in a conduit except to eliminate splices in pull boxes. When more than one cable is permitted the area of combined cables shall not exceed 30 percent of the inside area of the conduit.

Messenger cable shall run unspliced between poles and shall be installed with a *5* percent sag in the wire when measured from the point of attachment to the middle of span. The cable shall be attached to the pole eyebolt by a preformed type grip on one end and an automatic type grip on the opposite end. Messenger cable shall be grounded to the back-guy cable.

Signal bases, housings and controllers shall be furnished and installed as required. All structures and housings shall be plumb after erection.

Multiple housings on a single post shall be grouped together using 1-1/2 inch galvanized pipe and 1-1/2 inch galvanized rail fittings. All attachments to the posts shall be made by means of adapters conforming to the following. Housing adapters for pedestal mounting shall be constructed of cast iron. They shall be adjustable with serrated surfaces to permit the housing to be locked in the desired horizontal position. The adapters shall be secured to the bottom of the housing by means of a close nipple, shall slip fit at least 7 inch over a standard traffic signal post

of 4 inches in diameter and shall be secured to the post by a minimum of four set screws. Adapters shall contain raceways from the housing to the post to protect the wires from the elements. The center of all housings shall be in the same horizontal plane.

Miscellaneous electrical equipment. All additional electrical fittings, service conduit, switches, fuses, traffic signal bulbs, and such other hardware as is necessary to properly and securely install the equipment shall be furnished. All electrical fittings shall be weatherproof.

Wiring and connections. All connections shall be spliced, soldered, compounded, and taped. The use of wire nuts will not be permitted. A minimum of 18 inches of wire will extend outside of the mast arm handhole. The following color code shall be used:

(a) Red Wire	Red, Artery
(b) Orange Wire	Yellow, Artery
(c) Green Wire	Green. Artery
(d) Red with tracer	Red, Side Street
(e) Orange with tracer	Yellow, Side Street
(f) Green with tracer	Green, Side Street
(g) White	Neutral or DC Negative for all signals
(h) Blue	All steady burning arrows
(i) Blue with tracer	Intermittent arrows
(j) Remaining	Push buttons and spares

Note: The white wire shall be used for all neutral or DC Negative connections and shall be connected to the service ground.

No street lighting splices will be permitted in the mast-arm shaft. Splices for street lighting and lightning arrestors shall be located inside the nearest streetlight pull box. Street lighting shall be connected to a dedicated breaker in the cabinet.

Ground connections. All installations and equipment shall be bonded and grounded to the service ground rod in accordance with the requirements of the electric power company.

Each signal cable run shall be installed with one green plastic covered copper ground wire to which all equipment shall be bonded in accordance with standard practice. Each base and post, cabinet, and any other component that would be considered a part of the signal system shall be bonded to the ground wire. This ground wire shall be connected to the ground rod at the controller cabinet.

643.134 Installation of signals and equipment. The signals and equipment shall be installed by competent workmen or the manufacturer's representative.

Prior to placing the signals in operation, the signal housing shall be hooded with approved non-transparent material or turned to clearly indicate that the signals are not in operation.

Signs mounted on the signals not applicable to construction conditions shall be covered as specified in Section 645 of the Standard Specifications.

All material including poles, foundations, fittings and cable shall be supplied and installed to make a complete operative installation.

Any new or relocated signs installed on signal arms shall be mounted with "Astro Sign Bracs" at a right angle to the roadway. Signs mounted on span wire shall be mounted with Pelco "Span Wire Sign Hangar Assemblies," or approved equal. Tubes, where used-for the brackets, shall be held in place by the use of a hinged clamp, Pelco AG-3055 or approved equal. The use of "u-bolt" style clamps will not be permitted.

All male threads, ie bolts, machine screws, threaded hubs, nipples, hand hole cover bolts, etc. shall have a coating of anti-seize compound as approved by the resident. The compound shall be field applied before the affected parts are assembled.

The contractor or signal subcontractor shall be responsible for providing the Authority a complete set of "As-Built" plans for the intersections at the completion of the project.

643.135 Remove and Reset Mast Arm. The existing mast arms shall be removed and reset on new foundations as per the plans and these specifications.

643.14 Operation. The Contractor shall commence the operation of the signal system only when permitted by the Engineer. Unless otherwise noted, signals shall be placed in flash a minimum of 1 week before the planned start of operation. New signals shall be made operational between the hours of 10:00 AM and 2:00 PM unless approved by the Engineer. A manufacturer's representative shall be present for when the signals are made operational.

Operating sequences shall be as shown on the plans or as ordered.

Operating sequences shall be verified by testing.

The Contractor shall provide a qualified technician to thoroughly review and confirm that the system is satisfactory and operational as designed. Prior to the signals being made operational, the Contractor shall have a review with the Authority's Toll / ITS Manager and local officials (including Fire Department technician) to review and comment upon the system.

643.15 Warranty. Upon completion of the project, the Contractor shall forward to the Authority all warranties to the purchaser that the equipment which has been installed hereunder shall be free from defects in materials, workmanship and title, and shall be of the kind and quality designated or described in the Contract. The foregoing warranty supersedes all other warranties whether written, oral, or implied. If it appears within 24 months from the date of Acceptance of the work that the equipment installed hereunder does not meet the warranties specified above, the Contractor shall promptly correct any defect or nonconformance with the specifications. This warranty does not relieve the Contractor of the requirement of Section 106 of the Standard Specifications.

643.16 Method of Measurement. The traffic signal modification and remove and reset mast arm will be measured as a lump sum unit. Pedestal Poles will be measured by each unit complete and accepted in place.

All work required to modify the raised roadway islands as shown on the plans will not be measured for payment separately but shall be incidental to the traffic signal modification pay item.

643.17 Basis of Payment. The accepted quantity of traffic signals modification will be paid for at the Contract lump sum price complete in place. The lump sum price shall also be full compensation for all materials, equipment and incidentals necessary to complete the raised roadway island modifications including, but not limited to, sawing bituminous pavement, common excavation, gravel and subbase material, resetting type 5 curb, bituminous tack coat, hot mix asphalt and all necessary incidentals to provide a completed raised roadway island

The accepted quantity of remove and reset mast arm will be paid for at the Contract lump sum price complete and in place. Wiring for the reset mast arms will be incidental to the lump sum item and wiring shall be continuous from mast arm signal heads to signal cabinet.

Payment for Pedestal Poles will be made at the contract unit price each.

Payment will be full compensation for supplying all materials, equipment and incidentals required to complete the work. When an item of conduit appears in the Contract, conduit for traffic signals will be paid for under Section 626 of the Standard Specification. When no item for conduit appears in the Contract, any conduit required will be incidental.

All miscellaneous electrical equipment required shall be subsidiary.

Payment will be made under:

Pay Item		Pay Unit
643.71	Traffic Signal Modification at: Exit 32 and Route 111	Lump Sum
643.9111	Remove and Reset Mast Arm: MA4 – Exit 32	Lump Sum
643.9112	Remove and Reset Mast Arm: MA3 – Exit 32	Lump Sum
643.9113	Remove and Reset Mast Arm: Exit 42	Lump Sum
643.92	Pedestal Pole	Each

SPECIAL PROVISION

SECTION 643

TRAFFIC SIGNALS

SIGNAL TIMING CHARTS

Intersection 1: Old Dog Lane and Mariner Way

Proposed Signal Phasing - Old Dog Lane and Mariner Way												
		Event Plan	~~Ø1~~	~~Ø2~~	~~Ø3~~	~~Ø4~~	~~Ø5~~	~~Ø6~~	~~Ø7~~	~~Ø8~~	~~Ø9~~	Offset	
	Location		EBL	WBTR	SBLTR	-	WBL	EBTR	-	NBLTR	-	Phase	Value
			Rte 111	Rte 111	Old Dog	-	Rte 111	Rte 111	-	Mariner	-	-	-
	Initial Interval		5	10	5	-	5	10	-	5	-	-	-
	Vehicle Extension 1		3	3	3	-	4	3	-	3	-	-	-
	Vehicle Extension 2		-	-	-	-	-	-	-	-	-	-	-
Green Time	Max 1 - Coord AM	4	5	36	6	-	7	34	-	6	-	6	15
	Max 2 - Coord PM	5	4	55	7	-	23	36	-	27	-	2	116
	Max 3 - Coord Sa/Su	6	5	52	6	-	26	31	-	30	-	2,6	8
	Max 4 - Uncoord AM	1	5	26	6	-	5	26	-	6	-	-	-
	Max 5 - Uncoord PM	2	4	34	6	-	18	20	-	13	-	-	-
	Max 6 - Uncoord Sa/Su	3	7	31	6	-	19	19	-	19	-	-	-
	Max 7 - Uncoord Mid	100	13	24	13	-	13	24	-	23	-	2,6	-
Splits	Max 1 - Coord AM	4	12	42	13	-	14	40	-	13	-	-	-
	Max 2 - Coord PM	5	11	61	14	-	30	42	-	34	-	-	-
	Max 3 - Coord Sa/Su	6	12	58	13	-	33	37	-	37	-	-	-
	Max 4 - Uncoord AM	1	12	32	13	-	12	32	-	13	-	-	-
	Max 5 - Uncoord PM	2	11	40	13	-	25	26	-	20	-	-	-
	Max 6 - Uncoord Sa/Su	3	14	37	13	-	26	25	-	26	-	-	-
	Max 7 - Uncoord Mid	100	20	30	20	-	20	30	-	30	-	-	-
	Dynamic Max		-	-	-	-	-	-	-	-	-	-	-
	Dynamic Step		-	-	-	-	-	-	-	-	-	-	-
	Yellow		4	4	4	-	4	4	-	4	-	-	-
	All Red		3	2	3	-	3	2	-	3	-	-	-
	Walk/Don't Walk		-	4	-	-	-	-	-	-	-	-	-
	Ped Clearance		-	16	-	-	-	-	-	-	-	-	-
	Flash		R	Y	R	-	R	Y	-	R	-	-	-
	Recall		-	SOFT	-	-	-	SOFT	-	-	-	-	-
	Overlap		-	-	-	-	A	B	-	A,B		-	
	Detector		PR	PR	PR	-	PR	PR	-	PR	-	-	-
	Dual Entry		No	Yes	No	-	No	Yes	-	No	-	-	-

Event	Start	M-F	Sa	Su
1	0:00	4	4	4
2	5:00	1	1	-
3	9:00	5	3	6
4	15:00	2	2	-
5	19:00	5	5	5

Intersection 2: Biddeford Gateway (Home Depot)

	Proposed Signal Phasing - Biddeford Gateway (Home Depot)												
		Event Plan	~~Ø~~1	~~Ø~~2	~~Ø~~3	~~Ø~~4	~~Ø~~5	~~Ø~~6	~~Ø~~7	~~Ø~~8	~~Ø~~9	Offset	
	Location		EBL	WBTR	-	SBLTR	WBL	EBTR	-	NBLTR	-	Phase	Value
			Rte 111	Rte 111	-	Gateway	Rte 111	Rte 111	-	Church	-	-	-
	Initial Interval		5	10	-	5	5	10	-	5	-	-	-
	Vehicle Extension 1		3	4.5	-	3	3	4.5	-	3	-	-	-
	Vehicle Extension 2		-	-	-	-	-	-	-	-	-	-	-
Green Time	Max 1 - Coord AM	4	5	36	-	7	5	36	-	7	-	6	33
Green Time	Max 2 - Coord PM	5	5	71	-	14	5	71	-	5	-	2	100
Green Time	Max 3 - Coord Sa/Su	6	7	59	-	22	5	61	-	7	-	2,6	114
Green Time	Max 4 - Uncoord AM	1	5	21	-	7	5	21	-	7	-	-	-
Green Time	Max 5 - Uncoord PM	2	5	40	-	7	9	36	-	7	-	-	-
Green Time	Max 6 - Uncoord Sa/Su	3	5	26	-	7	5	26	-	7	-	-	-
Green Time	Max 7 - Uncoord Mid	100	13	24	-	24	13	24	-	24	-	-	-
Splits	Max 1 - Coord AM	4	12	42	-	13	12	42	-	13	-	-	-
Splits	Max 2 - Coord PM	5	12	77	-	20	12	77	-	11	-	-	-
Splits	Max 3 - Coord Sa/Su	6	14	65	-	28	12	67	-	13	-	-	-
Splits	Max 4 - Uncoord AM	1	12	27	-	13	12	27	-	13	-	-	-
Splits	Max 5 - Uncoord PM	2	12	46	-	13	16	42	-	13	-	-	-
Splits	Max 6 - Uncoord Sa/Su	3	12	32	-	13	12	32	-	13	-	-	-
Splits	Max 7 - Uncoord Mid	100	20	30	-	30	20	30	-	30	-	-	-
	Dynamic Max		-	-	-	-	21	-	-	20	-	-	-
	Dynamic Step		-	-	-	-	3	-	-	2	-	-	-
	Yellow		4	4	-	4	4	4	-	4	-	-	-
	All Red		3	2	-	2	3	2	-	2	-	-	-
	Walk/Don't Walk		-	-	-	-	-	-	-	-	-	-	-
	Ped Clearance		-	-	-	-	-	-	-	-	-	-	-
	Flash		R	Y	-	R	R	Y	-	R	-	-	-
	Recall		-	SOFT	-	-	-	SOFT	-	-	-	-	-
	Overlap		-	B		B	A	-	-	A	-	-	-
	Detector		PR	PR	-	PR	PR	PR	-	PR	-	-	-
	Dual Entry		No	Yes	-	No	No	Yes	-	No	-	-	-

Event	Start	M-F	Sa	Su
1	0:00	4	4	4
2	5:00	1	1	6
3	9:00	5	3	-
4	15:00	2	2	-
5	19:00	5	5	5

Intersection 3: Walmart and Exit 32 Park and Ride

	Proposed Signal Phasing - Walmart and Exit 32 Park and Ride												
		Event Plan	~~Ø~~1	~~Ø~~2	~~Ø~~3	~~Ø~~4	~~Ø~~5	~~Ø~~6	~~Ø~~7	~~Ø~~8	~~Ø~~9	Offset	
	Location		EBL	WBTR	-	SBLTR	WBL	EBTR	-	NBLTR	-	Phase	Value
			Rte 111	Rte 111	-	32 PnR	Rte 111	Rte 111	-	Walmart	-	-	-
	Initial Interval		5	10	-	5	5	10	-	5	-	-	-
	Vehicle Extension 1		3	3	-	3	3	3	-	3	-	-	-
	Vehicle Extension 2		-	-	-	-	-	-	-	-		-	-
Green Time	Max 1 - Coord AM	4	7	42	-	12	9	40	-	12	-	2,6	70
Green Time	Max 2 - Coord PM	5	5	77	-	19	16	66	-	19	-	2,6	78
Green Time	Max 3 - Coord Sa/Su	6	5	68	-	28	23	50	-	28	-	2,6	66
Green Time	Max 4 - Uncoord AM	1	5	14	-	7	5	14	-	7	-	-	-
Green Time	Max 5 - Uncoord PM	2	5	29	-	7	9	25	-	7	-	-	-
Green Time	Max 6 - Uncoord Sa/Su	3	5	27	-	9	8	24	-	9	-	-	-
Green Time	Max 7 - Coord Mid	7	6	56	-	29	19	43	-	29	-	2,6	20
Green Time	Max 8 - Coord Mid	100	13	24	-	24	13	24	-	24	-	2,6	0
Splits	Max 1 - Coord AM	4	14	48	-	18	16	46	-	18	-	-	-
Splits	Max 2 - Coord PM	5	12	83	-	25	23	72	-	25	-	-	-
Splits	Max 3 - Coord Sa/Su	6	12	74	-	34	30	56	-	34	-	-	-
Splits	Max 4 - Uncoord AM	1	12	20	-	13	12	20	-	13	-	-	-
Splits	Max 5 - Uncoord PM	2	12	35	-	13	16	31	-	13	-	-	-
Splits	Max 6 - Uncoord Sa/Su	3	12	33	-	15	15	30	-	15	-	-	-
Splits	Max 7 - Coord Mid	7	13	62	-	35	26	49	-	35	-	-	-
Splits	Max 8 - Coord Mid	100	20	30	-	30	20	30	-	30	-	-	-
	Dynamic Max		-	-	-	-	-	-	-	-	-	-	-
	Dynamic Step		-	-	-	-	-	-	-	-	-	-	-
	Yellow		4	4	-	4	4	4	-	4	-	-	-
	All Red		3	2	-	2	3	2	-	2	-	-	-
	Walk/Don't Walk		-	-	-	-	-	-	-	-	-	-	-
	Ped Clearance		-	-	-	-	-	-	-	-	-	-	-
	Flash		R	Y	-	R	R	Y	-	R	-	-	-
	Recall		-	SOFT	-	-	-	SOFT	-	-	-	-	-
	Overlap			-	-	-	A	-	-	A	-	-	-
	Detector		PR	PR	-	PR	PR	PR	-	PR	-	-	-
	Dual Entry		No	Yes	-	Yes	No	Yes	-	Yes	-	-	-

Event	Start	M-F	Sa	Su
1	0:00	4	4	4
2	5:00	1	1	6
3	9:00	7	3	-
4	15:00	2	2	-
5	19:00	5	5	5

Intersection 4: Exit 32 Ramp and Biddeford Connector

	Proposed Signal Phasing - Exit 32 Ramp and Biddeford Connector												
		Event Plan	~~Ø1~~	~~Ø2~~	~~Ø3~~	~~Ø4~~	~~Ø5~~	~~Ø6~~	~~Ø7~~	~~Ø8~~	~~Ø9~~	Offset	
	Location		EBL Rte 111	WBTR Rte 111	SBL Exit 32	NBTR Cnctr	WBL Rte 111	EBTR Rte 111	NBL Cnctr	SBTR Exit 32	-	Phase -	Value -
	Initial Interval		10	10	10	10	5	10	10	10	-	-	-
	Vehicle Extension 1		3	3	3	3	3	3	3	3	-	-	-
	Vehicle Extension 2		5	4	3	3	5	4	3	3		-	-
Green Time	Max 1 - Coord AM	4	16	14	12	11	8	22	11	12	-	1,6	0
Green Time	Max 2 - Coord PM	5	18	26	32	17	12	32	18	31	-	3	0
Green Time	Max 3 - Coord Sa/Su	6	23	35	16	19	14	44	19	16	-	2,6	0
Green Time	Max 4 - Uncoord AM	1	15	15	12	11	8	22	11	12	-	-	-
Green Time	Max 5 - Uncoord PM	2	18	28	25	22	12	34	18	29	-	-	-
Green Time	Max 6 - Uncoord Sa/Su	3	15	26	16	11	7	34	16	11	-	-	-
Green Time	Max 7 - Coord Mid	7	16	14	12	11	8	22	11	12	-	2,6	0
Splits	Max 1 - Coord AM	4	23	20	19	18	15	28	18	19	-	-	-
Splits	Max 2 - Coord PM	5	25	32	39	24	19	38	25	38	-	-	-
Splits	Max 3 - Coord Sa/Su	6	30	41	23	26	21	50	26	23	-	-	-
Splits	Max 4 - Uncoord AM	1	22	21	19	18	15	28	18	19	-	-	-
Splits	Max 5 - Uncoord PM	2	25	34	32	29	19	40	25	36	-	-	-
Splits	Max 6 - Uncoord Sa/Su	3	22	32	23	18	14	40	23	18	-	-	-
Splits	Max 7 - Coord Mid	7	23	20	19	18	15	28	18	19	-	-	-
	Dynamic Max		0	35	30	0	0	0	0	0	-	-	-
	Dynamic Step		0	2	2	0	0	0	0	0	-	-	-
	Yellow		4	4	4	4	4	4	4	4	-	-	-
	All Red		3	2	3	3	3	2	3	3	-	-	-
	Walk/Don't Walk		-	-	-	-	-	-	-	-	-	-	-
	Ped Clearance		-	-	-	-	-	-	-	-	-	-	-
	Flash		R	Y	R	R	R	Y	R	R	-	-	-
	Recall		-	SOFT	-	-	-	SOFT	-	-	-	-	-
	Overlap		B	C	B,C	A	A					-	
	Detector		PR	PR	PR	PR	PR	PR	PR	PR	-	-	-
	Dual Entry		No	Yes	No	No	No	Yes	No	No	-	-	-

Event	Start	M-F	Sa	Su
1	0:00	4	4	4
2	5:00	1	1	-
3	9:00	7	3	6
4	15:00	2	2	-
5	19:00	5	5	5

Intersection 5: Irving and Ocean State Job Lot

Proposed Signal Phasing - Irving/Ocean State Job Lot												
		Event Plan	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Offset	
	Location		EBL	WBTR	-	SBLTR	WBL	EBTR	-	NBLTR	-	Phase	Value
			Rte 111	Rte 111	-	Ocean St	Rte 111	Rte 111	-	Irving	-	-	-
	Initial Interval		5	10	-	5	5	10	-	5	-	-	-
	Vehicle Extension 1		3	3	-	3	3	3	-	3	-	-	-
	Vehicle Extension 2		-	-	-	-	-	-	-	-		-	-
Green Time	Max 1 - Coord AM	4	7	40	-	14	8	39	-	14	-	2,6	73
Green Time	Max 2 - Coord PM	5	7	70	-	24	7	70	-	24	-	2,6	82
Green Time	Max 3 - Coord Sa/Su	6	8	67	-	26	11	64	-	26	-	2,6	108
Green Time	Max 4 - Uncoord AM	1	5	22	-	9	5	22	-	9	-	-	-
Green Time	Max 5 - Uncoord PM	2	5	26	-	10	5	26	-	10	-	-	-
Green Time	Max 6 - Uncoord Sa/Su	3	5	27	-	9	5	27	-	9	-	-	-
Green Time	Max 7 - Coord Mid	7	6	59	-	26	6	59	-	26	-	2,6	17
Green Time	Max 8 - Coord Mid	100	13	24	-	24	13	24	-	24	-	2,6	0
Splits	Max 1 - Coord AM	4	14	46	-	20	15	45	-	20	-	-	-
Splits	Max 2 - Coord PM	5	14	76	-	30	14	76	-	30	-	-	-
Splits	Max 3 - Coord Sa/Su	6	15	73	-	32	18	70	-	32	-	-	-
Splits	Max 4 - Uncoord AM	1	12	28	-	15	12	28	-	15	-	-	-
Splits	Max 5 - Uncoord PM	2	12	32	-	16	12	32	-	16	-	-	-
Splits	Max 6 - Uncoord Sa/Su	3	12	33	-	15	12	33	-	15	-	-	-
Splits	Max 7 - Coord Mid	7	13	65	-	32	13	65	-	32	-	-	-
Splits	Max 8 - Coord Mid	100	20	30	-	30	20	30	-	30	-	-	-
	Dynamic Max		-	-	-	-	-	-	-	-	-	-	-
	Dynamic Step		-	-	-	-	-	-	-	-	-	-	-
	Yellow		4	4	-	4	4	4	-	4	-	-	-
	All Red		3	2	-	2	3	2	-	2	-	-	-
	Walk/Don't Walk		-	-	-	-	-	-	-	-	-	-	-
	Ped Clearance		-	-	-	-	-	-	-	-	-	-	-
	Flash		R	Y	-	R	R	Y	-	R	-	-	-
	Recall		-	SOFT	-	-	-	SOFT	-	-	-	-	-
	Overlap		A	-	-	-	-	-	-	A	-	-	-
	Detector		PR	PR	-	PR	PR	PR	-	PR	-	-	-
	Dual Entry		No	Yes	-	Yes	No	Yes	-	Yes	-	-	-

Event	Start	M-F	Sa	Su
1	0:00	4	4	4
2	5:00	1	1	-
3	8:00	-	-	6
4	9:00	7	3	-
5	15:00	2	2	-
6	19:00	5	5	5

Intersection 6: Barra Road and West Cole Road

Proposed Signal Phasing - Barra Rd and West Cole Road												
	Event Plan	~~Ø~~1	~~Ø~~2	~~Ø~~3	~~Ø~~4	~~Ø~~5	~~Ø~~6	~~Ø~~7	~~Ø~~8	~~Ø~~9	Offset	
		WBL	EBTR	-	NBLTR	EBL	WBTR	-	SBLTR	-	Phase	Value
Location		Rte 111	Rte 111	-	Barra	Rte 111	Rte 111	-	W Cole	-	-	-
Initial Interval		5	10	-	5	5	10	-	5	-	-	-
Vehicle Extension 1		3	3	-	3	3	3	-	3	-	-	-
Vehicle Extension 2		-	-	-	-	-	-	-	-		-	-
Green Time: Max 1 - Coord AM	4	5	29	-	27	6	28	-	27	-	2,6	48
Green Time: Max 2 - Coord PM	5	5	57	-	39	6	56	-	39	-	2,6	110
Green Time: Max 3 - Coord Sa/Su	6	5	24	-	7	5	24	-	7	-	2,6	20
Green Time: Max 4 - Uncoord AM	1	6	31	-	29	9	28	-	29	-	-	-
Green Time: Max 5 - Uncoord PM	2	5	22	-	14	5	22	-	14	-	-	-
Green Time: Max 6 - Uncoord Sa/Su	3	5	24	-	7	5	24	-	7	-	-	-
Green Time: Max 7 - Uncoord Mid	100	13	24	-	24	13	24	-	24	-	-	-
Splits: Max 1 - Coord AM	4	12	35	-	33	13	34	-	33	-	-	-
Splits: Max 2 - Coord PM	5	12	63	-	45	13	62	-	45	-	-	-
Splits: Max 3 - Coord Sa/Su	6	12	30	-	13	12	30	-	13	-	-	-
Splits: Max 4 - Uncoord AM	1	13	37	-	35	16	34	-	35	-	-	-
Splits: Max 5 - Uncoord PM	2	12	28	-	20	12	28	-	20	-	-	-
Splits: Max 6 - Uncoord Sa/Su	3	12	30	-	13	12	30	-	13	-	-	-
Splits: Max 7 - Uncoord Mid	100	20	30	-	30	20	30	-	30	-	-	-
Dynamic Max		-	-	-	-	-	-	-	-	-	-	-
Dynamic Step		-	-	-	-	-	-	-	-	-	-	-
Yellow		4	4	-	4	4	4	-	4	-	-	-
All Red		3	2	-	2	3	2	-	2	-	-	-
Walk/Don't Walk		-	-	-	-	-	4	-	4	-	-	-
Ped Clearance		-	-	-	-	-	23	-	21	-	-	-
Flash		R	Y	-	R	R	Y	-	R	-	-	-
Recall		-	SOFT	-	-	-	SOFT	-	-	-	-	-
Overlap										-	-	-
Detector		PR	PR	-	PR	PR	PR	-	PR	-	-	-
Dual Entry		No	Yes	-	Yes	No	Yes	-	Yes	-	-	-

Event	Start	M-F	Sa	Su
1	0:00	4	4	4
2	5:00	1	1	-
3	9:00	5	3	-
4	10:00	-	-	6
5	15:00	2	2	-
6	19:00	5	5	5

SPECIAL PROVISION

SECTION 645

HIGHWAY SIGNING

(Remove and Reset Sign)
(Remove and Stack Sign)

645.07 Demounting and Reinstalling Existing Signs and Poles

The following paragraphs are added:

At locations noted on the Plans, existing ground-mounted signs are designated to be removed and reset. This work shall consist of removing the sign panels, removing and resetting or disposing of the existing wood post and resetting the sign panels on a new wood post if required in the appropriate specified location. The Resident will determine if a new wood post is required.

At locations as shown on the Plans, existing ground-mounted signs are designated to be removed and stacked. This work shall consist of removing and delivering existing sign panels, posts, concrete foundations and breakaway devices to the MTA Sign Shop at Mile 58 NB. Excavations shall be backfilled and ground restored to the satisfaction of the Resident.

Any existing signs not shown on the Plans are to remain in their existing condition unless directed otherwise by the Resident.

645.08 Method of Measurement

The following sentences are added:

Removing and Resetting existing ground-mounted signs shall be measured as complete units each, removed, reset and accepted.

Removing and stacking existing signs shall be measured as complete units each removed and stacked.

645.09 Basis of Payment

The following paragraphs are added:

The accepted signs removed and stacked shall be paid for at the Contract unit price each as specified. Such price shall include removing and stacking sign panels and supports at the location specified.

The accepted signs Removed and Reset will be paid for at the Contract unit price each as specified. Such price will include removing and resetting sign panels, removing and resetting or

disposing existing wood post and resetting the sign panels on the existing or new wood post and new hardware as required to complete the sign installation. Any signs or supports damaged by the Contractor shall be replaced by him with new signs or supports conforming to the applicable Specifications at no additional cost to the Authority.

Payment will be made under:

Pay Item		Pay Unit
645.105	Remove and Stack Sign	Each
645.109	Remove and Reset Sign	Each

SPECIAL PROVISION

SECTION 645

HIGHWAY SIGNING

(Protection of Signs with Type XI Sheeting)

645.04 Fabrication of Type I Guide Signs

The following paragraphs are added after the second paragraph in part b. Reflective Sheeting:

The Contractor and Sign Fabricator shall exercise all due caution to avoid any creases, bends, tears, punctures, or other damage to any Type XI sign sheeting, perceptible or not. Sign sheeting shall be protected at all times following application to the extruded aluminum surface. Any defect which becomes perceptible either under direct, indirect or no light conditions shall be cause for rejection of the sign panel.

Following the application of the sign legend and borders, the sign panel shall be protected from all hazards that may cause a defect to the sign sheeting (either background, legend or borders) in accordance with the manufacturer's recommendations. Fabricated signs shall not be stacked during storage, transport, or erection such that concentrated pressure is placed on one area of the sign face that is not uniform across the full sign face.

645.08 Method of Measurement

The fifth (5th) paragraph is deleted and replaced by the following paragraph:

The area of roadside guide signs, regulatory, warning, confirmation and route marker assembly signs of the respective types, will be measured by the area in square feet, computed to the nearest hundredth of a square foot (0.01 SF), as determined by the overall height multiplied by the overall width. Any defect in the surface area of the sign that becomes perceptible under direct, indirect, or no light conditions shall be cause for rejection of the whole sign panel.

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

MaineDOT Standard Specification 2014 Edition Section 652 – Maintenance of Traffic and the Maine Turnpike Authority 2016 Supplemental Specification Section 652 – Maintenance of Traffic are deleted in their entirety and replaced with the following:

652.1 Description

This work shall consist of furnishing, installing, maintaining and removing traffic control devices necessary to provide reasonable protection for motorists, pedestrians and construction workers in accordance with these Specifications, the applicable provisions of Section 105.4.5 - Special Detours, and the plans.

Traffic control devices include signs, signals, lighting devices, markings, barricades, channelizing, and hand signaling devices, portable light towers, truck mounted impact attenuators, traffic officers, and flaggers.

652.2 Materials

All traffic control devices shall conform to the requirements of the latest edition of the MUTCD, NCHRP 350 guidelines and all Traffic control devices shall meet Manual for Assessing Safety Hardware (MASH) 16 guidelines if date of manufacture was after December 31, 2019.

All signs shall be fabricated with high intensity fluorescent retroreflective sheeting conforming to ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic). All barricades, drums, and vertical panel markers shall be fabricated with high intensity orange and white fluorescent retroreflective sheeting conforming ASTM D 4956 - Type VII, Type VIII, or Type IX (prismatic).

Construction signs shall be fabricated from materials that are flat, free from defects, retroreflectorized, and of sufficient strength to withstand deflections using a wind speed of 80 miles/hr.

652.2.2 Signs

Only signs with symbol messages conforming to the design of the Manual of Uniform Traffic Control Devices (MUTCD) shall be used unless the Resident approves the substitution of word messages.

Any proposed use of temporary plaques to cover text or to change text shall be approved by the resident. All signs or proposed plaques shall have a uniform face and be constructed from similar sheeting.

All signs shall be new, or in like new condition and maintained in like new condition throughout the project duration. Signs shall be cleaned just prior to installation and throughout the project utilizing a method that will not damage the reflective sign sheeting.

652.2.3 Flashing Arrow Board

Flashing Arrow Boards must be of a type that has been submitted to AASHTO's National Transportation Product Evaluation Program (NTPEP) for evaluation and placed on the Maine Department of Transportations' Approved Products List of Portable Changeable Message Signs & Flashing Arrow Panels.

Flashing Arrow Boards units shall meet requirements of the current Manual on Uniform Traffic Control Devices (MUTCD) for Type "C" panels as described in Section 6F.56 - Temporary Traffic Control Devices. Flashing Arrow Boards shall have matrix of a minimum of 15 low-glare, sealed beam, Par 46 elements capable of either flashing or sequential displays as well as the various operating modes as described in the MUTCD, Chapter 6-F. If a Flashing Arrow Board consisting of a bulb matrix is used, each element should be recess-mounted or equipped with an upper hood of not less than 180 degrees. The color presented by the elements shall be yellow.

Flashing Arrow Board elements shall be capable of at least a 50 percent dimming from full brilliance. Full brilliance should be used for daytime operation and the dimmed mode shall be used for nighttime operation. Flashing Arrow Board shall be at least 96 inches x 48 inches and finished in non-reflective black. The Flashing Arrow Board shall be interpretable for a distance not less than 1 mile.

Operating modes shall include, flashing arrow, sequential arrow, sequential chevron, flashing double arrow, and flashing caution. In the three arrow signals, the second light from the arrow point shall not operate.

The minimum element on-time shall be 50 percent for the flashing mode, with equal intervals of 25 percent for each sequential phase. The flashing rate shall be not less than 25 nor more than 40 flashes per minute. All on-board circuitry shall be solid state.

Primary power source shall be 12 volt solar with a battery back-up to provide continuous operation when failure of the primary power source occurs, up to 30 days with fully charged batteries. Batteries must be capable of being charged from an onboard 110 volt AC power source and the unit shall be equipped with a cable for this purpose.

Controller and battery compartments shall be enclosed in lockable, weather-tight boxes.

The Flashing Arrow Board shall be mounted on a pneumatic-tired trailer or other suitable support for hauling to various locations, as directed. The minimum mounting height of an arrow panel should be 7 feet from the roadway to the bottom of the panel.

The face of the trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers.

A portable changeable message sign may be used to simulate an arrow panel display.

652.2.4 Other Devices

Vertical panel markers shall be orange and white striped, 8 inches wide by 24 inches high. On the Interstate System, vertical panel markers shall be orange and white striped, 12 inches wide by 36 inches high.

Cones shall be orange in color, a minimum of 28 inches high, and retro-reflectorized. Retro- reflection shall be provided by a white bands of retro-reflective sheeting conforming to the MUTCD. All cones utilized on the project shall be new or in like new condition and shall have a consistent design/appearance.

Drums shall be of plastic or other yielding material and shall be a minimum of 36 inches high and a minimum of 18 inches in diameter. There shall be at least two retro-reflectorized orange and at least two retro-reflectorized white stripes a minimum of 4 inches wide on each drum. All drums utilized on the project shall be new or in like new condition and shall have a consistent design/appearance.

Flaggers shall use a STOP / SLOW handheld paddle as the primary and preferred hand signaling device. Flags shall only be limited to emergencies. STOP / SLOW paddles shall have high intensity prismatic retro reflective sheeting, 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.

STOP / SLOW paddles shall also incorporate either white or red flashing lights on the STOP face and white or yellow flashing lights on the SLOW face of the paddle and always be in use.

Paddles must conform to any of the following patterns:

A. Two white or red lights (colors shall be all white or all red), one centered vertically above and one centered vertically below the STOP legend; and/or two white or yellow lights (colors shall be all white or all yellow), one centered vertically above and one centered vertically below the SLOW legend.

B. Two white or red lights (colors shall be all white or all red), one centered horizontally on each side of the STOP legend; and/or two white or yellow lights (colors shall be all white or all yellow), one centered horizontally on each side of the SLOW legend.

C. One white or red light centered below the STOP legend; and/or one white or yellow light centered below the SLOW legend.

D. A series of eight or more small all white or all red lights no larger than 1/4 inch in diameter along the outer edge of the paddle, arranged in an octagonal pattern at the eight corners of the border of the STOP face; and/or a series of eight or more small all white or all yellow lights no larger than 1/4 inch in diameter along the outer edge of the paddle, arranged in a diamond pattern along the border of the SLOW face; or

E. A series of white lights forming the shapes of the letters in the legend. Flashing light patterns shall be compliant with Section 6E.03 Hand Signaling Devices in the most current version of the Manual on Uniform Traffic Control Devices.

All flashing light patterns on the STOP / SLOW paddle shall be visible from a minimum distance of 1000 feet.

Type I barricades shall be 2 feet minimum, 8 feet maximum in length with an 8 inch wide rail mounted 3 feet minimum above the ground. Type II barricades shall be 2 feet in length with two 8 inch wide rails, and the top rail shall be mounted 3 feet minimum above the roadway. Type III barricades shall be 8 feet in length with three 8 inch wide rails, and the top rail shall be mounted 5 feet minimum above the roadway. The cross members of all barricades shall be of ½ or ⅝ inch thick plywood or other lightweight rigid material such as plastic, fiberglass or fiber wood as approved by the Resident. The predominant color for supports and other barricade components shall be white, except that unpainted galvanized metal or aluminum components may be used.

652.2.5 Portable Changeable Message Sign

Portable-Changeable Message Signs (PCMS) will be furnished by the Contractor and shall be Ver-Mac PCMS-1210 or an approved equal. The face of the PCMS trailer shall be delineated on a permanent basis by affixing retro-reflective material, known as conspicuity material, in a continuous line as seen by oncoming drivers. PCMS's shall be located and relocated to locations approved by the Resident within the Project limits for the duration of the Project.

Features to the Ver-Mac PCMS shall include:

- An all-LED display.
- Be legible from a distance of 1,000 feet.
- Have three (3) lines available for messages.
- Be NTCIP compliant (NTCIP 1203 & 1204).
- Be capable of being programmed by a remote computer via a data (IP over Cell) cellular modem connection.
- Have GPS location capability by adding on a GPS device capable of providing GPS location remotely to the MTA Communications' Center.
- Be programmable by Vanguard Software by Daktronics.

The Contractor shall complete and/or provide the following:

- Submit a catalog cut shop drawing to the Resident of all proposed equipment for review and approval.

- Establish and pay for a data cellular account so that PCMS may be remotely programmed and operated from the MTA Communications' Center.

- Provide to the Authority technical support from the PCMS manufacturer that may be necessary to integrate the PCMS into the MTA software platform (Vanguard Software by Daktronics).

- Provide the manufacturer's software necessary to change the PCMS messages remotely from the MTA Communications' Center and the Resident's computer if necessary or requested.

- Provide training on the operation of the PCMS to the Resident and the MTA Communications' Center representative.

- Make all PCMS on the Project work site available to the MTA for any/all emergency situations as defined by the MTA. This shall include the preemption of any messages running at the time of need as approved by the MTA and the Resident.

The Contractor shall also:

- Furnish, operate, relocate and maintain the PCMS as approved or requested by the Resident.

- Be responsible for the day-to-day programming and operation of the PCMS for Project purposes.

The PCMS(s) shall be on-site, with data cellular account established, GPS location capable, and all training required complete within one month after mobilization or seven days prior to implementing traffic shifts, detours or stoppages, whichever is sooner. Implementation of traffic shifts, detours, or stoppages of traffic will not be allowed without PCMS boards on-site with the specified MTA Communications' Center Software Platform integration and training.

652.2.5 Truck Mounted Attenuator

A minimum of one (1) Truck Mounter Attenuator (TMA) will be furnished and maintained by the Contractor for use on the project. If at least one is not used as described above, then it will be considered a Traffic Control Plan violation and result in a reduction of payment as outlined in Section 652.

The truck mounted attenuator system shall conform to the following requirements:

- Truck and attached attenuator shall conform to the NCHRP Report 350, Test Level 3 criteria or MASH if manufactured after 2019.
- Amber strobe lights with 360-degree visibility.
- An arrow light bar fixed to the vehicle.
- The attenuator shall be mounted to a vehicle with a minimum weight of 10,000 lbs.
- The attenuator shall be mounted to a vehicle with a minimum weight of 24,000 lbs. for Items 652.4501 – Truck Mounted Attenuator – 24, 000 LB.

The Contractor shall manage the operation of the truck mounted attenuators. A truck mounted attenuator **shall be utilized for all lane closures on the Turnpike mainline, shall be utilized for all temporary shoulder closures (i.e. closures that do not include temporary concrete barrier) on the Turnpike mainline**, and other construction operations where workers are exposed to traffic and not protected by positive means. The operation of the vehicle shall be in accordance with the Manual of Uniform Traffic Control Devices and the manufacturer's recommendation.

Installation: The chart below identifies the distance from the work zone or hazard where the TMA shall be deployed. If the work zone is within a marked lane closure, the barrier truck distances shall apply and if the work is mobile, then shadow truck distances shall apply. The TMA shall not be located in the buffer zone. The shadow vehicle shall have its front wheels turned away the work area and from traffic, have parking brake set, and be put in park if an automatic transmission; or if a manual transmission it shall have its front wheels turned away the work area and from traffic, have parking brake set and should be placed in gear and shut off if possible while still maintaining warning lights. If length of time or weather are a concern for the battery since the warning lights must be maintained the engine should be started and run periodically for battery recharging. No other vehicles or equipment shall park in front of the shadow vehicle or within the buffer space behind the shadow vehicle. For placement details, reference the Manual of Uniform Traffic Control Devices (MUTCD).

Weight of Truck	Barrier Truck Distance from Work Zone of Hazard	Shadow Truck Distance from Work Vehicle or Work Zone
10,000 lbs	250 ft	300 ft
15,000 lbs	200 ft	250 ft
>24,000 lbs	150 ft	200 ft

652.2.6 Sequential Flashing Warning Lights

When included in contracts as a bid item Sequential Flashing Warning Lights on drums used for merging tapers and shifting tapers during nighttime operation for project use. The purpose of these lights is to assist the motorist in determining which direction to merge or shift and to reduce the number of late merges resulting in devices being struck and having to be reset to maintain positive guidance at the merge point. The successive flashing of the lights shall occur from the upstream end of the taper to the downstream end of the taper in order to identify the desired vehicle path.

The Sequential Flashing Warning Lights shall meet all of the requirements for warning lights within the current edition of the MUTCD. Each light unit shall be capable of operating fully and continuously for a minimum of 500 hours when equipped with a standard battery set. Each light in sequence shall be flashed at a rate of not less than 55 times per minutes and not more than 75 times per minute. The flash rate and flash duration shall be consistent throughout the sequence.

Sequential Flashing Warning Lights shall be "Pi-Lit" Sequential Barricade Warning Lamps or an approved equal.

Sequential Flashing Warning lights are to be used for merging and shifting tapers that are in place during the nighttime hours (12-hours when ambient light is dimmed). These lights shall

flash sequentially beginning with the first light and continuing until the final light at the beginning of a tangent section.

The Sequential Flashing Warning Lights shall automatically flash in sequence when placed on the drums that form the merging or shifting tapers.

The number of lights used in the drum taper shall equal one half the number of drums used in the taper.

Drums are the only channelizing device permitted for mounting the Sequential Flashing Warning Lights.

The Sequential Flashing Warning Lights shall be weather independent and visual obstruction shall not interfere with the operation of the lights.

The Sequential Flashing Warning Lights shall automatically sequence when placed in line in an open area with a distance between lights of 25 to 150 feet. A 10-foot stagger in the line of lights shall have no adverse effect on the operation of the lights.

If one light fails, the flashing sequence shall continue. Non-sequential flashing is prohibited.

652.2.7 Automated Trailer Mounted Speed Sign

The Contract will furnish, operate, and maintain at least one (1) Automated Trailer Mounted Speed Limit Sign for project use. The automated speed sign shall be required when there is a Work Zone Speed Limit in place. The Contractor shall furnish, operate, and maintain the Automated Trailer Mounted Radar Speed Limit Signs during the project operations.

Trailer mounted speed limit signs shall be self-contained units including sign assembly, flashing lights, directional radar to measure speed limits, a regulatory speed limit sign, and power supply specifically constructed to operate as a trailer-mounted sign. The preferred color of the unit shall be “construction orange”.

Base material for the regulatory speed limit signs shall be weatherproof, rigid substrate specifically manufactured for highway signing and meet the retro-reflective sheeting application requirements of the sheeting manufacturer.

Sign text shall consist of the letters, digits and symbols either applied by stick-on or silk screen, to conform to the dimensions and designs indicated in the Contract, MUTCD and/or FHWA Standard Highway Signs. The materials and methods shall be in accordance with standard commercial processes.

“Work Zone” construction signs shall be mounted on the trailer unit above the regulatory speed limit sign. (see attached graphic details).

Signs and secondary signs shall follow the MUTCD for minimum mounting heights.

The power supply shall be either full battery power with solar panel charging (capable of maintaining a charged battery level) and 135 amperes, 12-volt deep cycle batteries, or diesel powered generator with a fuel capacity sufficient for 10 hours of continuous operation.

Each unit shall be equipped with two mono-directional flashing lights, placed in accordance with the MUTCD, with amber lenses and reflectors, which are visible through a range of 120 degrees when viewed facing the sign. The lights shall be a minimum of 8-inch diameter, either LED, halogen, or incandescent lamps, and shall be visible for a minimum distance of one mile under daylight conditions and shall have a minimum flash rate of 40 flashes per minute. An "On" indicator light shall be mounted on the back of the signs, which is visible for at least 500 feet to provide confirmation that the flashing lights are operating.

The directional radar shall monitor approaching traffic only. The radar shall be capable of measuring speeds from 5 to 70 MPH at a distance of up to 1500 feet and shall have a high speed cut off thresh hold. Speed data shall be recorded and stored on the sign and must be made available to the Authority as requested.

All existing speed limit signs, which conflict with the construction zone trailer mounted speed limit signs shall be covered completely when the work zone speed limit is in place.

Automated Trailer Mounted Speed Limit Signs shall only be used when a work zone speed limit is in place **and shall be required when the work zone speed limit is active.** The Contractor shall manage the utilization and operation of the Automated Trailer Mounted Speed Limit Signs and if at least one is not used when work zone speed limits are in place then it will be considered a Traffic Control Plan violation and result in a reduction of payment as outlined in Section 652.

The Resident will record the actual time and location for the signs on a daily basis when the Automated Trailer Mounted Speed Limit Signs are in use.

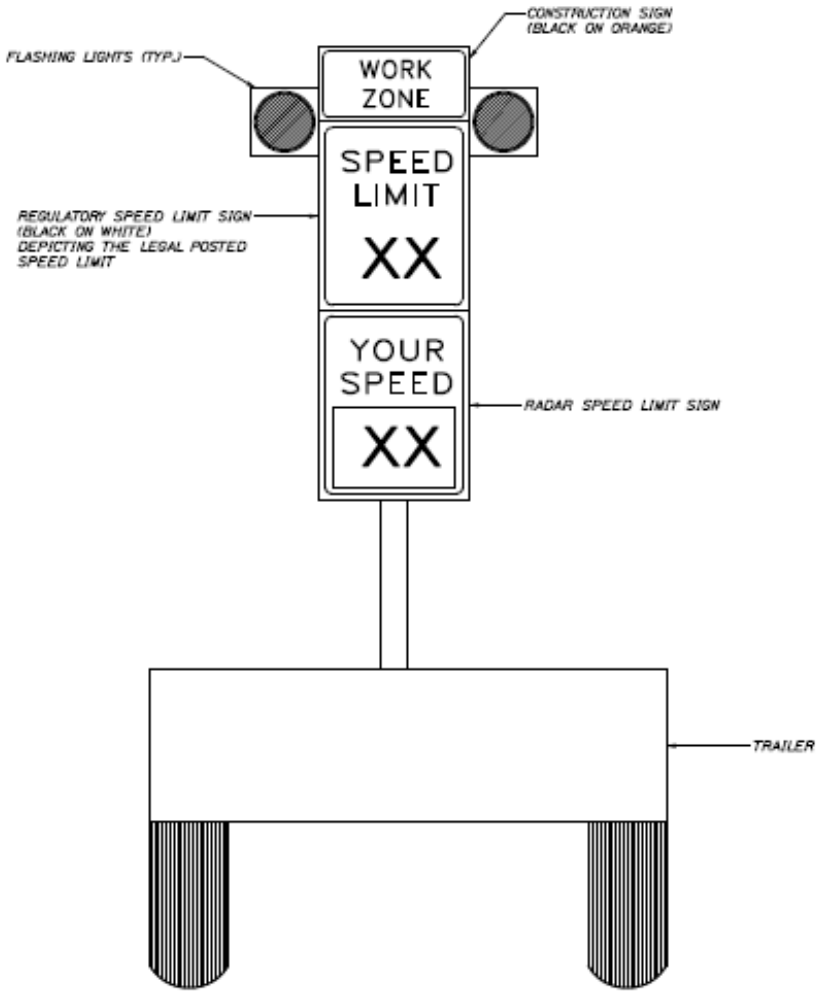
The Automated Trailer Mounted Radar Speed Limit Sign may be placed as shown on the plans, or may replace the posted regulatory speed limit signs, or may be placed at a location within the closed lane that has a reduced speed limit.

Automated Trailer Mounted Speed Limit Signs shall be delineated with retro-reflective temporary traffic control devices while in use and shall also be delineated by affixing a retro-reflective material directly on the trailer.

Upon delivery of the Automated Trailer Mounted Speed Limit Sign and before acceptance by the Authority, the Contractor shall have a representative of the manufacturer review the condition and notify the Resident in writing, of all deficiencies noted.

The Contractor shall arrange to have all necessary repairs performed at no cost to the Authority.

To avoid impairing driver vision, the Contractor shall dim the lighted speed limit readings by 50 percent during nighttime use and restore full power lighting during daytime operation.



Date: 2/13/2018

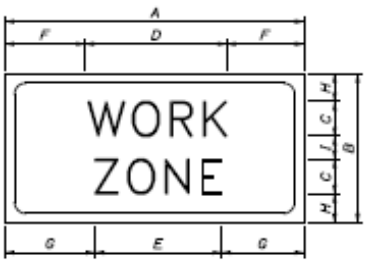
Filename: Trailer Mounted Speed Limit.dgn

HNTB

FEBRUARY 2018

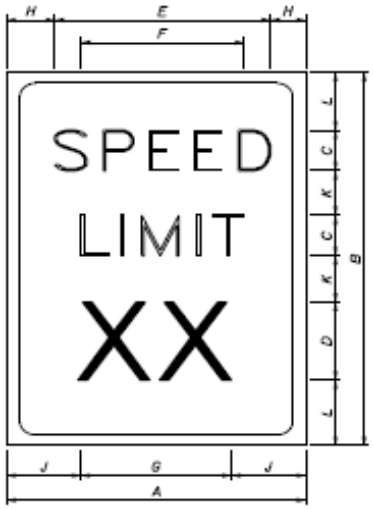
AUTOMATED TRAILER MOUNTED
SPEED LIMIT SIGN

1OF 2



SIGN #1

1.25" BORDER, 0.75" INDENT,
BLACK ON ORANGE; 8B GRADE PLYWOOD SIGN



SIGN #2

1.25" BORDER, 0.75" INDENT,
BLACK ON WHITE; 8B GRADE PLYWOOD SIGN

	DIMENSIONS (INCHES) / LETTER FONTS											
	A	B	C	D	E	F	G	H	I	J	K	L
#1	48	20	5D	18 1/8	16 5/8	14 1/8	15 5/8	4	2	N/A	N/A	N/A
#2	48	60	8E	16E	38 1/4	29 1/4	29 1/2	4 1/8	9 3/8	9 1/4	8	6

Date: 2/13/2018

Filename: Trailer Mounted Speed Limit.dgn

MAINE TURNPIKE

HNTB

FEBRUARY 2018

TRAILER MOUNTED CONSTRUCTION ZONE
SPEED LIMIT SIGN

2 OF 2

652.2.8 Temporary Portable Rumble Strips

If a pay item is included in the contract or the Contract desires to utilize Temporary Portable Rumble Strips this work consists of furnishing and placing temporary portable rumble strips RoadQuake 2F TPRS or an approved equal. Furnishing a temporary portable rumble strip system includes a method to transport and move these to on-site locations where they will be used. The Contractor shall submit for approval, literature and all necessary certifications to the Maine Turnpike prior to procurement of the product.

If used, Temporary Portable Rumble Strips may not be practicable in areas where the roadway has more than two travel lanes, where volume windows do not allow for breaks in traffic to set up and monitor and adjust, or during nighttime lane closures.

Provide rumble strips where the plans show or as directed by the Resident as follows:

Prior to placing rumble strips, clean the roadway of sand and other materials, that may cause slippage.

Place one end of the rumble strips 6 inches from the roadway centerline. Extend the strips perpendicular to the direction of travel. Ensure strips lay flat on the roadway surface.

Only one series of rumble strips, placed before the first work zone, is required per direction of travel for multiple work zones spaced 1 mile or less apart. Work zones spaced greater than 1 mile apart require a separate series of rumble strips. Each lane shall use one group of temporary rumble strips.

Bracketed “Rumble Strip Ahead” and “Bump” signs shall be utilized and will be paid for under the respective construction sign pay items.

Maintain rumble strips as follows:

If rumble strips slide, become out of alignment, or are no longer in the wheel path of approaching vehicles during the work period, thoroughly clean both sides of the rumble strips and reset on a clean roadway.

Repair or replace damaged rumble strips immediately.

652.3.1 Responsibility of the Authority

The Authority will provide Project specific traffic control requirements and traffic control plans for use by the Contractor. The specific traffic control requirements for the Project are identified in Special Provision Section 652, Maintenance of Traffic (Specific Project Maintenance of Traffic Requirements). No revisions to these requirements or Plans will be permitted unless the Contractor can thoroughly demonstrate an overall benefit to the public and a Contract Modification is approved.

The Maine Turnpike Authority may erect lane closures on the mainline within the Project area to collect survey, provide layout, and for any other reasons deemed necessary by the Authority.

652.3.2 Responsibility of the Contractor

The Contractor shall provide continuous and effective traffic control and management for the Project that is appropriate to the construction means, methods, and sequencing allowed by the Contract and selected by the Contractor:

The Contractor shall ensure all jobsite personnel shall wear a safety vest labeled as ANSI 107-2004 standard performance for Class 3 risk exposures at all times. This requirement also applies to truck drivers and equipment operators when out of an enclosed cab.

652.3.3 Submittal of Traffic Control Plan

The Contractor shall provide continuous and effective traffic control and management for the Project that is appropriate to the means, methods and sequencing allowed by the Contract; and consistent with the Traffic Control Plans and Maintenance of Traffic Specifications. The Contractor is responsible for ensuring a safe environment for the Contract workforce, local road users, and turnpike users; and maintaining the safe efficient flow of traffic through the construction zone at all times during the Contract. The protocols and requirements outlined in the Contract shall be strictly enforced. The Contractor shall submit, at or before the Preconstruction Meeting, a Traffic Control Plan (TCP) that provides the following information to the Authority:

a. The name, telephone number, and other contact numbers (cellular phone, pager, if any) of the Contractor's Traffic Control Supervisor (TCS). The TCS is the person with overall responsibility for ensuring the contractor follows the TCP, and who has received Work Zone Traffic Control Training commensurate with the level of responsibility shown in the requirements of the Contract, and who is empowered to immediately resolve any work zone traffic control deficiencies or issues. Provide documentation that the Traffic Control Supervisor has completed a Work Zone Traffic Control Training Course (AGC, ATSSA, or other industry- recognized training), and a Supervisory refresher training every 5 years thereafter. Submit training certificates or attendance roster that includes the course name, training entity, and date of training. State how the traffic control devices will be maintained including a frequency of inspection for both temporary and permanent traffic control devices.

   Traffic Control Training Course curriculum must be based on the standards and guidelines of the MUTCD and must include, at a minimum, the following:

   1. Parts of Temporary Traffic Control Zone
   2. Appropriate use and spacing of signs
   3. Use and spacing of channelizing devices
   4. Flagging basics
   5. Typical examples and applications

The Traffic Control Supervisor, or designee directly overseeing physical installation, adjustment, and dismantling of work zone traffic control, will ensure all personnel performing those activities are trained to execute the work in a safe and proper manner, in accordance with their level of decision-making and responsibility. The emergency contact list shall contain a listing of individuals who may be contacted during non-work hours and shall adequately respond to the request.

b. Proposed revisions to the construction phasing or sequencing that reasonably minimizes traffic impacts.

c. A written narrative and/or plan explaining how traffic and pedestrians will be moved through the Project Limits, including transitions during the change from one phase of construction to the next, as applicable.

d. Temporary traffic control treatments at all intersections with roads, rail crossings, businesses, parking lots, pedestrian ways, bike paths, trails, residences, garages, farms, and other access points, as applicable.

e. A list of all Contractor or Subcontractor certified flaggers to be used on the Project, together with the number of flaggers which will be used for each type of operation that flagging is needed. If the Contractor is using a flagging Subcontractor, then the name and address of the Subcontractor may be provided instead of a list of flaggers.

f. A procedure for notifying the Resident of the need to change the traffic control plan or the need to remove a lane restriction.

g. A description of any special detours including provisions for constructing, maintaining, signing, and removing the detour or detours, including all temporary bridges and accessory features and complete restoration of the impacted land.

h. The maximum length of requested contiguous lane closure. The Contractor shall not close excessive lengths of traffic lane to avoid moving traffic control devices.

i. The proposed temporary roadway surface conditions and treatments. The Contractor shall provide an adequate roadway surface at all times; taking into account traffic speed, volume, and duration.

j. The coordination of appropriate temporary items (drainage, concrete barriers, barrier end treatments, impact attenuators, and traffic signals) with the TCP.

k. The plan for unexpected nighttime work, the contractor shall provide a list of emergency nighttime lighting equipment and safety personnel available on-site or have the ability to have them on site within an hour of the time of need.

l. The plan for meeting any project specific requirements contained in special provision 105 and/or 107, and/or Section 656

m. The lighting plan if night work is anticipated.

The Authority will review the TCP for completeness and conformity with Contract provisions, the current edition of the MUTCD, and Authority policy and procedures. The Authority will review and provide comments to the Contractor within 14 days of receipt of the TCP. No review or comment by the Authority, or any failure to review or comment, shall operate to absolve the contractor of its responsibility to design and implement the plan in accordance with the Contract, or to shift any responsibility to the Authority. If the TCP is determined by the Authority to be operationally ineffective, the Contractor shall submit modifications of the TCP to the Authority for review and shall implement these changes at no additional cost to the Contract. Nothing in this Section shall negate the Contractor's obligations set forth in Section 110 - Indemnification, Bonding, and Insurance. The creation and modification of the TCP will be considered incidental to the related 652 items.

652.3.4 General

Prior to starting any work on any part of the project adjacent to or being used by the traveling public, the Contractor shall install the appropriate traffic control devices in accordance with the plans, specifications and the latest edition of Manual of Uniform Traffic Control Devices, Part VI. The Contractor shall continuously maintain the traffic control devices in their proper position, and they shall be kept clean, legible and in good repair throughout the duration of the work. If notified that the traffic control devices are not in place or not properly maintained, the Contractor may be ordered to immediately suspend work until all deficiencies are corrected.

No equipment or vehicles of the Contractor, their subcontractors, or employees engaged in work on this contract shall be parked or stopped on lanes carrying traffic, or on lanes or shoulders adjacent to lanes carrying traffic, at any time, except as required by ongoing work operations. Contractor equipment or vehicles shall never be used to stop, block, or channelize traffic.

Vehicles parked on the shoulder shall be located so all portions of the vehicle(s) are a minimum of one foot from the traveled way. No operation shall be conducted on or near the traveled lanes or shoulders without first setting up the proper lane closure and traffic control devices. These precautions shall be maintained at all times while this Work is being performed. The Contractor shall keep all paved areas of the highway as clear as possible at all times. No materials shall be stored on any paved area of the highway or within 30 feet of the traveled way (unless protected by concrete barriers and specifically approved by the Resident). Private vehicles owned by Contractor's employees shall be parked close together in a group no closer than 30 feet from the traveled way in pre-approved areas.

Channelization devices shall include Vertical Panel Markers, Barricades, Cones, and Drums shall be in accordance with the MUTCD. These devices shall be installed and maintained at the spacing determined by the MUTCD through the work area.

The Contractor shall maintain existing guardrails and/or barriers until removal is necessary for construction. The Contractor shall use a temporary barrier or appropriate channelizing devices, as approved by the Resident, while the guardrails and/or barriers are absent. Permanent guardrails and barriers shall be installed as soon as possible to minimize risk to the public.

When Contractor operations or shoulder grading leave a continuous 3 inch or less exposed vertical face at the edge of the traveled way, including the shoulder, or when traffic is shifted into the shoulder adjacent to the edge of pavement where an existing 3 inch or less exposed vertical face creates a safety hazard, channelization devices should be placed 2 feet outside the edge of the pavement at intervals not exceeding 600 feet and, depending on type and location of the exposed vertical face, a 48 inch by 48 inch W8-9 Low Shoulder, or W8-11 Uneven Lane, and/or a W8-17P Shoulder Drop-Off sign should be placed at a maximum spacing of ½ mile. When Contractor operations or shoulder grading leave greater than a 3-inch exposed continuous vertical face at the edge of the traveled way, including the shoulder, or when an existing condition of an exposed vertical face of 3 inches or more is adjacent to active traffic shifted into shoulder, the Contractor shall place shoulder material at a slope not exceeding 3 horizontal to 1 vertical to meet the pavement grade, before the lane is opened to traffic.

Special Detours and temporary structures, if used, shall meet applicable AASHTO standards, including curve radii and grade.

Maine Turnpike Traffic Control Requirements

This Section outlines the minimum requirements that shall be maintained for working on, over, or adjacent to the Maine Turnpike roadway.

General

Two travel lanes in each direction (each direction being 24 feet wide including/excluding shoulder) in the two lane portion of the turnpike, and three travel lanes in each direction (each direction being 36 feet wide including/excluding shoulder) in the three lane portion of the turnpike (Mile 0.0 to mile 44.3) shall be maintained at all times except while performing work in a designated lane, directly over or adjacent to traffic, and during the placement and removal of traffic control devices.

Unless otherwise specified in the contract documents the minimum main line width for a single travel lane shall be 14 ft and minimum ramp widths of 16 ft which must be maintained at all times, from ½ hour before sunrise and ½ hour after sunset as indicated on the Sunrise/Sunset Table at: http://www.sunrisesunset.com/usa/Maine.asp . If the Project town is not listed, the closest town on the list will be used as agreed at the Preconstruction Meeting.

Shoulder closures, lane closures, and lane shifts meeting the MUTCD guidelines, other than those shown in the plans, must be submitted for approval from the MTA prior to use in the construction operations.

No lane closures will be allowed during non-working hours, weekends and/or holiday periods unless included in the Contract as long-term traffic control requirement as outlined in Section 652 – Specific Project Maintenance of Traffic Requirements unless written permission is obtained from the Authority.

Any special signs, barricades or other devices deemed necessary by the Resident shall be furnished and maintained by the Contractor. Extra care shall be taken so that the traffic flow will not be disturbed. The use of construction signs and warning devices not shown on the Plans or in the MUTCD is prohibited unless approved by the Resident

The Contractor's personnel and equipment shall avoid crossing traffic whenever possible. No Contractor's vehicle may slow down or stop in a traffic lane unless said lane has previously been made safe with signs and barricades as required by the Resident.

No vehicle will move onto the traveled way at such a time or in such a manner so as to cause undue concern or danger to traffic approaching from either direction. The Contractor or his employees are not empowered to stop traffic.

The Contractor shall take necessary care at all times, in all operations and use of his equipment, to protect and facilitate traffic. During periods of idleness, the equipment shall not be left in a way to obstruct the traffic artery or to interfere with traffic.

The Contractor shall furnish approved signs reading "Construction Vehicle - Keep Back" to be used on trucks hauling to the Project. The signs shall be a minimum of 30-inch by 60-inch, Black and Orange, and meet construction sign retro reflectivity requirements

All vehicles used on the Project shall be equipped with amber flashing lights, by means of a single or multiple, flashing LED or strobe lights mounted so as to be visible 360 degrees. In addition, vehicles operating under direction of the Maine Turnpike Authority may be equipped with auxiliary lights that are green, white or amber or any combination of green, white or amber. Auxiliary lighting shall have sufficient intensity to be visible at 500 feet in normal daylight and a flash rate between 1Hz and 4Hz. The vehicle flashing system shall be in continuous operation while the vehicle is on any part of the project and positioned or mounted in such a way to not be obstructed by vehicle mounted or other equipment. Dump trucks, concrete trucks and utility trucks at a minimum shall have a strobe light mounted on each side of the vehicle. The use of motorcycles is not permitted within a construction site or as a means to arrive at or leave a work zone.

Where space is available pavement striping for all tapers shall create a minimum buffer of 250 feet to the point where the temporary concrete barrier taper ends and becomes parallel to the travelway. Temporary concrete barrier shall be tapered at a minimum 8:1 unless space is available and then it should be tapered at 15:1 or 100 feet whichever is longest.

Interchange ramps may only be closed between 9:00 p.m. and 5:00 AM, unless otherwise shown on the Maintenance of Traffic Phasing Plans or as directed by the MTA. Ramp closures will not be permitted the day before or after holidays, on holidays, or on Saturdays or Sundays. The Contractor shall request approval from the Resident/Authority two weeks prior for all ramp closures. Portable changeable message signs shall be used to provide advance notice and warning of the ramp closure. PCMS's shall be operational a minimum of 1 week prior to ramp closure to notify Patrons. The contractor shall coordinate PCMS locations with the Resident and the MTA.

Access to, and egress from, the construction area shall be with the direction of travel without crossing traffic. Construction vehicles are prohibited from merging with mainline traffic during the AM and PM peak traffic hours unless approved in writing from the MTA. The contractor shall develop work zone access/egress with acceleration and deacceleration areas and should utilize interchange ramp areas whenever feasible.

Temporary Mainline Lane Closures

A lane closure may be required whenever personnel will be actively working within four feet of a travel lane.

Loading/unloading trucks shall not be closer than six feet from an open travel lane. Temporary lane closures will only be allowed at the times outlined in Special Provision, Section 652, Specific Project Maintenance of Traffic Requirements. These hours may be adjusted based on the traffic volume each day by the Resident.

A lane closure is required when a danger to the traveling public may exist. The following is a partial list of activities requiring lane closures. Lane closures may be required for other activities as well:

- Milling and Paving Operations
- Bridge work
- Drainage Installation and/or Adjustment
- Clear Zone Improvements
- Pavement Markings Layout and Placement
- Work directly over traffic within six feet of a travel lane as measured from the painted pavement marking line or traffic control device will require a lane closure. This work includes but is not limited to the following:

    1. Unbolting structural steel
    2. Removing structural steel
    3. Erecting structural steel
    4. Erecting or moving sign panels on bridges or sign structures
    5. Bolting structural steel
    6. Loading and unloading trucks
    7. Light pole removal or installation
    8. Snow fence installation

Lane closures shall be removed if work requiring the lane closure is not ongoing unless included in the Contract as a long-term traffic control requirement or approved by the Resident.

During adverse weather condition when the speed limit on the Maine Turnpike has been reduced to 45 MPH, or during fog or when there is less than ½ mile of visibility, shoulder/lane closures cannot be set up and any currently in place shall be removed. Only work on the turnpike mainline that is behind temporary concrete barrier will be allowed when speed is reduced to 45 MPH or fog/visibility conditions exist.

Daytime lane closures shall be a maximum of three (3) miles. Only one daytime lane closure will be permitted per direction. Nighttime lane closures may extend through the entire length of the Project.

Temporary single lane closures are allowed upon approval of the Resident. Lane and/or ramp closure setup may not begin until the beginning time specified. Closures that are setup early or that remain in place outside of the approved time period shall be subject to a lane rental fee of $1,000 per five minutes for every five minutes outside of the approved time. The installation of the construction signs will be considered setting up the lane closure. Removal of the last construction sign will be considered removal of the closure. Construction signs shall be installed immediately prior to the start of the closure and shall be promptly removed when no longer required. The installation and removal of a closure, including signs, channelizing devices, and arrow boards shall be a continuous operation. The Authority reserves the right to order the removal of an approved closure.

The Authority desires to minimize the number of daytime lane closures and the number of times that a complete stoppage of traffic is required. The Contractor is encouraged to schedule work so that the interference with the flow of traffic will be minimized. Lane closures will not be allowed until traffic associated with complete stoppages of traffic has cleared. Complete stoppages of traffic or lane closures may not be allowed on a particular day if another complete stoppage of traffic has been previously approved for another project.

The Resident is required to receive approval from the Maine Turnpike Authority for all lane closures. The Resident is required to submit a request for lane closures by noon on Thursday for any lane closures needed for the following week. The Contractor shall plan the work accordingly.

Mainline Shoulder Closures

Shoulder closures are anticipated at locations where Contractor access to the mainline is required.

Shoulder closures with plastic drums shall be removed at the end of the workday. Temporary shoulder closures with plastic drums will not be allowed during periods of inclement weather as determined by the Authority.

The location (limits) of shoulder closures with concrete barrier are shown on the Plans. The barrier must be placed prior to the start of the work requiring concrete barrier and shall remain in place until the work activity is complete.

Equipment Moves

The complete stoppage of traffic for an equipment move (including delivery of materials to the median) will be considered for approval if the action cannot reasonably be completed with the erection of a lane closure. Contractor shall be responsible for the installation of Signs CS-3, “Expect Stopped Traffic” and Signs W3-4 “Be Prepared to Stop”, in accordance with the Single Lane Closure Detail immediately prior to the equipment move. Signs will be required on any adjacent ramps within proximity to the stoppage. These signs shall be covered when not applicable.

State Police will be used to stop traffic. Cost for State Police will be the responsibility of the Authority. The times requested for trooper assisted equipment moves by on-duty troopers

cannot be guaranteed. The MTA will not be held responsible for any delays or costs associated with the delay, postponement or cancellation of an on-duty trooper assisted equipment move.

The maximum time for which traffic may be stopped and held for an equipment move at any single time shall be five (5) minutes. The duration shall be measured as the time between the time the last car passes the Resident until the time the Resident determines that all travel lanes are clear. The traffic shall only be stopped for the minimum period of time required to complete the approved activity. The Contractor shall reimburse the Authority at a rate of $500 per minute for each minute in excess of the five-minute allowance.

Unapproved movement of equipment or materials across the travel lanes shall be considered a violation of the Maintenance of Traffic Requirements and is subject to a minimum fine of $500 per occurrence with an additional $500 per minute thereafter.

Request for Complete Stoppage of Traffic

A request for a complete stoppage of traffic must be submitted to the Resident for approval. The Resident is required to receive approval from the Maine Turnpike Authority for all stoppages. The request shall be submitted to the Authority by the Resident at least five (5) working days prior to the day of the requested stoppage of traffic and two (2) days for a stoppage less than five minutes. All requests must be received by 12:00 p.m. noon to be considered as received on that day. Requests received after 12:00 p.m. shall be considered as received the following day. The Contractor shall plan the work accordingly.

During the erection or removal of overhead structures or signs traffic shall be stopped and may be held for periods of up to 25 minutes during these operations. Before the roadway is reopened, all materials shall be secured so they will not endanger traffic passing underneath. The Contractor will reimburse the Authority at the rate of $2,500.00 per five-minute period for each roadway not reopened (northbound and southbound), in excess of the 25-minute limit. Total penalty shall be deducted from the next pay estimate.

Blasting of Ledge, The maximum time for which traffic may be stopped at any single time shall be six (6) minutes. This duration shall be measured as the time between the time that the last car passes the Resident, until the time the Resident determines that all travel lanes are cleared of blast debris. The Contractor shall reduce the size of the blast, change the design and method of the blast, use more mats, or otherwise alter the blasting so that the traffic is not stopped for more than six minutes. If, due to the throw of rock onto the highway or other blasting related activities, traffic is stopped for more than six minutes, the Contractor shall pay a penalty of $1,000.00 per minute for every minute traffic is stopped in excess of the six-minute limit. The penalty shall be measured separately on the northbound and southbound roadway (or eastbound and westbound roadway). Total penalties will be deducted from the next pay estimate. Whenever the volume of traffic is excessive such that a six-minute interruption would cause objectionable congestion, in the opinion of the Authority, the hours during which blasting may occur may be further restricted. A detailed blasting plan shall be submitted as required in Supplemental Specific or Special Provision Sections 105 or 107.

652.3.5 Installation of Traffic Control Devices

All traffic control devices shall be in conformance with NCHRP 350 requirements and MASH 16 requirements if manufactured after December 31, 2019 and installed as per manufactures recommendations.

Portable signs shall be erected on temporary sign supports approved crashworthy devices so that the bottom of the sign is either 1) 12 inches or 2) greater than 5 feet above the traveled way. The bottom of all regulatory signs and ramp exit signs shall be a minimum of 5 feet above the traveled way. Post-mounted signs shall be erected so the bottom of the sign is no less than 5 feet above the traveled way, and 7 feet above the traveled way in business, commercial, and residential areas. Post-mounted signs must be erected so that the sign face is in a true vertical position. All signs shall be placed so that they are not obstructed in any manner and immediately modified to ensure proper visibility if obstructed.

The bottom of mainline and ramp traffic control signs intending to remain longer than 3 days, except as provided in 2009 MUTCD Section 6F.03 paragraph 12, shall be mounted 5 feet or greater above the edge of pavement on posts or portable sign supports.

The Resident will verify the exact locations of the construction signs in the field.

Construction signs behind guardrail shall be mounted high enough to be visible to traffic.

Vertical panel markers shall be mounted with the top at least 4 feet above the traveled way.

Drums shall not be weighted on the top. Drain holes shall be provided to prevent water from accumulating in the drums During winter periods, drums shall be placed on the grass shoulder or removed from the roadway so winter maintenance operations will not be impacted. This requires the placement of drums behind the median guardrail. Drums shall not be placed on snowbanks.

The Contractor shall operate and maintain the flashing arrow board unit and for dependable service during the life of the contract. The units shall remain in continuous night and day service at locations designated until the Resident designates a new location or discontinuance of service.

The Contractor shall maintain the devices in proper position and clean them as necessary. Maintenance shall include the covering and uncovering of all signs when no longer applicable (even if for a very short duration). The sign shall be considered adequately covered when no part of the sign face is visible either around or through the covering.

The Contractor shall replace damaged traffic control devices with devices of acceptable quality, as directed by the Resident.

The Contractor is required to cover all existing signs, including regulatory and warning signs, within the Work zone which may conflict with the proposed construction signs. The Contractor is also required to cover all permanent construction signs when they conflict with a

daily traffic control setup. The method of covering existing signs must be approved by the Resident. The use of adhesives on the sign face is prohibited.

Work Zone Speed Limits

Work Zone Speed (Fines Doubled) is a regulatory speed limit that indicates the maximum legal speed through a work zone which is lower than the normal posted speed. The speed limit shall be displayed by black on white speed limit signs in conjunction with a black on orange "Work Zone" plate. Speed limit signs shall be installed at each mile within the work zone. Any existing regulatory speed limit signs within the reduced speed zone shall be covered once the reduced speed signs have been erected.

Two orange fluorescent flags shall be attached to all speed limit signs that are uncovered for a period of time exceeding one week. This work shall be incidental. Signs that are covered and uncovered on a regular basis are not required to have the supplemental flags.

The reduced speed limit signs shall be used when workers are adjacent to traffic, when travel lane(s) are closed, when indicated on Maintenance of Traffic Control Plans provided or other times as approved by the Resident:

The signs shall be covered or removed when not applicable. The covering and uncovering of signs shall be included for payment under Maintenance of Traffic. Signs relating to reduced speed shall be installed in accordance with the details. The Contractor shall note that all signs including those behind concrete barrier or guardrail are required to be clearly visible to all drivers at all times.

Lane Closure Installation and Removal Procedure

The Contractor will follow the following procedures when closing any travel lanes on the turnpike roadways:

1. The sign package shall be erected starting with the first sign and proceeding to the start of the taper. The sign crew shall erect signs with the vehicle within the outside shoulder.

2. Position the arrow board with the proper arrow at the beginning of the taper; and,

3. When arrow board is in place, continue with the drums/cones to secure the work area.

To dismantle the lane closure, start with last drums/cone placed and work in reverse order until all the drums are removed. The arrow board which was installed first shall be the final traffic control device removed, excluding the sign package. The remaining sign package shall be picked-up starting with the first sign placed and continuing in the direction of traffic and with the vehicle in the outside shoulder.

Trucking Plan

The Contractor shall submit a trucking plan to the Resident within 10 working days of the award of the Contract. The trucking plan shall consist of at least the following:

- Date of anticipated start of work per each location.
- Haul routes from plant/pit to work area and return.
- Haul routes from work area to disposal area and return.
- Entering / exiting the work area.
- Vehicle safety equipment and Vehicle inspection.
- Personal safety equipment.
- Communications equipment and plan.

The trucking plan will not be paid for separately but shall be incidental to the Contract.

652.3.6 Traffic Control

The existing travel way width shall be maintained to the maximum extent practical.

Vertical panel markers, drums, cones, or striping shall be used to clearly delineate the roadway through the construction area. Two-way traffic operation shall be provided at all times that the Contractor is not working on the project. One- way traffic shall be controlled through work areas by flaggers, utilizing radios, field telephones, or other means of direct communication.

The traffic control devices shall be moved or removed as the work progresses to assure compatibility between the uses of the traffic control devices and the traffic flow.

Pavement markings shall be altered as required to conform to the existing traffic flow pattern. Repainting of pavement marking lines, if required to maintain the effectiveness of the line, shall be considered incidental to the maintenance of traffic control devices, no separate payment will be made. Inappropriate pavement markings shall be removed whenever traffic is rerouted, and temporary construction pavement markings shall be placed. Removal of non-applicable markings and initial placement of temporary construction pavement markings will be paid for under the appropriate Contract items. Traffic changes shall not be made unless there is sufficient time, equipment, materials, and personnel available to complete the change properly before the end of the workday. This provision will not be required when traffic is rerouted for brief periods and the route can be clearly defined by channelizing devices, or flaggers, or both.

All vehicles used during the installation and removal of traffic control devices, including lane closures, shall be equipped with a vehicle-mounted lighted arrow board or high intensity LED full width light bar acceptable to the Resident. The arrow board or full width light bar shall be capable of displaying a left arrow, right arrow, double arrow, and light bar patterns.

652.4 Flaggers

The Contractor shall furnish flaggers as required by contract documents or as otherwise specified by the Resident. Flaggers shall not stop traffic on Turnpike mainline or interchange ramps. Only State Police are allowed to stop traffic on mainline or interchange ramps.

All flaggers must have successfully completed a flagger test approved by the Maine Department of Transportation and administered by a Maine Department of Transportation 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 3, along with a hat 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.

Flagger stations shall be located far enough in advance of the workspace so that approaching road users will have sufficient distance to stop at the intended stopping point. While flagging, the flagger should stand either on the shoulder adjacent to the traffic being controlled, or in the closed lane. At a spot obstruction with adequate sight distance, the flagger may stand on the shoulder opposite the closed sections to operate effectively. Under no circumstances shall the flagger stand in the lane being used by moving traffic or have their back to oncoming traffic. The flagger should be clearly visible to approaching traffic at all times and should have a clear escape route.

When conditions do not allow for proper approach sight distance of a flagger or storage space for waiting vehicles, additional flaggers shall be used at the rear of the backlogged traffic or at a point where approaching vehicles have adequate stopping sight distance to the rear of the backlogged traffic. All flagger stations shall be signed, even when in close proximity. The signs shall be removed or covered when flagger operations are not in place, even if it is for a very short duration.

Flaggers shall be provided as a minimum, a 10-minute break, every 2 hours and a 30 minute or longer lunch period away from the workstation. Flaggers may only receive 1 unpaid break per day; all other breaks must be paid. Sufficient certified flaggers shall be available onsite to provide for continuous flagging operations during break periods. If the flaggers are receiving the appropriate breaks, breaker flagger(s) shall be paid starting 2 hours after the work begins and ending 2 hours before the work ends. A maximum of 1 breaker per 6 flaggers will be paid. (1 breaker flagger for 2 to 6 flaggers, 2 breaker flaggers for 7 to 12 flaggers, etc.). If a flagger station is manned for 10 hours or more, then ½ hour for lunch will be deducted from billable breaker flagger hours.

652.41 Traffic Officers

Local road traffic officers, if required, shall be uniformed police officers. State Police officers and vehicles shall be used to warn and stop traffic on the Maine Turnpike. All State Police shall be scheduled through the Maine Turnpike Authority. The Authority will make payment for the State Police officers and vehicles directly to the State Police.

The Contractor will not be entitled to additional compensation if scheduled Work is not completed due to the unavailability of State Police.

652.5.1 Rumble Strip Crossing

When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for 7 calendar days or less, the Contractor shall install warning signs that read "RUMBLE STRIP CROSSING" with a supplemental Motorcycle Plaque, (W8-15P).

When lane shifts or lane closures require traffic to cross a permanent longitudinal rumble strip for more than 7 calendar days, the Contractor shall pave in the rumble strips in the area that traffic will cross, unless otherwise directed by the Resident. Rumble strips shall be replaced prior to the end of the project, when it is no longer necessary to cross them.

652.6.1 Daylight Work Times

Unless otherwise described in the Contract, the Contractor is allowed to commence work and end work daily according to the Sunrise/Sunset Table at: http://www.sunrisesunset.com/usa/Maine.asp . If the Project town is not listed, the closest town on the list will be used as agreed at the Preconstruction Meeting. Any work conducted before sunrise or after sunset will be considered Night Work.

652.6.2 Night work

When Night Work occurs (either scheduled or unscheduled), the Contractor shall provide and maintain lighting on all equipment, at all workstations, and all flagger stations.

The lighting facilities shall be capable of providing light of sufficient intensity to permit good workmanship, safety, and proper inspection at all times. The lighting shall be cut off and arranged on stanchions at a height that will provide perimeter lighting for each piece of equipment and will not interfere with traffic, including commercial vehicles, approaching the work site from either direction.

The Contractor shall have available portable floodlights for special areas.

The Contractor shall utilize padding, shielding or other insulation of mechanical and electrical equipment, if necessary, to minimize noise, and shall provide sufficient fuel, spare lamps, generators, etc. to maintain lighting of the work site.

The Contractor shall submit a lighting plan prior to any night work for review showing the type and location of lights to be used for night work. The Resident may require modifications be made to the lighting set up in actual field conditions.

Prior to beginning any Night Work, the Contractor shall furnish a light meter for the Residents use that is capable of measuring the range of light levels from 5 to 20 foot-candles.

Horizontal illumination, for activities on the ground, shall be measured with the photometer parallel to the road surface. For purposes of roadway lighting, the photometer is placed on the pavement. Vertical illumination, for overhead activities, shall be measured with the photometer perpendicular to the road surface. Measurements shall be taken at the height and location of the overhead activity.

Night Work lighting requirements:

Mobile Operations: For mobile-type operations, each piece of equipment (paver, roller, milling machine, etc.) will carry indirect (i.e. balloon type) lights capable of producing at least 10 foot- candles of lighting around the work area of the equipment.

Fixed Operations: For fixed-type operations (flaggers, curb, bridge, pipes, etc.), direct (i.e. tower) lighting will be utilized capable of illuminating the work area with at least 10 foot-candles of light.

Hybrid Operations: For hybrid-type operations (guardrail, sweeping, In-slope excavation, etc.), either direct or indirect lighting may be utilized. The chosen lights must be capable of producing at least 10 foot-candles of light around the work area of the equipment

Inspection Operations: Areas required to be inspected by the Authority will require a minimum of 5 foot-candles of lighting. This may be accomplished through direct or indirect means.

The Contractor shall apply 2-inch wide retro-reflective tape, with alternating red and white segments, to outline the front back and sides of construction vehicles and equipment, to define their shape and size to the extent practicable. Pickup trucks and personal vehicles are exempt from this requirement.

The Resident or any other representative of the Authority reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Authority shall not be held responsible for any delay in the work due to any suspension under this item.

Failure to follow the approved Lighting Plan will result in a Traffic Control violation.

Payment for lighting, vehicle mounted signs and other costs accrued because of night work will not be made directly but will be considered incidental to the related contract items.

652.6.3 Traffic Coordinator and Personnel

The Contractor shall submit to the Resident for approval a list of traffic control personnel assigned to the Project including qualifications, certifications and experience.

The Traffic Coordinator duties shall include, but are not necessarily limited to:

a. Developing, in conjunction with the Resident and Project superintendent, a traffic control program for the days' work activities which will facilitate traffic in a safe and efficient manner.

b. Ensure that all traffic control implements (signs, arrow boards, barrels, etc.) are on-site so the traffic program can be implemented effectively.

c. Ensure a safe and effective setup or take-down of all signing implements to least impact the traveling motorist; and,

d. Working knowledge of construction signing/traffic control requirements in conformance with the latest issued Manual on Uniform Traffic Control Devices.

e. The Contractor shall supplement the traffic control plan with a daily plan, which includes schedules for utilizing traffic coordinators and flaggers. This plan shall be submitted daily and agreed upon cooperatively with the Resident.

652.7 Method of Measurement

Signs, signs supplied by the Authority, and panel markers will be measured by the square foot for all signs authorized and installed. Flashing arrow boards, portable-changeable message signs, and flashing and steady burn lights, will be measured by each unit authorized and installed on the project. Barricades and cones will be measured by each unit authorized. Drums will be measured by each or as a lump sum authorized and installed, as indicated on the plans and specifications. No additional payment will be made for devices that require replacement due to poor condition or inadequate retroreflectivity.

Flaggers or traffic officers used during the Contract, for the convenience of the Contractor, will not be measured separately for payment, but shall be incidental to the various pay items. This includes use of Flaggers for the delivery of materials and equipment to the project or other Flagger use that is for the Contractor's convenience, as determined by the Resident Engineer. If flaggers are required to maintain traffic and there is not a pay item in the contractor for flaggers, then flaggers shall be incidental to the other Section 652 contract items and no separate payment shall be made.

The accepted quantity of traffic officer and flagger time will be the number of hours the designated station is occupied. The number of hours authorized for payment, if any, will be measured to the nearest ¼ hour.

The Authority will make payment for the State Police officers and vehicles directly to the State Police when utilized for mainline traffic control activities. State Police escorts, if required to move oversize material or equipment loads to the jobsite, will not be paid separately, but shall be incidental to the various pay items.

Maintenance of traffic control devices will be measured by the calendar day or as one lump sum, as indicated in the plans and specifications, for all authorized and installed traffic control devices. Traffic control devices will only be measured for payment the first time used. Subsequent uses shall be incidental to Item 652.36 or 652.361.

The vehicle mounted arrow board, mounted on trucks used for installation and removal of lane closures, will not be measured separately for payment, but shall be incidental to Item 652.36 or 652.361.

The traffic coordinator(s) will not be measured separately for payment but shall be incidental to Item 652.36 or 652.361.

Portable light towers, lighting on equipment and lighting plan will not be measured separately for payment but shall be incidental to the related Contract items.

Truck mounted attenuator shall be measured for payment by the calendar day for each calendar day that the unit is used on a travel lane or shoulder on the project, as approved by the Resident.

Sequential Flashing Warning Lights shall be measured for payment by the maximum number of sequential flashing warning lights satisfactorily installed and properly functioning at any one time during the life of the project. Payment shall include all materials and labor to install, maintain and remove all Sequential Flashing Warning Lights.

Automated Trailer Mounted Speed Limit Sign shall be measured for payment by the calendar day for each calendar day that the unit is used on a travel lane or shoulder on the project or per each for the continued use for the duration of the project. Payment shall include the Trailer, Radar Speed Limit Sign, flashing beacon amber lights, regulatory speed limit sign, fuel, necessary maintenance, and all checking of Radar Speed Limit Signs by manufacturer and all project moves including the transporting and delivery of the unit.

The accepted quantity of temporary portable rumble strips shall be measured by the unit complete in place, per lane closure application. A unit shall consist of 1 group of 3 full-lane width
of rumble strips. As shown in the plans, a maximum of 3 units may be used at each lane closure. A unit shall be measured for each group of rumble strips, each time they are used for a lane closure.

652.8 Basis of Payment

The accepted quantity of signs, signs supplied by the Authority, and panel markers will be paid for at the contract unit price per square foot. Such payment will be full compensation for furnishing (or retrieving from the Authority) and installing all signs, sign supports, and all incidentals necessary to complete the installation of the signs.

The accepted quantity of flashing arrow boards, barricades, battery operated flashing and steady burn lights, and cones will be paid for at the contract unit price each for the actual number of devices authorized, furnished, and installed. Such payment shall be full compensation for all incidentals necessary to install and maintain the respective devices.

The Sequential Flashing Warning Lights will be paid for at the Contract unit price per each. This price shall include all costs associated with furnishing, installing, operating, maintaining, relocating, and removing the Sequential Flashing Warning Lights.

The Truck Mounted Attenuator(s) will be paid for at the Contract unit price per calendar day for each TMA used. This price shall include all costs associated with the use of the vehicle. Payment shall include operator, fuel, truck, maintenance, flashing lights, arrow board and all other incidentals necessary to operate the vehicle.

Failure by the contractor to reinstall cones, barrels, signs, covered/uncovered signs, and similar traffic control devices within an hour of them being displaced, moved, knocked over, un-covered and etc. will result in a $150 fine per traffic control device if the issues is not resolved within 1 hour of notification by the resident. An additional $150 will be assessed for each additional hour that the device has not been corrected. If the traffic control device is critical to the maintenance of traffic creating an actual or potential safety issue with traffic and is not corrected immediately then it will result in a violation letter as described below.

Failure by the contractor to follow the Contracts 652 Supplemental Specifications, Special Provisions and Standard Specification and/or the Manual on Uniform Traffic Control Devices (MUTCD) and/or the Contractors own Traffic Control Plan, or failure to correct a violation, will result in a violation letter and result in a reduction in payment as shown in the schedule below. The Resident or any other representative of the Authority reserves the right to suspend the work at any time and request a meeting to discuss violations and remedies. The Authority shall not be held responsible for any delay in the work due to any suspension under this item. Any reduction in payment under this Special Provision will be in addition to forfeiting payment of maintenance of traffic control devices for that day.

Amount of Penalty Damages per Violation		
1st	2nd	3rd & Subsequent
$500	$1,000	$2,500

652.8.1 Maintenance of Traffic Control Devices

Maintenance of Traffic Control Devices will be paid at the contract unit price per calendar day or lump sum price, as indicated in the plans and specifications. Such payment will be full compensation for all days that the Contractor maintains traffic as specified herein, and for moving devices as many times as necessary; for replacing devices damaged, lost, or stolen; and for cleaning, maintaining, and removing all devices used for traffic control, including replacing temporary pavement marking lines.

The contract price for Maintenance of Traffic Control Devices shall be full compensation for all days for such maintenance, encompassing all areas of the contract, regardless of whether or not the work areas or projects are geographically separated.

652.8.2 Other Items

The accepted quantities of flagger hours will be paid for at the contract unit price per hour for each flagging station occupied excluding lunch breaks, and for each approved breaker flagger. Overtime hours, as reported on the certified payrolls, will be paid an additional 30% of

the bid price for 652.38. The computation and additional payment for overtime hours will occur during the project close-out process and will be paid as additional hours of 652.38 to the nearest ¼ hour. The contract unit price shall be full compensation for hiring, transporting, equipping, supervising, and the payment of flaggers and all overhead and incidentals necessary to complete the work.

There will be no payment made under any 652 pay items after the expiration of the adjusted total contract time.

The accepted quantities of traffic officer hours will be paid for at the contract unit price per ¼ hour for each station occupied, with no additional payment for overtime. This price shall be full compensation for supplying uniformed officers with police cruisers, and all incidentals necessary to complete the work, including transportation, equipment, and supervision.

Payment for temporary pavement marking lines and pavement marking removal will be made under the respective pay item in Section 627 - Pavement Markings.

Payment for temporary traffic signals will be made under Section 643 - Traffic Signals.

The accepted quantity of Portable Changeable Message Signs will be paid for at the Contract unit price each. This price shall be full compensation for furnishing, relocating, maintaining and removing the PCMS. The price also includes all costs associated with setting-up and paying for a data cellular account, technical support, training and any costs associated with the GPS location device.

Progress payment of each PCMS shall be pro-rated over the duration of the Contract. Contract duration shall be from the specified Contract start date to substantial completion or Contract completion, whichever is sooner.

For a PCMS that fails to operate when required, the Contractor will be given 24-hours to repair or replace the PCMS. For periods longer than 24-hours, payment will be reduced based on the pro-rated time that the PCMS is out of service.

Drums will be paid for at the contract unit price each, or at the Contract lump sum price, as designated in the Plans and specifications. Such payment shall be full compensation for all drums as shown on the Plans or required to complete the work.

The Truck Mounted Attenuator(s) will be paid for at the Contract unit price per calendar day. This price shall include all costs associated with the use of the vehicle. Payment shall include operator, fuel, truck, maintenance, flashing lights, arrow board and all other incidentals necessary to operate the vehicle.

The Automated Trailer Mounted Speed Limit Sign(s) will be paid for at the Contract unit price per calendar day or per each. This price shall include all costs associated with the use of the Automated Trailer Mounted Speed Limit Sign.

The accepted quantity of temporary portable rumble strips will be paid for at the contract unit price per unit which shall include the transport device. Payment is full compensation for

providing, relocating, maintaining or replacing, and removing temporary portable rumble strips. If the pay item is not included in the contract quantities, then the Authority does not anticipate the use of this item on the contract. If contractor wishes to utilize temporary portable rumble strips and the item is not in the contract, then the contractor may propose use of them to the Authority for consideration.

Payment will be made under:

Pay Item		Pay Unit
652.30	Flashing Arrow	Each
652.31	Type I Barricade	Each
652.311	Type II Barricade	Each
652.312	Type III Barricades	Each
652.32	Battery Operated Light	Each
652.33	Drum	Each
652.331	Drum	Lump Sum
652.34	Cone	Each
652.35	Construction Signs	Square Foot
652.351	Construction Signs-Supplied by Authority	Square Foot
652.36	Maintenance of Traffic Control Devices	Calendar Day
652.361	Maintenance of Traffic Control Devices	Lump Sum
652.38	Flaggers	Hour
652.381	Traffic Officers	Hour
652.41	Portable-Changeable Message Sign	Each
652.45	Truck Mounted Attenuator	Calendar Day
652.4501	Truck Mounted Attenuator – 24,000 LB	Calendar Day
652.451	Automated Trailer Mounted Speed Limit Sign	Calendar Day
652.452	Automated Trailer Mounted Speed Limit Sign	Each
652.46	Temporary Portable Rumble Strips	Unit
652.47	Sequential Flashing Warning Lights	Each

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Specific Project Maintenance of Traffic Requirements – Exit 36 & Exit 25)

This Specification describes the specific project maintenance of traffic requirements for this Project.

The following minimum traffic requirements shall be maintained. These requirements may be adjusted based on the traffic volume when authorized by the Authority.

Exit 25 Traffic Control Requirements

Alternating one-way traffic utilizing flaggers shall be used for all work at Exit 25. Two-way traffic must be maintained between 6:00 a.m. and 9:00 a.m. Monday through Friday.

Maine Turnpike and Exit 36 Traffic Control Requirements

This Section outlines the minimum requirements that shall be maintained for work on, over, or adjacent to the Maine Turnpike roadway. Operations are allowed as outlined below:

Temporary lane closures that would restrict travel to one lane in any direction shall be conducted at night between the times presented in the tables below. Liquidated damages shall be assessed at $1,000/minute for every minute that a temporary lane closure is in place outside the times presented in the table below.

During milling and paving operations adjacent to mainline lanes, the lane adjacent to the lane being paved shall also be closed.

Mainline work zone speed limits shall be reduced to the following rates:

50 MPH Speed Limit for all paving and milling operations
60 MPH Speed Limit for all other operations.

Exit 36 work zone speed limits shall be 35 MPH.

Work zone speed limits shall only be in place when work is actively occurring in the work zone.

A spotter shall be required at the front and rear of the paving operation on the mainline area or as approved by the Resident and shall not be measured for payment, but shall be incidental to Item 652.361, Maintenance of Traffic Control Devices. All spotters shall be equipped with handheld radios and spare batteries. The spotter will be required to move and maintain drums during the mobile paving operation.

Wide Load toll plaza lanes may be closed in accordance with the tables below when wide loads are not permitted on the Turnpike.

Equipment moves and temporary shoulder closures will only be allowed during the same times as temporary lane closures.

I-95 Mainline Northbound March 28, 2022 to June 24, 2022		
		Temporary Lane Closures
Days of Week:	Sunday night through Friday morning	
Time of Day:	9:00 a.m. to 2:00 p.m.	Allowed
Time of Day:	6:00 p.m. to 6:30 a.m. following day	Allowed
Days of Week:	Friday (to May 20, 2022)	
Time of Day:	9:00 a.m. to 2:00 p.m.	Allowed
Day of Week:	Friday night through Sunday morning	
Time of Day:	6:00 p.m. to 9:00 a.m. following day	Allowed

I-95 Mainline Southbound March 28, 2022 to July 1, 2022		
		Temporary Lane Closures
Days of Week:	Sunday night through Friday morning	
Time of Day:	7:00 p.m. to 3:00 p.m. following day	Allowed

Exit 36 Eastbound March 28, 2022 to June 30, 2022		
		Temporary Lane Closures
Days of Week:	Sunday night through Thursday afternoon	
Time of Day:	7:00 p.m. to 3:00 p.m. following day	Allowed
Days of Week:	Thursday night through Friday afternoon	
Time of Day:	7:00 p.m. to 2:00 p.m. following day	Allowed
Days of Week:	Friday night through Sunday night	
Time of Day:	7:00 p.m. to 7:00 p.m.	Allowed

Exit 36 Westbound March 28, 2022 to June 30, 2022		
		Temporary Lane Closures
Days of Week:	Sunday night through Friday morning	
Time of Day:	6:00 p.m. to 6:00 a.m. following day	Allowed
Days of Week:	Monday morning through Thursday afternoon	
Time of Day:	10:00 a.m. to 3:00 p.m.	Allowed
Days of Week:	Friday night through Sunday morning	
Time of Day:	5:00 p.m. to 9:00 a.m. following day	Allowed

I-95 Mainline Northbound June 25, 2022 to September 30, 2022		
		Temporary Lane Closures
Days of Week:	Sunday night through Friday morning	
Time of Day:	6:00 p.m. to 6:30 a.m. following day	Allowed
Day of Week:	Friday night through Sunday morning	
Time of Day:	9:00 p.m. to 9:00 a.m. following day	Allowed

I-95 Mainline Southbound July 1, 2022 to September 30, 2022		
		Temporary Lane Closures
Days of Week:	Sunday night through Friday morning	
Time of Day:	8:00 p.m. to 10:00 a.m. following day	Allowed

Exit 36 Eastbound July 1, 2022 to September 30, 2022		
		Temporary Lane Closures
Days of Week:	Sunday night through Thursday afternoon	
Time of Day:	7:00 p.m. to 2:00 p.m. following day	Allowed
Days of Week:	Thursday night through Friday afternoon	
Time of Day:	7:00 p.m. to 1:00 p.m. following day	Allowed
Days of Week:	Friday night through Sunday night	
Time of Day:	7:00 p.m. to 12:00 p.m. The following day	Allowed

Exit 36 Westbound July 1, 2022 to September 30, 2022		
		Temporary Lane Closures
Days of Week:	Sunday night through Friday morning	
Time of Day:	7:00 p.m. to 6:00 a.m. following day	Allowed
Days of Week:	Friday night through Sunday morning	
Time of Day:	7:00 p.m. to 8:00 a.m. following day	Allowed

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Specific Project Maintenance of Traffic Requirements – Exit 32 & Exit 42)

This Specification describes the specific project maintenance of traffic requirements for this Project.

The following minimum traffic requirements shall be maintained. These requirements may be adjusted based on the traffic volume when authorized by the Authority.

Maintenance of Traffic is required for the following operations.

- Island removal
- Island reconstruction
- Foundation installation and removal
- Mast Arm relocation
- Signage modification and installation
- Milling and Paving Operations
- Pavement Markings Layout and Placement

All temporary lane closures shall be made utilizing drums.

Three cones or drums shall be placed transversely across the closed lane for every quarter mile of lane closure.

The Contractor will be allowed to store drums on the traffic side of the guardrail (face of guardrail) during non-work hours or when drums are not required for a lane closure. The drums shall be placed no more than six inches from the face of guardrail. If there is a Lane 2 closure the drums need to be stored on non-traffic side of the guardrail.

Temporary lane closures shall be removed if construction is not ongoing. Unattended lane closures are not allowed unless included in the contract language or approved by the Resident as a long-term traffic control operation.

Portable light towers will be required to illuminate the night construction work area.

Exit 32 Off-Ramp/Route 111/Biddeford Connector Intersection Traffic Control Requirements

This Section outlines the minimum requirements that shall be maintained for work at the intersection of Exit 32 Off-Ramp/Route 111/Biddeford Connector. Operations are allowed as outlined below:

Route 111 paving includes, but is not necessarily limited to, saw cutting, pavement milling, pavement surfacing, island modification and installation of pavement markings.

Signal modifications includes, but is not necessarily limited to, installing new conduit, installation of concrete foundations, relocating the controller cabinet, relocating the existing mast arms, and installing a new pedestal pole and signal heads.

Intersection paving and signal relocation work shall be completed at night between 8:00 PM and 5:30 AM at which times lanes and shoulders are permitted to be closed. Work shall be scheduled and coordinated so lanes are not closed for the convenience of the contractor. The contractor shall set, operate, and maintain portable-changeable message signs (PCMS) on each approach to the intersection to provide advance notice (one week prior to the start of construction) of when lane closures are scheduled or in place. Two PCMS shall remain on the Exit 32 approach and the Connector approach for one week after construction is complete informing motorist of the change in intersection traffic pattern.

The contract shall provide 2 flaggers when the island modifications are being completed. The island modification may occur separately from the mast arm relocations.

The contractor shall provide 4 flaggers and a police officer when the signals will not be operational. The contractor shall coordinate with the Resident Engineer and the Biddeford PD a minimum of 2 weeks prior to relocating the mast arms.

The Contractor will reimburse the Authority at the rate of $500 per 15-minute period for each lane is not reopened by the times specified above.

The contractor shall provide all lane closures and maintenance of traffic control devices required to facilitate the intersection paving work to the authority for approval prior to beginning any of the work.

Foundation construction and conduit installation may occur during the day. If the contractor choses to perform this work during the day, the Exit 32 Off Ramp approach to Route 111 WB outside shoulder and right-turn lane and the Exit 32 On Ramp for Route 111 WB outside shoulder only can be closed Monday through Thursday 5:30 AM – 8:00 PM and Friday 5:30 AM – 3:00 PM

Exit 42 Off-Ramp/Payne Road/Haigis Parkway Intersection Traffic Control Requirements

This Section outlines the minimum requirements that shall be maintained for work at the Exit 42 Off-Ramp/Payne Road/Haigis Parkway. Operations are allowed as outlined below:

Signal modifications includes, but is not necessarily limited to, installing new conduit, installation of concrete foundations, and relocating the existing mast arms.

Intersection paving and signal relocation work shall be completed at night between 8:00 PM and 5:30 AM at which times lanes and shoulders are permitted to be closed. Work shall be scheduled and coordinated so lanes are not closed for limited activities, or for the convenience of the contractor. The contractor shall set, operate, and maintain portable-changeable message signs on each approach to the intersection to provide advance notice to when lane closures are scheduled or in place.

The contractor shall provide 4 flaggers and a police car when the signals will not be operational. The contractor shall coordinate with the Resident Engineer and the Scarborough PD a minimum of 2 weeks prior to relocating the mast arms.

The Contractor will reimburse the Authority at the rate of $500 per 15-minute period for each lane is not reopened by the times specified above.

The contractor shall provide all lane closures and maintenance of traffic control devices required to facilitate the intersection paving work to the authority for approval prior to beginning any of the work.

Foundation construction and conduit installation may occur during the day. If the contractor choses to perform this work during the day, the Exit 42 On Ramp from Payne Road WB outside shoulder only can be closed Monday through Thursday 5:30 AM – 8:00 PM and Friday 5:30 AM – 3:00 PM

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Temporary Toll Plaza Lane Closures)

The following minimum requirements shall be maintained:

Plaza lanes shall remain available for opening at all times except when the Contractor is performing work in, adjacent to or directly over the plaza lanes. A plaza lane closure is required when danger to the traveling public or turnpike employees may exist. The potential of any material falling onto the roadway shall be considered a potential danger. This shall include, but not necessarily be limited to, demolition debris, water, tools, equipment and material.

A plaza lane closure will be required whenever men or equipment will be present in a plaza lane. The Authority may also require adjacent lanes to be closed to protect the traveling public or turnpike employees. Temporary plaza lane closures will only be allowed at the times outlined in Table A. These hours may be adjusted based on the traffic volume each day by the Resident. Plaza lane closures not completely removed by the ending time specified will be subject to a lane rental fee of $250.00 per 10 minutes for every 10 minute increment beyond the specified ending time. Temporary plaza lane closures will not be allowed during periods of inclement weather as determined by the Authority. Temporary plaza lane closures may not be allowed on days or times when complete stoppages of traffic for other Authority projects are scheduled. The Authority reserves the right to order removal of approved plaza lane closures.

Requests for temporary traffic lane closures shall be submitted to the Resident for approval. The Resident is required to receive approval from the Maine Turnpike Authority's Plaza Supervisor for all plaza lane closures. The request shall be submitted to the Plaza Supervisor by the Resident at least one (1) working days prior to the day of the requested plaza lane closure. All requests must be received by 12:00 p.m. noon to be considered as received on that day. Requests received after 12:00 p.m. shall be considered as received the following day. The Contractor shall plan the work accordingly.

Some activities, which require plaza lane closures, will be considered favorably for night work. The Contractor shall submit a request in writing to the Resident. The approval of the request will be at the Resident's discretion and will not be unreasonably withheld.

Toll lane closures shall follow the times noted in section 652 - Specific Project Maintenance of Traffic Requirements. Toll lane closures must be scheduled one (1) week in advance, and occur outside of the various Holiday restrictions.

Multiple toll lanes may only be closed as approved by the Authority. Multiple toll lanes closures must be scheduled two (2) days in advance, and occur outside of the various Holiday restrictions.

SECTION 719

SIGNING MATERIAL

719.01 Reflective Sheeting

This Subsection is deleted in its entirety and replaced with the following:

Retroreflective sheeting for signs shall meet at a minimum the requirements for ASTM 4956 – Type XI (Prismatic) manufactured by 3M Company, for all signs.

Reflective sheeting, used in sign construction, shall have been manufactured within the six months immediately prior to the fabrication of each sign. Upon delivery at the job site of each shipment of signs, a letter of certification shall be provided that the reflective sheeting conforms to the requirements.

For Type 1 Guide Signs, all reflective sheeting shall be color matched on each sign unit.

All warning signs shall be fluorescent yellow except for Ramp Advisory Speed signs which shall be yellow.

All Construction Series signs that use orange backgrounds shall be fluorescent orange.

All Pedestrian Signs shall be fluorescent yellow-green.

EZ-PASS Purple shall conform to the FHWA Purple color box.

719.02 Demountable High Intensity Reflectorized Letters, Numerals, Symbols, and Borders

This Subsection, including the title, is deleted in its entirety and replaced with the following:

719.02 Letters, Numerals, Symbols, and Borders

All signs shall be manufactured utilizing Direct Applied letters, numerals, symbols and borders or be Digitally Printed meeting all sign sheeting manufacturer's (3M) requirements to ensure that the manufacturer's warranty will be in full effect.

All Type 1 overhead signs, Type 1 interchange signs and any other Type 1 signs over 100 square feet shall utilize Direct Applied letters, numerals, symbols and borders.

Direct Applied

Direct reflectorized applied letters, numerals, symbols and borders shall consist of cut out sheeting that shall meet at a minimum the requirements for ASTM 4956 – Type XI (Prismatic) sheeting. The sheeting material used for the direct applied legend shall be the same type as used for the background.

Digitally Printed

Digital printing methods may be used to produce the sign copy and borders on retroreflective sheeting. Retroreflective sheeting complying with ASTM D 4956 Type XI and designated by the manufacturer as suitable for digital printing traffic signs along with associated ink and premium overlay film. Digitally Printed signs shall meet all sign sheeting manufacturer's (3M) requirements to ensure that the manufacturer's warranty will be in full effect

Transparent and opaque durable inks used in digital printed sign copy and borders shall be as recommended by the sheeting manufacturer (3M). Digital printed traffic colors shall be properly applied and shall have a warranty life of the base retroreflective sign sheeting. Digitally printed signs shall present a flat surface, free from foreign material, and all copy and borders shall be clear and sharp. Digital printed signs shall conform to 70% of the retroreflective minimum values established for its type and color (applicable to traffic colors only), as required by ASTM D 4956. Digital printed signs shall meet the daytime color and luminance, and nighttime color requirements of ASTM D 4956. Printed traffic colors shall meet the accelerated weathering and colorfastness requirements of ASTM D 4956. Digitally printed black shall remain sufficiently opaque for its intended use for the warranty period of the base sheeting. No variations in color or overlapping of colors will be permitted.

Digitally printed traffic signs shall have an integrated engineered match component clear UV- premium protective overlay recommended by the sheeting manufacturer applied to the entire face of the sign.

All digitally printed traffic signs shall utilize an integrated engineered match component system for materials and printing process and equipment. The integrated engineered match component system shall consist of retroreflective sheeting, durable ink(s), and clear protective overlay film, as specified by the sheeting manufacturer, applied to aluminum substrate.

The sign fabricator shall use an integrated engineered match component system digital printer approved by the sheeting manufacturer. Each approved digital printer shall only use the compatible retroreflective sign sheeting manufacturer's engineered match component system products. The sign fabricator shall maintain their digital printer's color calibration according to the sheeting manufacturer's requirements to help ensure digitally printed signs meet the manufacturer's specifications. The fabricator shall be trained by the sheeting manufacturer to produce digitally printed traffic signs that qualify for the sheeting manufacturer's warranty.

General

Type 1 Guide Signs shall have two-inch-tall, series C text that indicates the sign size, and the sign install date (MM/YY) located two inches above the bottom border of the sign.

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART III – APPENDICES

APPENDIX A

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP)
NATURAL RESOURCES PROTECTION ACT
PERMIT BY RULE

From:	Donohue, Sean W.
To:	"DEP.PBRNotification@maine.gov"
Cc:	Baker, Eben; Howe, Joe; Meek, Lauren; Norwood IV, Ralph C.; MTA Jamie Mason (jmason@maineturnpike.com); Barnes, Ryan J.
Subject:	Portland SMRO - Saco - Maine Turnpike - NRPA PBR -Part 1 of 1
Date:	Tuesday, February 8, 2022 5:31:00 PM
Attachments:	image001.jpg image002.jpg image003.png image004.png image005.png image006.png MTA-PBR#11-Exit 36 Paving Maintenance and Culverts.pdf

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Southern Maine Regional Office Staff,

Attached please find a Permit by Rule Notification for proposed highway maintenance and safety improvement work in the Exit 36 vicinity in Saco. The work is described in more detail in the attached PBR Notification. If you need additional information or have any questions, please let me know.

Thank you,

Sean

Sean Donohue, LSS
Permitting Coordinator
Environmental Liaison
Maine Turnpike Authority
2360 Congress Street
Portland, ME 04102
Tel: 207-482-8275
Cell: 207-232-7130
Fax: 207-878-8613
sdonohue@maineturnpike.com

February 8, 2022 *Via Email DEP.PBRNotification@maine.gov*

Maine Department of Environmental Protection
312 Canco Road
Portland, ME 04103

Re: Permit by Rule Notification, Exit 36 Pavement Rehabilitation, Safety Improvements, and Maintenance Projects – Maine Turnpike Authority, Saco

The Maine Turnpike Authority (MTA) is submitting this Permit by Rule (PBR) notification for state transportation facilities (PBR Section 11) and activities in/on/over significant vernal pool habitat (PBR Section 19) associated with the Exit 36 pavement rehabilitation, safety improvements, and maintenance projects (Project). The Project will consist of pavement rehabilitation, installing safety improvements, and maintaining existing culvert infrastructure at Exit 36 from Turnpike mile marker (MM) 35.5 to 36.2 in Saco. Additionally, the Project will restore outlet ditching at an existing culvert at MM 34.9 and remove 20 linear feet of separated twin culvert ends at Goosefare Brook east of the Exit 36 northbound off ramp.

The attached application materials include:

- The PBR form and evidence of fee payment;
- United States Geological Survey topographic map (Attachment 1);
- Project Plans (Attachment 2);
- Wetland and Watercourse Delineation and Vernal Pool Surveys Report (Attachment 3); and,
- Consultation Letter Sent to Maine Department of Inland Fisheries and Wildlife (Attachment 4).

The $266 application fee was submitted through the Maine Department of Environmental Protection (Maine DEP) payment portal, and a copy of the payment portal confirmation is included.

Site Evaluation and Design

On behalf of MTA, Stantec performed wetland and watercourse delineations and vernal pool/potential vernal pool surveys for the Project area. A total of 16 wetlands and 12 watercourses were delineated and one potential vernal pool was identified. The wetland delineation report, included as Attachment 3, contains representative photographs of identified natural resources. The Project design objective was to complete necessary maintenance work and minimize environmental impacts. Due to various constraints, the Project cannot entirely avoid impacts to identified natural resources, while also performing necessary maintenance work.

The locations of erosion and sedimentation perimeter controls to protect adjacent resources are depicted on the Project plan set (Attachment 2). All construction activities undertaken will be conducted in accordance with the Maine Department of Transportation's (MaineDOT) Best Management Practices (BMPs) for Erosion and Sediment Control.[1] Temporary construction mats will be utilized to minimize soil disturbance associated with culvert outlet ditching at MM 34.9. All cleared and disturbed areas, aside from areas of riprap installation, will be stabilized with seed and mulch and allowed to revegetate into a meadow environment. Erosion controls will be removed following final stabilization of the area.

[1] MaineDOT. 2008. Best Management Practices for Erosion and Sedimentation Control. Available online at: https://www.maine.gov/mdot/env/documents/bmp/BMP2008full.pdf.

Wetland Impacts

The Project is anticipated to result in 5,677 square feet (sf) of temporary wetland impacts as a result of vegetation clearing and 4,436 sf of permanent wetland impacts as a result of fill or grading. Outside of fill/grading limits, no stumping/grubbing is proposed within vegetation clearing areas. Additionally, 4,309 sf of temporary construction mats are proposed to minimize soil disturbance within the culvert outlet ditching at MM 34.9. It is MTA's understanding that temporary construction mats are not considered a jurisdictional impact by Maine DEP. Wetland impacts are summarized in Table 1 below.

Table 1. Summary of Wetland Impacts

Wetland ID	Wetland Type[1]	Direct Impact - Permanent Fill/Grading (sf)	Indirect Impact - Vegetation Clearing (sf)[2]	Temporary Construction Mats (sf)[3]
W06	PEM	3,513	1,724	4,309
W27	PSS/PEM	27	2,394	0
W28	PFO	287	83	0
W45	PFO	514	1,097	0
W46	PFO	36	200	0
W47	PFO	59	263	0
Totals		**4,436**	**5,677**	**4,309**

[1] Wetland type based on Cowardin Classification System (Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States). PFO = Palustrine Forested Wetland; PSS = Palustrine Scrub Shrub Wetland; PEM = Palustrine Emergent Wetland. Wetland type is based on the existing conditions within the proposed impact area.
[2] No stumping or grubbing is proposed.
[3] Temporary Construction mat impacts occur within existing emergent wetland areas. It is the Applicant's understanding that temporary construction mats are not considered a jurisdictional impact by the Maine DEP.

Stream Impacts

The Goosefare Brook (S04) culvert end work will remove 20 linear feet of twin culvert ends, daylighting the stream, and remove 10 linear feet of sediment immediately downstream and between the culvert ends. The restored streambed will consist of riprap topped with special streambed fill. The daylighted stream channel will match into existing culvert outlets and existing stream bed, and a low-flow channel will be included within the restored segment of stream channel. The work will not permanently block fish passage and will increase stream habitat through culvert end removals. In-stream work will be completed in the dry with cofferdams during the low flow work window (July 15 – September 30) while maintaining downstream flows. Temporary cofferdams, installed following MaineDOT BMPs, will be utilized to isolate the work area. The twin culvert removal will result in 80 square feet of permanent stream impacts (streambed restoration) and 84 square feet of temporary stream impacts (cofferdams).

Activities In/On/Over Significant Vernal Pool Habitat

One potential vernal pool (PVP) was identified during field surveys and this PVP is considered a potential significant vernal pool (PSVP01, Attachment 2 – Culvert Outlet Ditching Plan) as the pool is of natural origin and could potentially contain requisite numbers of indicator species to meet the criteria of a significant vernal pool. SVP habitat consists of the vernal pool depression and the portion of the critical terrestrial habitat (CTH) within a 250-foot radius of the depression. Ditching will occur within the CTH of PSVP01. However, no direct impacts to the PSVP depression and no conversion of forested habitat within the CTH is associated with this work. Upland clearing limits were designed to avoid impacts to the CTH.

The proposed work (i.e., ditching through emergent wetlands with riprap) in CTH within 250 feet of the SVP depression will not exceed 25% of the CTH, resulting in more than 75% of undeveloped CTH for the SVP maintained in its current state following Project construction. The total ditching impact within the CTH of PSVP01 is approximately 2,354 sf, 1.2% of the total CTH of PSVP01 (4.51 acres).

Please contact me at sdonohue@maineturnpike.com or 207-482-8275 if you have any questions regarding the enclosed PBR notification materials or need additional information.

Sincerely,
Maine Turnpike Authority

Sean Donohue

Digitally signed by Sean Donohue
DN: cn=Sean Donohue, o=Maine Turnpike Authority, ou, email=sdonohue@maineturnpike.com, c=US
Date: 2022.02.08 15:25:28 -05'00'

Sean Donohue
Permitting Coordinator/Environmental Liaison

Attachments: Permit by Rule Notification Form and Evidence of Fee Payment
Attachment 1 – USGS Project Location Map
Attachment 2 – Project Plans
Attachment 3 – Wetland and Watercourse Delineation and Vernal Pool Survey Report
Attachment 4 – Consultation Letter Sent to Maine Department of Inland Fisheries and Wildlife

Cc: Ralph Norwood, MTA
Lauren Meek, Stantec
Joe Howe, Stantec
Eben Baker, Stantec

DEPARTMENT OF ENVIRONMENTAL PROTECTION

PERMIT BY RULE NOTIFICATION FORM

(For use with DEP Regulation, Natural Resources Protection Act - Permit by Rule Standards, Chapter 305)

APPLICANT INFORMATION (Owner)		AGENT INFORMATION (If Applying on Behalf of Owner)	
Name:	Maine Turnpike Authority, Sean Donohue	Name:	
Mailing Address:	2360 Congress Street	Mailing Address:	
Mailing Address:		Mailing Address:	
Town/State/Zip:	Portland, ME 04102	Town/State/Zip:	
Daytime Phone #:	(207) 482-8275 Ext:	Daytime Phone #:	Ext:
Email Address:	sdonohue@maineturnpike.org	Email Address:	

PROJECT INFORMATION

Part of a larger project? (check 1):	☐ Yes ☑ No	After the Fact? (check 1):	☐ Yes ☑ No	Project involves work below mean low water? (check 1):	☐ Yes ☑ No	Name of waterbody:	Goosefare Brook
Project Town:	Saco		Town Email Address:	dtwomey@sacomaine.org		Map and Lot Number:	MTA ROW & Map 88, Lot 2
Brief Project Description:	Performing pavement rehabilitation, installing safety improvements, and maintaining existing culvert infrastructure. Removal of 20 linear feet of separated twin culverts at Goosefare Brook.						
Project Location & Brief Directions to Site:	I-95 Saco southbound at MM 34.9 (south of Route 112 croosing), I-95 between MM 35.5 and 36.2 (north of Route 112 crossing to north of Exit 36), and I-195 to tolls from Exit 36						

PERMIT BY RULE (PBR) SECTIONS (Check at least one): I am filing notice of my intent to carry out work that meets the requirements for Permit-by-Rule (PBR) under DEP Rules, Chapter 305. I and my agent(s), if any, have read and will comply with all of the standards in the Sections checked below.

- ☐ **Sec. (2) Act. Adj. to Prot. Natural Res.**
- ☐ **Sec. (3) Intake Pipes**
- ☐ **Sec. (4) Replacement of Structures**
- ☐ **Sec. (6) Movement of Rocks or Veg.**
- ☐ **Sec. (7) Outfall Pipes**
- ☐ **Sec. (8) Shoreline Stabilization**
- ☐ **Sec. (9) Utility Crossing**
- ☐ **Sec. (10) Stream Crossing**
- ☑ **Sec. (11) State Transportation Facilities**
- ☐ **Sec. (12) Restoration of Natural Areas**
- ☐ **Sec. (13) F&W Creat./Water Qual. Improv.**
- ☐ **Sec. (15) Public Boat Ramps**
- ☐ **Sec. (16) Coastal Sand Dune Projects**
- ☐ **Sec. (17) Transfer/Permit Extension**
- ☐ **Sec. (18) Maintenance Dredging**
- ☑ **Sec. (19) Act. Near SVP Habitat**
- ☐ **Sec. (20) Act. Near Waterfowl/Bird Habitat**

NOTE: Municipal permits also *may* be required. Contact your local code enforcement office for information. Federal permits may be required for stream crossings and for projects involving wetland fill. Contact the Army Corps of Engineers at the Maine Project Office for information.

NOTIFICATION FORMS CANNOT BE ACCEPTED WITHOUT THE NECESSARY ATTACHMENTS AND FEE

- ☑ ***Attach*** **all required submissions for the PBR Section(s) checked above. The required submissions for each PBR Section are outlined in Chapter 305 and may differ depending on the Section you are submitting under.**
- ☑ ***Attach*** a location map that clearly identifies the site (U.S.G.S. topo map, Maine Atlas & Gazetteer, or similar).
- ☐ ***Attach*** *Proof of Legal Name* if applicant is a corporation, LLC, or other legal entity. Provide a copy of Secretary of State's *registration information* (available at http://icrs.informe.org/nei-sos-icrs/ICRS?MainPage=x). Individuals and municipalities are not required to provide any proof of identity.

FEE: Pay by credit card at the Payment Portal. The Permit-by-Rule fee may be found here https://www.maine.gov/dep/feeschedule.pdf and is currently $266.

- ☑ ***Attach*** **payment confirmation from the Payment Portal when filing this notification form.**

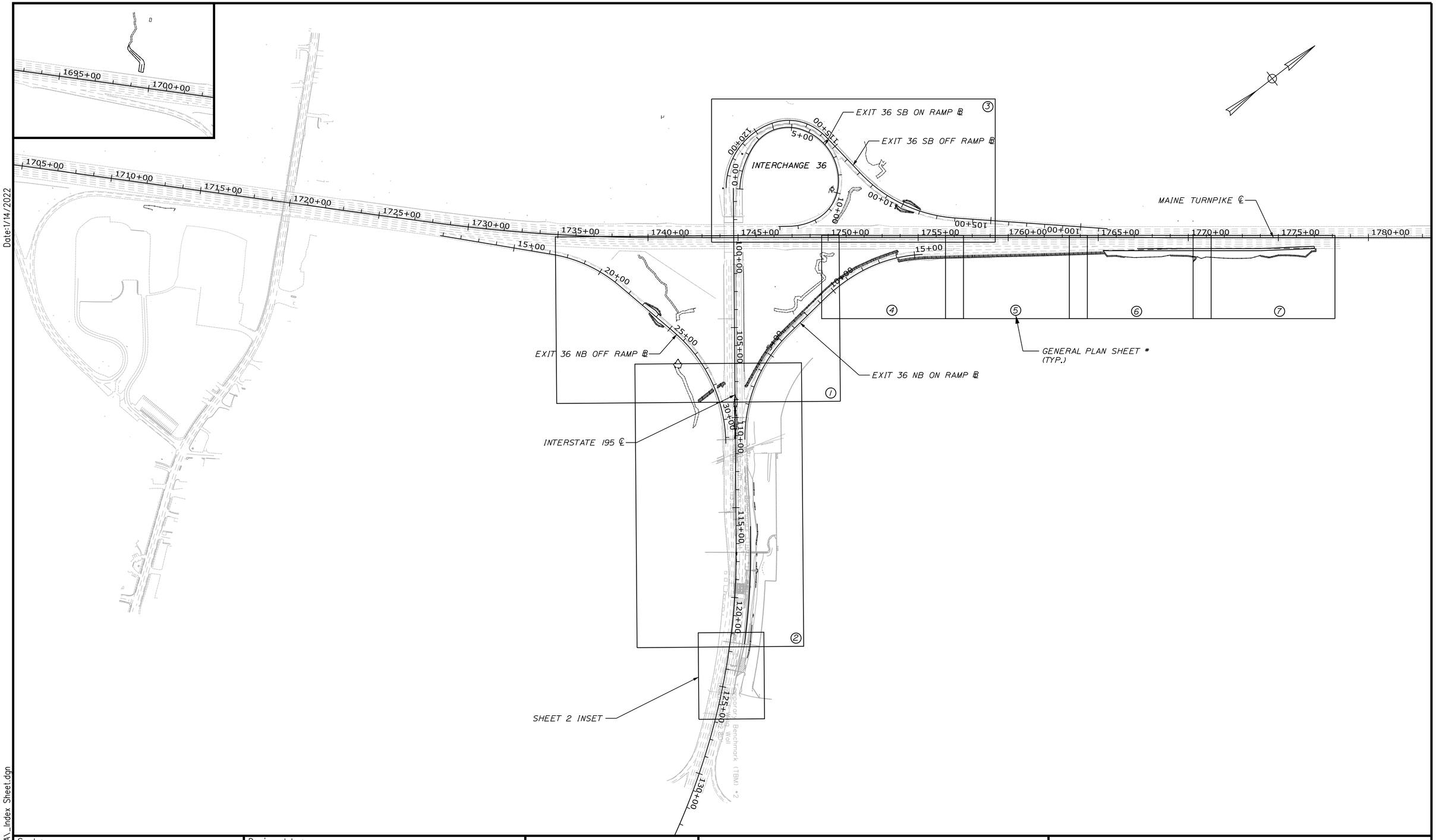
Signature & Certification:

- I authorize staff of the Departments of Environmental Protection, Inland Fisheries & Wildlife, and Marine Resources to access the project site for the purpose of determining compliance with the rules.
- I understand that this PBR becomes effective 14 calendar days after receipt by the Department of this completed form, the required submissions, and fee, *unless the Department approves or denies the PBR prior to that date.*

By signing this Notification Form, I represent that the project meets all applicability requirements and standards in Chapter 305 rule and that the applicant has sufficient title, right, or interest in the property where the activity takes place.

Signature of Agent or Applicant (may be typed):	Sean Donohue — Digitally signed by Sean Donohue DN: cn=Sean Donohue, o=Maine Turnpike Authority, ou, email=sdonohue@maineturnpike.com, c=US Date: 2022.02.08 14:44:58 -05'00'	Date:	02/08/2022

***Keep a copy as a record of permit*.** Email this completed form with attachments to DEP at: DEP.PBRNotification@maine.gov. DEP will send a copy to the Town Office as evidence of DEP's receipt of notification. No further authorization will be issued by DEP after receipt of notice. A PBR is valid for two years, except Section 4, "Replacement of Structures," are valid for three years. **Work carried out in violation of the Natural Resources Protection Act or any provision in Chapter 305 is subject to enforcement.**



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Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION	1\	4\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

STANTEC CONSULTING SERVICES INC.
2211 CONGRESS STREET SUITE 380
PORTLAND, ME 04102
TEL (207) 887-3448
FAX (207) 883-3376

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS

INDEX PLAN

SHEET NUMBER: GP-01

CONTRACT:2022.02

Date:2/8/2022

MAINE TURNPIKE ℄

1740+00 1741+00 1742+00 1743+00 1744+00 1745+00 1746+00 1747+00 1748+00 1749+00 1750+00

100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00

18+00 19+00 20+00 21+00 EXIT 36 NB OFF RAMP ℄ 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00

10+00 9+00 8+00 7+00 6+00 EXIT 36 NB ON RAMP ℄ 5+00 4+00 3+00

I-195 ℄

S04 TOTAL AREA = 1.455 SF
TEMP. IMPACTS = 45 SF

W27 TOTAL AREA = 4706 SF
PERM. IMPACTS = 27 SF
TEMP. IMPACTS = 2394 SF

Q QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED

PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION

BRANCH ELECTRICAL - LIGHTING(SCHEDULE 80 CONDUIT. SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Scale: 50 0 50 100 Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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PORTLAND, ME 04102
TEL (207) 887-3448
FAX (207) 883-3376

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (1 OF 7)

SHEET NUMBER: GP-02

CONTRACT:2022.02

30 OF 53

Filename: ...\00\HIGHWAY\MSTA_GP_01.dgn

Q QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED

PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION

BRANCH ELECTRICAL - LIGHTING(SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Date:2/8/2022

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No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by:

Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

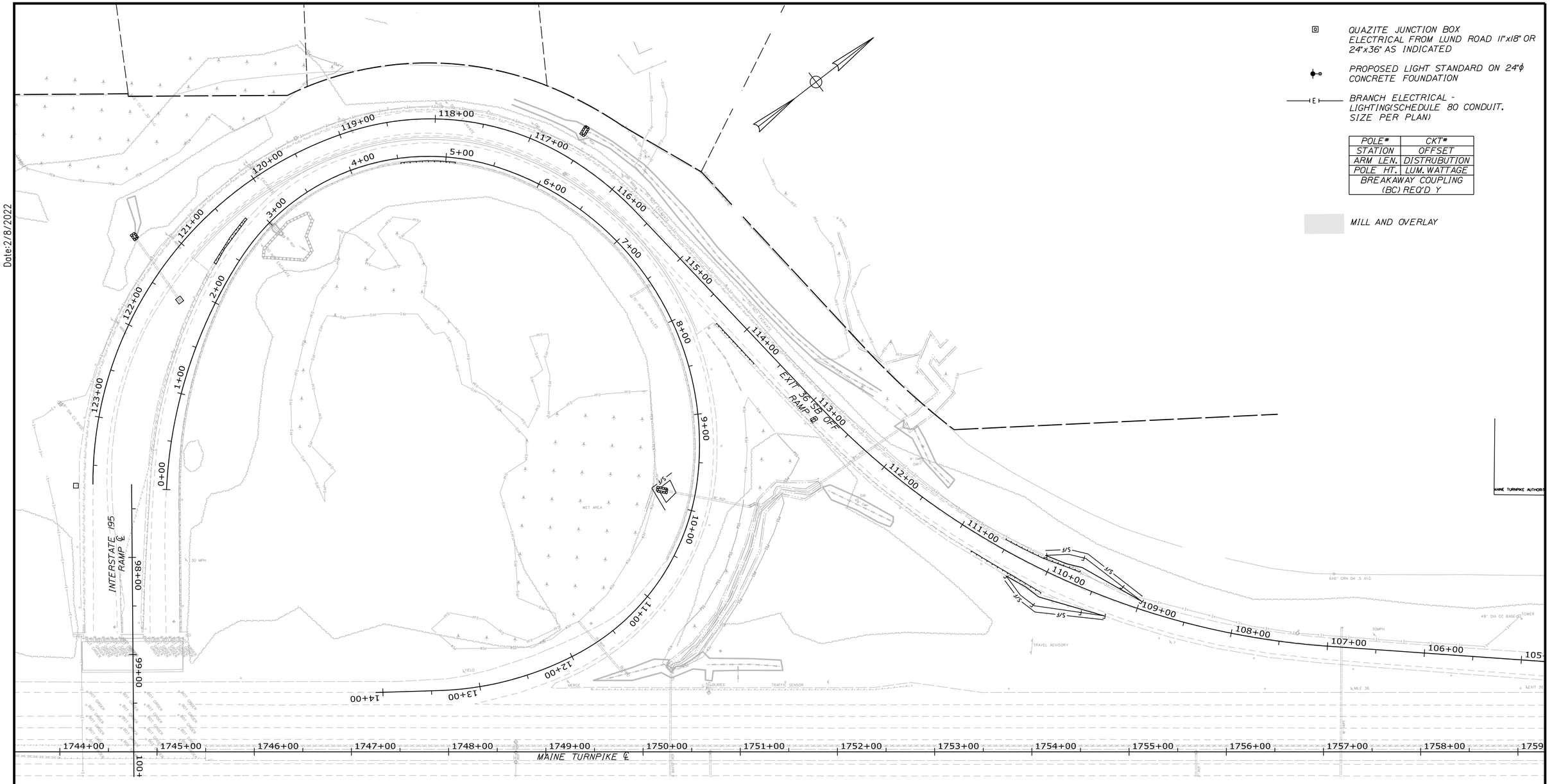
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (2 OF 7)

SHEET NUMBER: GP-03

CONTRACT:2022.02

Date:2/8/2022



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No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

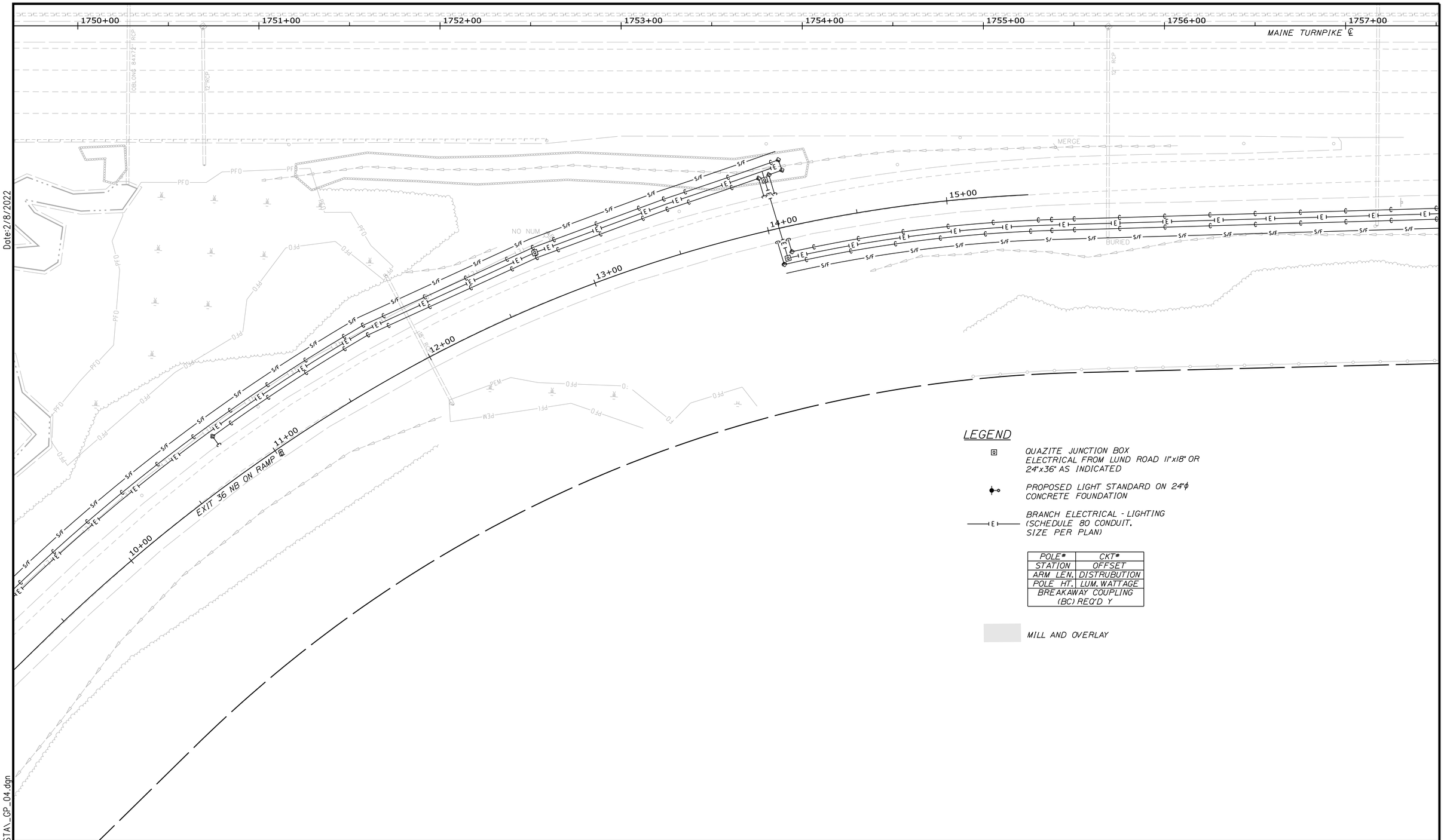
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (3 OF 7)

SHEET NUMBER: GP-04

CONTRACT:2022.02

Date:2/8/2022



LEGEND

- QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED
- PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION
- BRANCH ELECTRICAL - LIGHTING (SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

- MILL AND OVERLAY

Scale: 25 0 25 50 Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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FAX (207) 883-3376

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (4 OF 7)

SHEET NUMBER: GP-05

CONTRACT:2022.02

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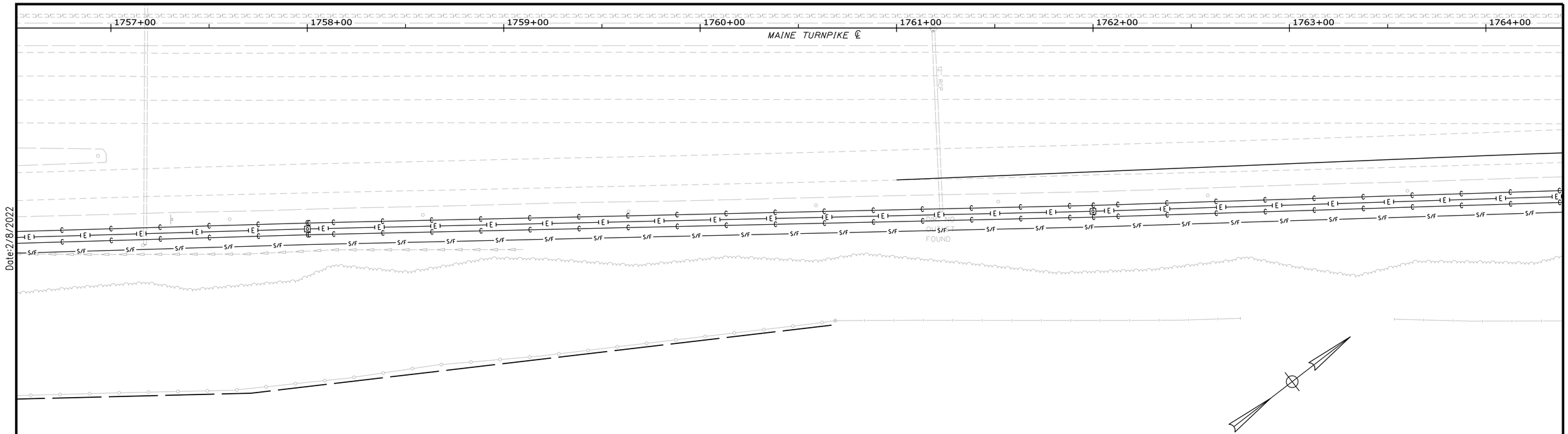


LEGEND

- ▣ QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED
- PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION
- —E— BRANCH ELECTRICAL - LIGHTING (SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Scale: 25 0 25 50
Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

STANTEC CONSULTING SERVICES INC.
2211 CONGRESS STREET SUITE 380
PORTLAND, ME 04102
TEL (207) 887-3448
FAX (207) 883-3376

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

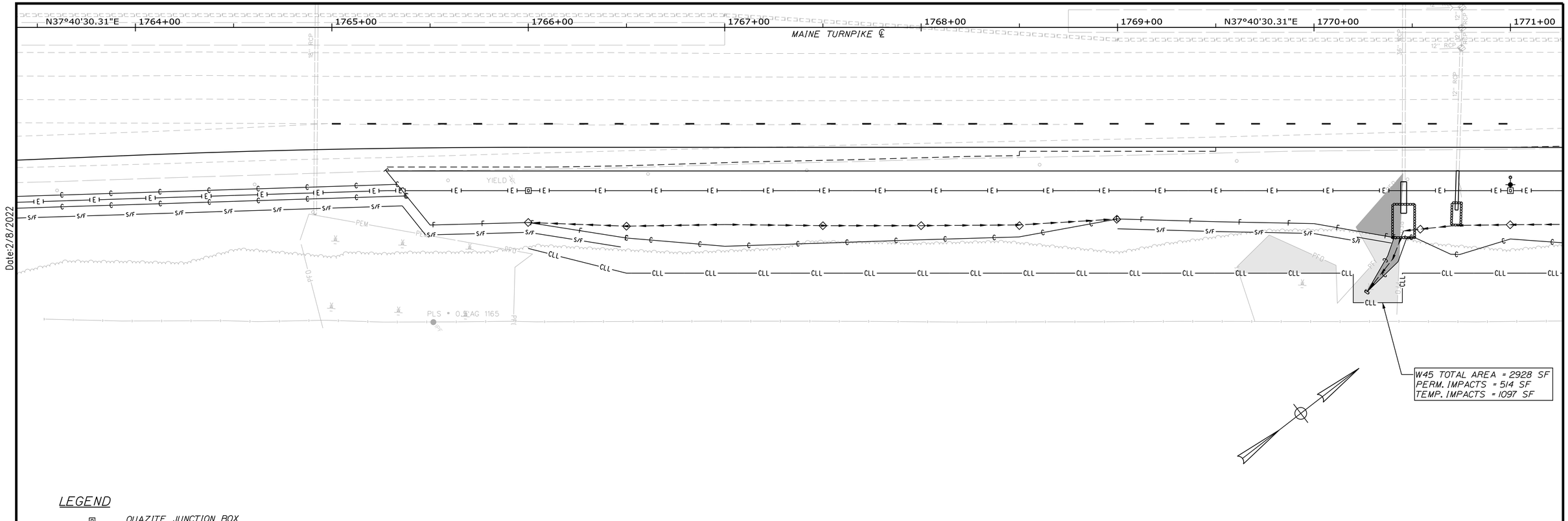
EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (5 OF 7)

SHEET NUMBER: GP-06

CONTRACT:2022.02

Date:2/8/2022

Filename: ...\00\HIGHWAY\MSTA_GP_05.dgn



Date:2/8/2022

LEGEND

- QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED
- PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION
- BRANCH ELECTRICAL - LIGHTING (SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Filename: ...\00\HIGHWAY\MSTA_GP_06.dgn

Scale: 25 0 25 50
Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

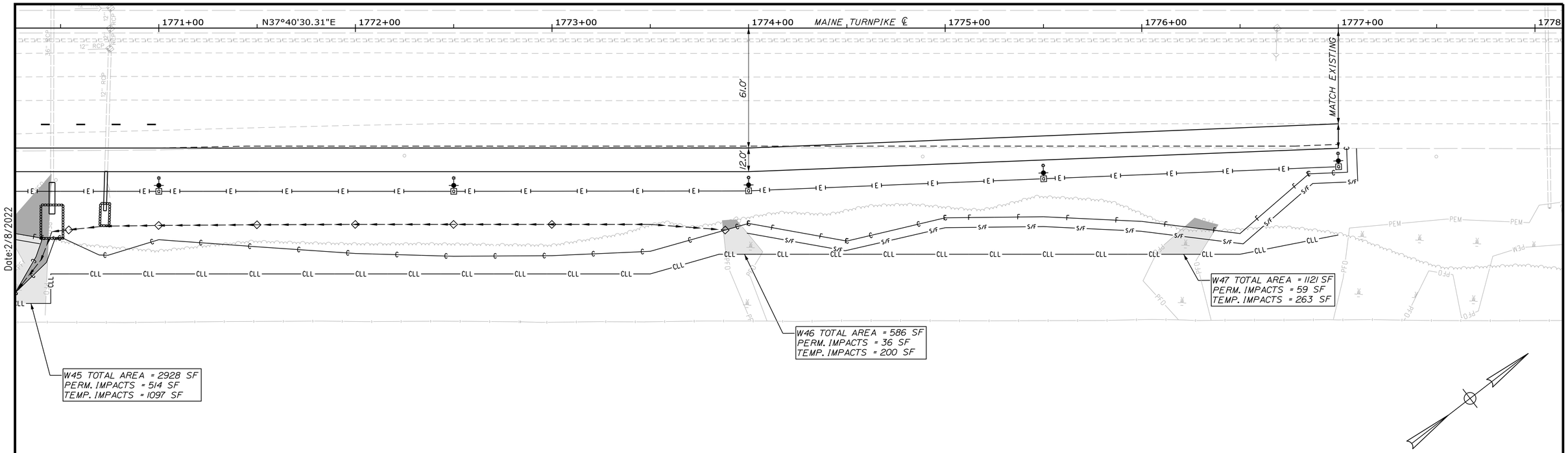
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (6 OF 7)

SHEET NUMBER: GP-07

CONTRACT:2022.02



LEGEND

- QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED
- PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION
- BRANCH ELECTRICAL - LIGHTING (SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Scale: 25 0 25 50 Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

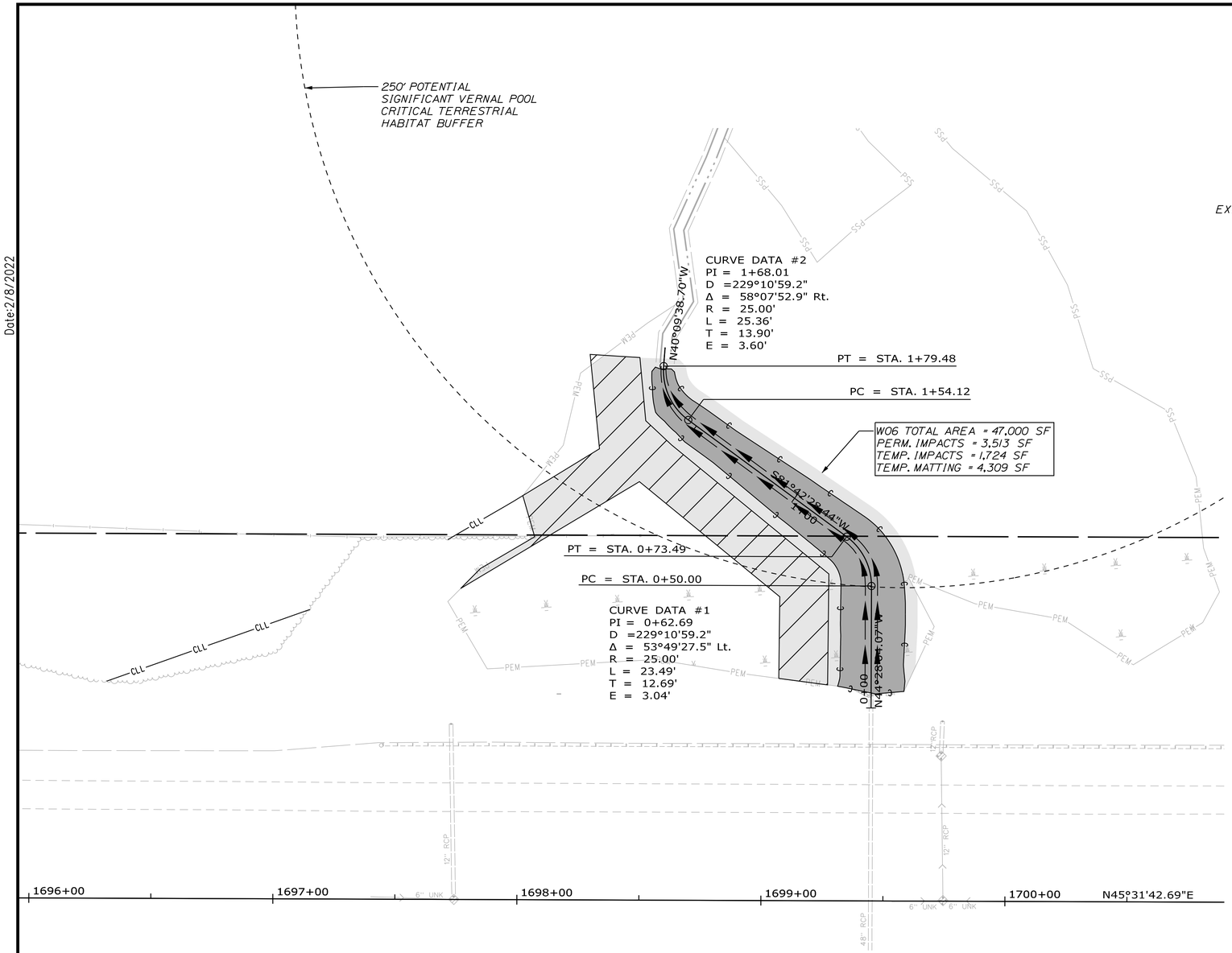
EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (7 OF 7)

SHEET NUMBER: GP-08

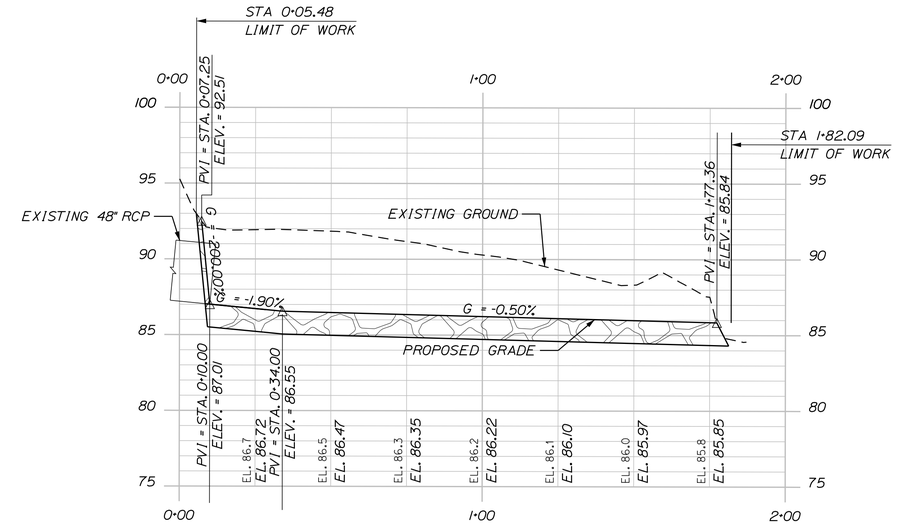
CONTRACT:2022.02

Filename: ...\00\HIGHWAY\MSTA_GP_07.dgn

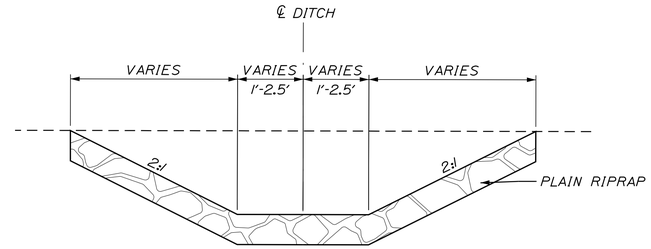
Date:2/8/2022



OUTLET DITCH PLAN VIEW
SCALE = 1" : 25'



OUTLET DITCH PROFILE
SCALE = 1" : 25'



OUTLET DITCH TYPICAL SECTION
NOT TO SCALE

Filename: ...\00\HIGHWAY\MSTA_Ditch.dgn

Scale: AS NOTED

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

STANTEC CONSULTING SERVICES INC.
2211 CONGRESS STREET SUITE 380
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MAINE TURNPIKE

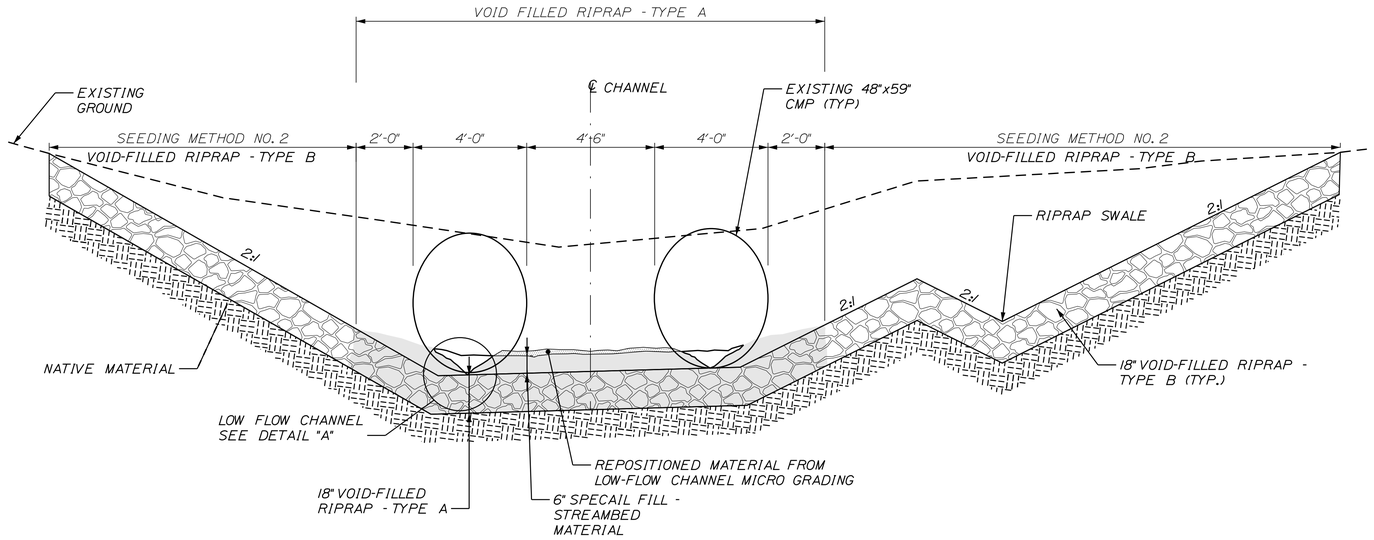
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS CULVERT OUTLET DITCHING PLAN STA. 1699+45

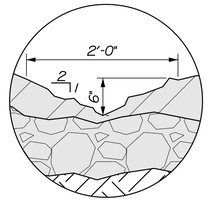
SHEET NUMBER: GP-08

CONTRACT:2022.02



TYPICAL STREAM RESTORATION SECTION

SCALE = 3/8": 1'

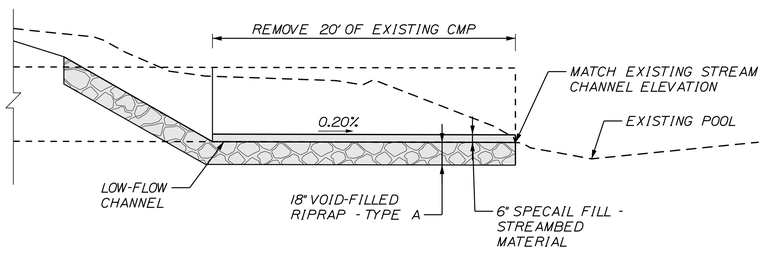


DETAIL "A" - LOW FLOW CHANNEL

SCALE: 1" = 1'-0"

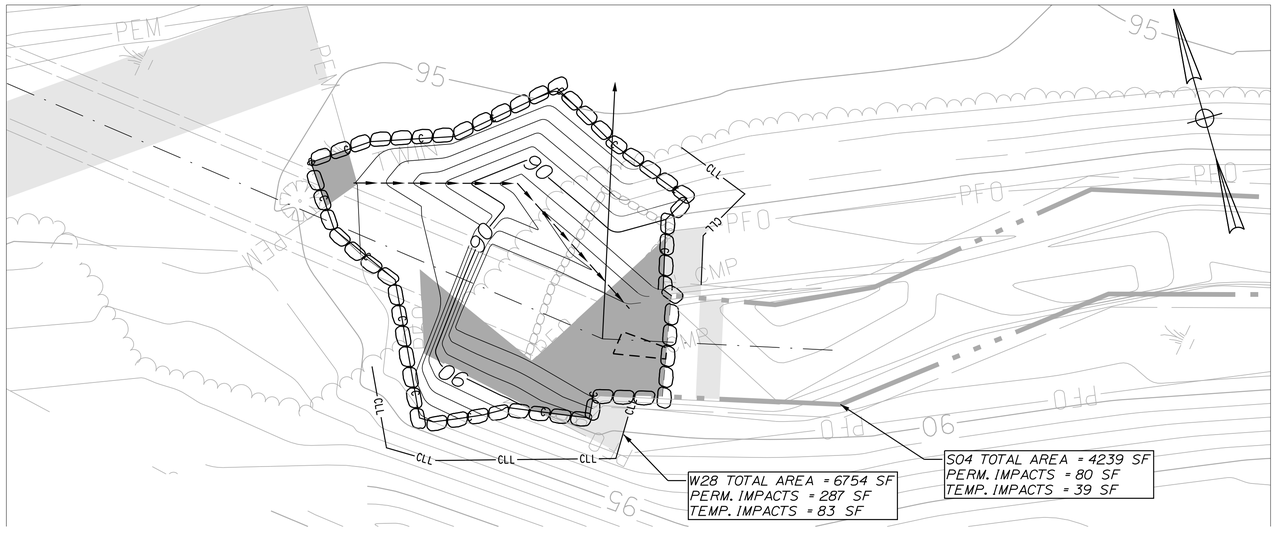
NOTES:

1. PRIOR TO INSTALLING THE SPECIAL FILL - STREAMBED MATERIAL, THE VOID-FILLED RIPRAP TYPE "A" SHALL BE FLOODED AND OBSERVED TO ENSURE THAT THE TOP LAYER OF THE VOID-FILLED RIPRAP TYPE "A" WILL POND WATER ON THE SURFACE. ADDITIONAL MATERIAL WITH SIGNIFICANT PROPORTION OF FINES SHALL BE WASHED-IN TO FILL AND SEAL ANY REMAINING VOIDS UNTIL WATER PONDS ON THE SURFACE.
2. LOW-FLOW CHANNEL VARIES HORIZONTALLY FROM 0' TO 1' TO EITHER SIDE OF CHANNEL CENTERLINE. SEE PLAN FOR APPROXIMATE ALIGNMENT OF THE LOW-FLOW CHANNEL.



TYPICAL CULVERT REMOVAL AND CHANNEL PROFILE

SCALE = 1": 5'



GOOSEFARE BROOK PLAN VIEW

SCALE = 1": 10'

Filename: ...\MSTA_Culvert Removal.dgn

Scale: AS NOTED

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GOOSEFARE BROOK CULVERT REMOVAL PLAN

SHEET NUMBER: GP-09

CONTRACT:2022.02

D. Definitions. The following terms, as used in this chapter, have the following meanings, unless the context indicates otherwise:

(1) **Cross-sectional area**. The cross-sectional area of a stream channel is determined by multiplying the stream channel width by the average stream channel depth. The stream channel width is the straight line distance from the normal high water line on one side of the channel to the normal high water line on the opposite side of the channel. The average stream channel depth is the average of the vertical distances from a straight line between the normal high water marks of the stream channel to the bottom of the channel.

(2) **Crossing**. Any activity extending from one side to the opposite side of a protected natural resource, or to an island or upland within a protected natural resource whether under, through or over that resource. Such activities include, but are not limited to roads, fords, bridges, culverts, utility lines, water lines, sewer lines and cables, and the clearing and removal of vegetation necessary to install and maintain these crossings.

(3) **Fill**. a. (verb) To put into or upon, supply to, or allow to enter a water body or wetland any earth, rock, gravel, sand, silt, clay, peat, or debris; b. (noun) Material, other than structures, placed in or adjacent to a water body or wetland.

(4) **Ford**. A permanent crossing of a stream utilizing an area of existing, non-erodible substrate of the stream, such as ledge or cobble, or by placing non-erodible material such as stone or geotextile on the stream bottom.

(5) **Perennial watercourse**. A river, stream or brook depicted as a solid line on the most recent edition of a United States Geological Survey 7.5 minute series topographic map, or if not available, a 15 minute series topographic map.

(6) **Riprap.** Heavy, irregularly-shaped rocks that are fit into place, without mortar, on a slope. Square or rectangular rocks with flat faces, such as quarry stone or manufactured blocks, do not qualify as “irregularly-shaped”.

(7) **Used for navigation**. Those rivers, streams or brooks used by motorized watercraft.

11. State transportation facilities

A. Applicability

(1) This section applies to the maintenance, repair, reconstruction, rehabilitation, replacement or minor construction of a State Transportation Facility carried out by, or under the authority of, the Maine Department of Transportation (MaineDOT) or the Maine Turnpike Authority, including any testing or preconstruction engineering, and associated technical support services.

(2) This section does not apply to an activity within a coastal sand dune system.

NOTE: The construction of a transportation facility other than roads and associated facilities may be subject to the Storm Water Management Law, 38 M.R.S.A. Section 420-D.

B. Standards

(1) Photographs of the area to be altered by the activity must be taken before work on the site begins. The photographs must be kept on file and be made available at the request of the DEP.

(2) The activity must be reviewed by the Department of Inland Fisheries and Wildlife and the Department of Marine Resources, as applicable. The applicant must coordinate with the reviewing agencies and incorporate any recommendations from those agencies into the performance of the activity.

(3) All construction activities undertaken must be detailed in a site-specific Soil Erosion and Water Pollution Control Plan and conducted in accordance with MaineDOT's Best Management Practices for Erosion and Sediment Control, dated January 2000, and Standard Specifications, dated December 2002.

(4) Alignment changes may not exceed a distance of 200 feet between the old and new center lines in any natural resource.

(5) The activity may not alter more than 300 feet of shoreline (both shores added together) within a mile stretch of any river, stream or brook, including any bridge width or length of culvert.

(6) The activity may not alter more than 150 feet of shoreline (both shores added together) within a mile stretch of any outstanding river segment identified in 38 M.R.S.A. 480-P, including any bridge width or length of culvert.

(7) The activity must minimize wetland intrusion. The activity is exempt from the provisions of Chapter 310, the Wetland and Waterbodies Protection Rules, if the activity alters less than 15,000 square feet of natural resources per mile of roadway (centerline measurement) provided that the following impacts are not exceeded within the 15,000 square foot area:

(a) 1,000 square feet of coastal wetland consisting of salt tolerant vegetation or shellfish habitat; or

(b) 5,000 square feet of coastal wetland not containing salt tolerant vegetation or shellfish habitat; or

(c) 1,000 square feet of a great pond.

All other activities must be performed in compliance with all sections of Chapter 310, the Wetland Protection Rules, except 310.2(C), 5(A), 9(A), 9(B) and 9(C).

(8) The activity may not permanently block any fish passage in any watercourse containing fish. The applicant must coordinate with the reviewing agencies listed in paragraph 2 above to improve fish passage and incorporate any recommendations from those agencies into the performance of the activity.

NOTE: For guidance on meeting the design objectives for fish passage, including peak flow, maximum velocity, mining depth and gradient, see the MaineDOT Waterbody and Wildlife Crossing Policy and Design Guide (July 2008), developed in conjunction with state and federal resource and regulatory agencies.

(9) Rocks may not be removed from below the normal high water line of any coastal wetland, freshwater wetland, great pond, river, stream or brook except to the minimum extent necessary for completion of work within the limits of construction.

(10) If work is performed in a river, stream or brook that is less than three feet deep at the time and location of the activity, the applicant must isolate the work area from the resource and divert stream flows around the work area, maintaining downstream flows while work is in progress.

(11) Wheeled or tracked equipment may not operate in the water. Equipment operating on the shore may reach into the water with a bucket or similar extension. Equipment may cross streams on rock, gravel or ledge bottom. If avoiding the operation of wheeled or tracked equipment in the water is not possible, the applicant must explain the need to operate in the water. Approval from the DEP to operate in the water must be in writing, and any recommendations from the DEP must be incorporated into the performance of the activity.

(12) All wheeled or tracked equipment that must travel or work in a vegetated wetland area must travel and work on mats or platforms.

(13) Any debris or excavated material must be stockpiled either outside the wetland or on mats or platforms. Erosion and sediment control best management practices must be used, where necessary, to prevent sedimentation. Any debris generated during the activity must be prevented from washing downstream and must be removed from the wetland or water body. Disposal of debris must be in conformance with the Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Section 1301 *et seq.*

(14) Work below the normal high water line of a great pond, river, stream or brook must be done at low water except for emergency work or work agreed to by the resource agencies listed in paragraph 2 above.

(15) Perimeter controls must be installed before the work starts. Disturbance of natural resources beyond the construction limits shown on the plans is not allowed under this rule.

NOTE: Guidance on the location of construction limits can be obtained from the on site Construction Manager.

(16) The use of untreated lumber is preferred. Lumber pressure treated with chromated copper arsenate (CCA) may be used only if necessary and only if use is allowed under federal law and not prohibited from sale under 38 M.R.S.A. 1682, and provided it is cured on dry land in a manner that exposes all surfaces to the air for a period of at least 21 days prior to construction. Wood treated with creosote or pentachlorophenol may not be used where it will contact water.

(17) A temporary road for equipment access must be constructed of crushed stone, blasted ledge, or similar materials that will not cause sedimentation or restrict fish passage. Such roads must be completely removed at the completion of the activity. In addition, any such temporary roads which are in rivers, streams or brooks, must allow for a passage of stormwater flows associated with a 10-year storm.

(18) Non-native species may not be planted in restored areas.

(19) Disposal of debris must be in conformance with Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Sections 1301 *et seq.*

(20) Disturbance of vegetation must be avoided, if possible. Where vegetation is disturbed outside of the area covered by any road or structure construction, it must be reestablished immediately upon completion of the activity and must be maintained.

(21) A vegetated area at least 25 feet wide must be established and maintained between any new stormwater outfall structure and the high water line of any open water body. A velocity reducing structure must be constructed at the outlet of the stormwater outfall that will create sheet flow of stormwater, and prevent erosion of soil within the vegetated buffer. If the 25 foot vegetated buffer is not practicable, the applicant must explain the reason for a lesser setback in writing. Approval from the DEP must be in writing and any recommendations must be incorporated into the activity.

C. Definitions. The following terms, as used in this chapter, have the following meanings, unless the context indicates otherwise:

(1) **Diversion**. The rerouting of a river, stream or brook around a construction site and then back to the downstream channel.

(2) **Fill**. a. (verb) To put into or upon, supply to, or allow to enter a water body or wetland any earth, rock, gravel, sand, silt, clay, peat, or debris; b. (noun) Material, other than structures, placed in or immediately adjacent to a wetland or water body.

(3) **Floodplain wetlands**. Freshwater wetlands that are inundated with flood water during a 100-year flood event based on flood insurance maps produced by the Federal Emergency Agency or other site specific information.

(4) **Riprap**. Heavy, irregularly shaped rocks that are fit into place, without mortar, on a slope as defined in the MaineDOT Standard Specifications, dated December 2002.

12. Restoration of natural areas

A. Applicability

(1) This section applies to the restoration of an altered portion of a coastal wetland, freshwater wetland, great pond, river, stream or brook to its pre-existing natural condition through the removal of fill, structures or debris which is located in, on over, or adjacent to the natural resource.

(3) For a dredge activity in tidal waters, the activity must occur during the time period approved by the Department of Marine Resources.

(4) Any debris or dredged material generated during the activity may not be disposed of in any protected natural resource unless otherwise allowed in this chapter and the disposal conforms with the Maine Hazardous Waste, Septage and Solid Waste Management Act, 38 M.R.S.A. Sections 1301 *et seq.*

D. Definitions. The following terms, as used in this chapter, have the following meanings, unless the context indicates otherwise:

(1) **Dredge**. To move or remove, by digging scooping or suctioning any sand, silt, mud, gravel, rock, or other material from the bottom of a water body or wetland surface.

(2) **Dredge spoils**. Sand, silt, mud, gravel rock or other sediment or material that is moved from coastal wetlands, great ponds or rivers, streams or brooks.

19. Activities in, on or over significant vernal pool habitat

A. Applicability

(1) This section applies to activities in, on, or over a significant vernal pool habitat or a potential significant vernal pool habitat. Significant vernal pool habitat consists of a vernal pool depression and the portion of the critical terrestrial habitat within a 250 foot radius of the spring or fall high water mark of the depression.

NOTE: The 250 feet of critical terrestrial habitat protected as significant vernal pool habitat is only a portion of the habitat used by adult wood frogs, ambystomatid salamanders, and threatened and endangered species. Tracking studies of adult pool-breeding amphibians have shown that they can travel over a third-mile away from their breeding pool, and that a radius of 750 feet around the pool is optimal for protecting viable amphibian populations. The DEP encourages efforts to protect more habitat adjacent to a vernal pool than this regulation has authority over.

(2) This section does not apply to an activity that is not or will not be in compliance with the terms and conditions of a permit issued under the Site Location of Development Law, 38 M.R.S.A. Sections 481 to 490, the Stormwater Management Law, 38 M.R.S.A. Section 420-D, or the Natural Resources Protection Act, 38 M.R.S.A. Section 480-A to BB.

NOTE: For additional regulatory provisions applicable to significant vernal pools, see 06-096 CMR 335, Significant Wildlife Habitat.

B. Submissions. The following items must be submitted with the notification, unless otherwise provided below.

(1) Photographs of the area that will be affected by the activity proposed.

(2) Photographs showing the completed project and the affected area must be submitted within 20 days of the activity's completion. The photographs must be sent with a copy of the notification form or labeled with the applicant's name and the town in which the activity took place.

(3) A scaled plan or drawing of the area affected, including but not limited to the following information:

(a) The entire property on which the activity will take place, including property lines, the vernal pool depression and remaining surrounding significant vernal pool habitat within 250 feet of the spring or fall high water mark of the depression, and the boundaries and location of other protected natural resources such as streams and other wetlands;

(b) Proposed activity and existing development on which the activity will take place, including buildings, parking areas, roads, fill areas, landscaped areas, etc.; and

(c) Any site constraints limiting development beyond the significant vernal pool habitat, such as steep slopes.

It is not necessary to have the plan formally prepared. However, it must be legible and drawn to a scale that allows a clear representation of distances and measurements on the plan.

C. Standards. The following measures must be taken during construction and maintenance of the activity.

(1) No disturbance within the vernal pool depression.

(2) Except for activities in existing developed areas, maintain a minimum of 75% of the critical terrestrial habitat as unfragmented forest with at least a partly-closed canopy of overstory trees to provide shade, deep litter and woody debris.

(3) Maintain or restore forest corridors connecting wetlands and significant vernal pools.

(4) Minimize forest floor disturbance.

(5) Maintain native understory vegetation and downed woody debris.

In determining whether the standard in Section 19(C)(2) has been met, the DEP considers only that portion of the critical terrestrial habitat within the significant vernal pool habitat, which is the area within a 250 foot radius of the spring or fall high water mark of the vernal pool depression.

(6) Take the following measures to prevent erosion of soil or fill material from disturbed areas:

(a) Staked hay bales or silt fence must be properly installed at the edge of disturbed areas between the activity and the vernal pool depression before the activity begins;

(b) Hay bales or silt fence barriers must be maintained until the disturbed area is permanently stabilized;

(c) Within 7 calendar days following the completion of any soil disturbance, and prior to any storm event, mulch must be spread on any exposed soils;

(d) All disturbed soils must be permanently stabilized; and

(e) Within 30 days of final stabilization of the site, any silt fence must be removed.

NOTE: For guidance on erosion and sedimentation controls, consult the Maine Erosion and Sediment Control BMPs, dated March 2003. This handbook and other references are available from the DEP.

(7) An activity of a type that would qualify for a permit by rule under one of the other sections of this chapter listed below, notwithstanding any restriction concerning significant wildlife habitat that may be in that section, must also meet the requirements of that section.

Sec. 4. Replacement of structures
Sec. 9. Crossings (utility lines, pipes, cables)
Sec. 10. Stream crossings (bridges, culverts, fords)
Sec. 11. State transportation facilities
Sec. 12. Restoration of natural areas.
Sec. 13. Habitat creation or enhancement and water quality improvement activities
Sec. 15. Public boat ramps
Sec. 16. Coastal sand dune projects

D. Definitions. The following terms, as used in this chapter, have the following meanings, unless the context indicates otherwise.

(1) **Critical terrestrial habitat**. Uplands and wetlands associated with significant vernal pools used by pool breeding amphibians for migration, feeding, and hibernation, in particular, forested wetlands and forested uplands that provide deep organic litter, coarse woody debris and canopy shade.

(2) **Existing developed area**. The area of property altered including, but not limited to, buildings, driveways, parking areas, wastewater disposal systems, lawns and other landscaped areas, as of September 1, 2007.

(3) **Significant vernal pool habitat**. A vernal pool depression and the portion of the critical terrestrial habitat within a 250 foot radius of the spring or fall high water mark of the depression. For complete criteria, see Chapter 335(9), Significant vernal pools.

(4) **Vernal pool depression**. This area includes the vernal pool depression up to the spring or fall high water mark, and includes any vegetation growing within the depression.

APPENDIX B

US ARMY CORPS OF ENGINEERS
GENERAL PERMIT

From: Kristoff, Richard C Jr CIV USARMY CENAE (USA)
To: Donohue, Sean W.
Subject: FW: MTA - Exit 36 Maintenance and Safety Work - Saco - SVN
Date: Thursday, February 10, 2022 6:24:49 AM
Attachments: image001.jpg
image002.jpg
image003.png
image004.png
image005.png
image006.png
MTA Exit 36 Safety & Maintenance SVN.pdf

Hello,

Thank you for the submission of the SV form.

Exit 36 has been issues Corps Permit Number NAE-2022-00376.

We have logged them into our database.

Please ensure the work is conducted in a manner which complies with all the terms and conditions of the 2020 Department of the Army General Permits for the State of Maine.

Thanks
Rick

From: Donohue, Sean W. <sdonohue@maineturnpike.com>
Sent: Tuesday, February 8, 2022 4:44 PM
To: cenae-r-me <cenae-r-me@usace.army.mil>
Cc: Baker, Eben <Eben.Baker@stantec.com>; Howe, Joe <Joe.Howe@stantec.com>; Meek, Lauren <Lauren.Meek@stantec.com>; Mason, H. James <jmason@maineturnpike.com>; Barnes, Ryan J. <RBarnes@maineturnpike.com>
Subject: [URL Verdict: Neutral][Non-DoD Source] MTA - Exit 36 Maintenance and Safety Work - Saco - SVN

Maine Project Office Staff,

Attached please find a Self-Verification Notice for authorization under the Maine General Permits for proposed highway maintenance and safety improvement work in the Exit 36 vicnity in Saco. The work is described in more detail in the attached SVN. If you need additional information or have any questions, please let me know.

Thank you,

Sean

February 8, 2022 *Via Email cenae-r-me@usace.army.mil*
U.S. Army Corps of Engineers
442 Civic Center Drive, Suite 350
Augusta, ME 04330

Re: Self-Verification Notification, Exit 36 Pavement Rehabilitation, Safety Improvements, and Maintenance Projects – Maine Turnpike Authority, Saco

Maine Project Office Staff,

The Maine Turnpike Authority (MTA or Applicant) is submitting this Section 404 Clean Water Act Self-Verification Notification (SVN) application for the Exit 36 pavement rehabilitation, safety improvements, and maintenance projects (Project). The Project will consist of performing pavement rehabilitation, installing safety improvements, and maintaining existing culvert infrastructure at Exit 36 from Turnpike mile marker (MM) 35.5 to 36.2 in Saco. Additionally, the Project will restore outlet ditching at an existing wetland cross culvert at MM 34.9 and remove 20 linear feet of separated twin culvert ends at Goosefare Brook east of the Exit 36 northbound off ramp.

The Project is anticipated to result in 4,309, square feet (sf) of temporary impacts to wetlands areas as the result of the placement of temporary construction mats associated with culvert outlet ditching at MM 34.9, and 4,436 sf of permanent wetland impacts as a result of fill or grading at the culvert outlet and other locales where new fill or grading is necessary for maintenance and safety improvement work shown on the enclosed plans. Additionally, 5,677 sf of wetland vegetation clearing without stumping or grubbing is necessary to complete the Project. All construction activities undertaken will be conducted in accordance with the Maine Department of Transportation's (MaineDOT) Best Management Practices (BMPs) for Erosion and Sediment Control.[1] Wetland impacts are summarized in Table 1 below. The MTA is filing a Permit by Rule application to the Maine Department of Environmental Protection to account for these natural resource impacts.

Table 1. Summary of Wetland Impacts

Wetland ID	Wetland Type[1]	Permanent Fill/Grading (sf)	Temporary Construction Mats (sf)	Temporary Vegetation Clearing (sf)[2]
W06	PEM	3,513	4,309	1,724
W27	PSS/PEM	27	0	2,394
W28	PFO	287	0	83
W45	PFO	514	0	1,097
W46	PFO	36	0	200
W47	PFO	59	0	263
Totals		4,436	4,309	5,677

[1] Wetland type based on Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. PFO = Palustrine Forested Wetland; PSS = Palustrine Scrub Shrub Wetland; PEM = Palustrine Emergent Wetland. Wetland type is based on the existing conditions within the proposed impact area.

[2] No stumping or grubbing is proposed.

The Goosefare Brook (S04) culvert end work will remove 20 linear feet of twin culvert ends, daylighting the stream, and remove 10 linear feet of sediment immediately downstream and between the culvert ends. The restored streambed will consist of riprap topped with special streambed fill and the daylighted stream channel will match into existing culvert outlets and existing stream bed. A low-flow channel will be constructed in the restored

[1] MaineDOT. 2008. Best Management Practices for Erosion and Sedimentation Control. Available online at: https://www.maine.gov/mdot/env/documents/bmp/BMP2008full.pdf.

segment of stream channel. The work will not permanently block fish passage and will increase in-stream habitat through culvert end removals. In-stream work will be completed in the dry with cofferdams during the low flow work window (July 15 – September 30) while maintaining downstream flows. Temporary cofferdams, installed following MaineDOT BMPs, will be utilized to isolate the work area. The twin culvert removal will result in 80 square feet of permanent stream impacts (streambed restoration) and 84 square feet of temporary stream impacts (cofferdams).

An Official Species List generated from the United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) tool is contained in Attachment 3. The USFWS Official Species List identified northern long-eared bat (*Myotis septentrionalis*) as the only threatened or endangered species with potential to be located within the Project area. The USFWS has not mapped critical terrestrial habitat for northern long-eared bat as this species uses forested landscapes commonly occurring in Maine. The Applicant does not anticipate undue adverse effects on bat species as a result of Project construction. This conclusion is a result the 4(d) IPaC consultation letter generated on January 21, 2022. Additionally, monarch butterfly (*Danaus plexippus*) is currently under consideration for listing under the Endangered Species Act and may occur in the Project area. However, there are generally no Endangered Species Act Section 7 requirements for candidate species.

The Maine Historic Preservation Commission (MHPC) confirmed that there are no known or eligible archaeological sites, historic sites, or architectural resources within the Project area. The response from MHPC in accordance with Section 106 of the National Historic Preservation Act is included as Attachment 4.

Project notification letters were also submitted to the five federally recognized Maine tribes. At the time of this submittal, responses have been received from the Tribal Historic Preservation Officers of the Passamaquoddy Tribe, the Houlton Band of Maliseet Indians, and Mi'kmaq Nation, each confirming no specific cultural resource concerns within the Project area. Tribal correspondence records are included as Attachment 5.

The enclosed materials include the SVN form, location map, Project plans, the Project's USFWS Official Species List and 4(d) Consistency Letters, and cultural resources correspondence. Please contact me at sdonohue@maineturnpike.com or 207-482-8275 if you have any questions regarding the enclosed SVN application materials or need additional information.

Sincerely,
Maine Turnpike Authority

Sean Donohue
Permitting Coordinator/Environmental Liaison

Attachments: Self-Verification Notification Form
Attachment 1 – USGS Project Location Map
Attachment 2 – Project Plans
Attachment 3 – Endangered Species Act Documentation
Attachment 4 – MHPC Correspondence
Attachment 5 – Tribal Correspondence

Cc: Ralph Norwood, MTA
Lauren Meek, Stantec
Joe Howe, Stantec
Eben Baker, Stantec

US Army Corps of Engineers®
New England District

Section VI: Self-Verification Notification Form

(for all tidal and non-tidal projects in Maine subject to Corps jurisdiction)

At least two weeks before work commences, complete all fields (write "none" if applicable) below or use the fillable form found at www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Maine-General-Permit/ The two-week lead time is not required for emergency situations. **Send this form, an Official Species List, and project plans to the following email address: cenae-r-me@usace.army.mil**

Maine Project Office
U.S. Army Corps of Engineers
442 Civic Center Drive, Suite 350
Augusta, Maine 04330

State Permit #: NRPA PBR - Sections 11 & 19
Date of State Permit: TBD
State Project Manager: TBD

Permittee: Maine Turnpike Authority
Address, City, State, Zip: 2360 Congress Street, Portland, ME 04102
Email, Phone: sdonohue@maineturnpike.com (207) 482-8275

Agent:
Address, City, State, Zip:
Email, Phone:

Contractor: TBD
Address, City, State, Zip:
Email, Phone:

Project Name: Exit 36 Pavement Rehabilitation, Safety Improvements, and Maintenance Projects
Address, City, State, Zip: I-95 (MM 34.9, 35.5 to 36.2); I-195 to toll booths
Lat °N, Long °W: 43.526050, -70.452428 Tax Map/Lot: MTA ROW and Map 88, Lot 2
Waterway Name: Unnamed wetlands and Goosefare Brook
Description of Work: Performing pavement rehabilitation, installing safety improvements, and maintaining existing culvert infrastructure. Removal of 20 linear feet of separated paired culverts at Goosefare Brook.
Proposed Starting Date: July 15, 2022 Proposed Finish Date: September 30, 2022

Area of wetland impact (SF): Permanent: 4,436 Temporary: 4,309 (matting), 5,677 (veg. clearing)
Area of waterway impact (SF): Permanent: 80 Temporary: 84

Work will be done under the following Section V General Permits (circle all that apply):

I. Inland Waters and wetlands: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
II. Navigable Waters: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Have MHPC and all five federally-recognized tribes in Maine been notified of the proposed work? X Yes ____ No

Your signature below, as permittee, indicates that you accept and agree to comply with the terms, eligibility criteria, and general conditions for Self-Verification under the Maine General Permit.

Permittee Signature: Sean Donohue Digitally signed by Sean Donohue DN: cn=Sean Donohue, o=Maine Turnpike Authority, ou, email=sdonohue@maineturnpike.com, c=US Date: 2022.02.08 14:35:29 -05'00' Date: 02-08-22

ATTACHMENT 2 – PROJECT PLANS

Date:2/8/2022

MAINE TURNPIKE ℄

1740+00 1741+00 1742+00 1743+00 1744+00 1745+00 1746+00 1747+00 1748+00 1749+00 1750+00

100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00 108+00 109+00 110+00

18+00 19+00 20+00 21+00 EXIT 36 NB OFF RAMP ℄ 22+00 23+00 24+00 25+00 26+00 27+00 28+00 29+00

10+00 9+00 8+00 7+00 6+00 EXIT 36 NB ON RAMP ℄ 5+00 4+00 3+00

I-195 ℄

S04 TOTAL AREA = 1.455 SF
TEMP. IMPACTS = 45 SF

W27 TOTAL AREA = 4706 SF
PERM. IMPACTS = 27 SF
TEMP. IMPACTS = 2394 SF

Q QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED

PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION

BRANCH ELECTRICAL - LIGHTING(SCHEDULE 80 CONDUIT. SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Scale: 50 0 50 100 Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

STANTEC CONSULTING SERVICES INC.
2211 CONGRESS STREET SUITE 380
PORTLAND, ME 04102
TEL (207) 887-3448
FAX (207) 883-3376

MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (1 OF 7)

SHEET NUMBER: GP-02

CONTRACT:2022.02

30 OF 53

Filename: ...\00\HIGHWAY\MSTA_GP_01.dgn

Q — QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED

PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION

—E—E— BRANCH ELECTRICAL - LIGHTING(SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Date:2/8/2022

Filename: ...\00\HIGHWAY\MSTA_GP_02.dgn

Scale: 50 0 50 100 Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

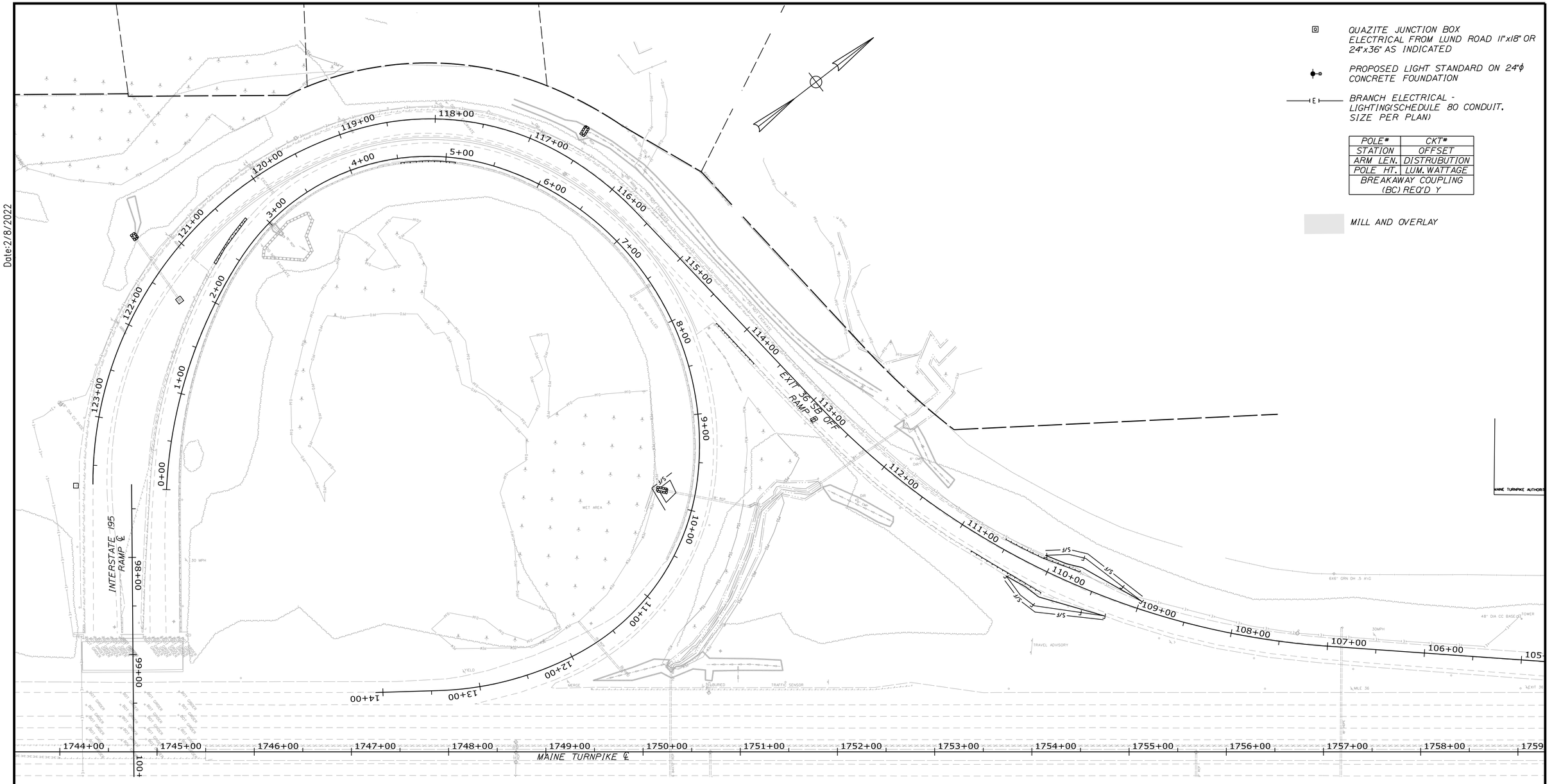
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (2 OF 7)

SHEET NUMBER: GP-03

CONTRACT:2022.02

Date:2/8/2022



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Scale: 50 0 50 100 Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

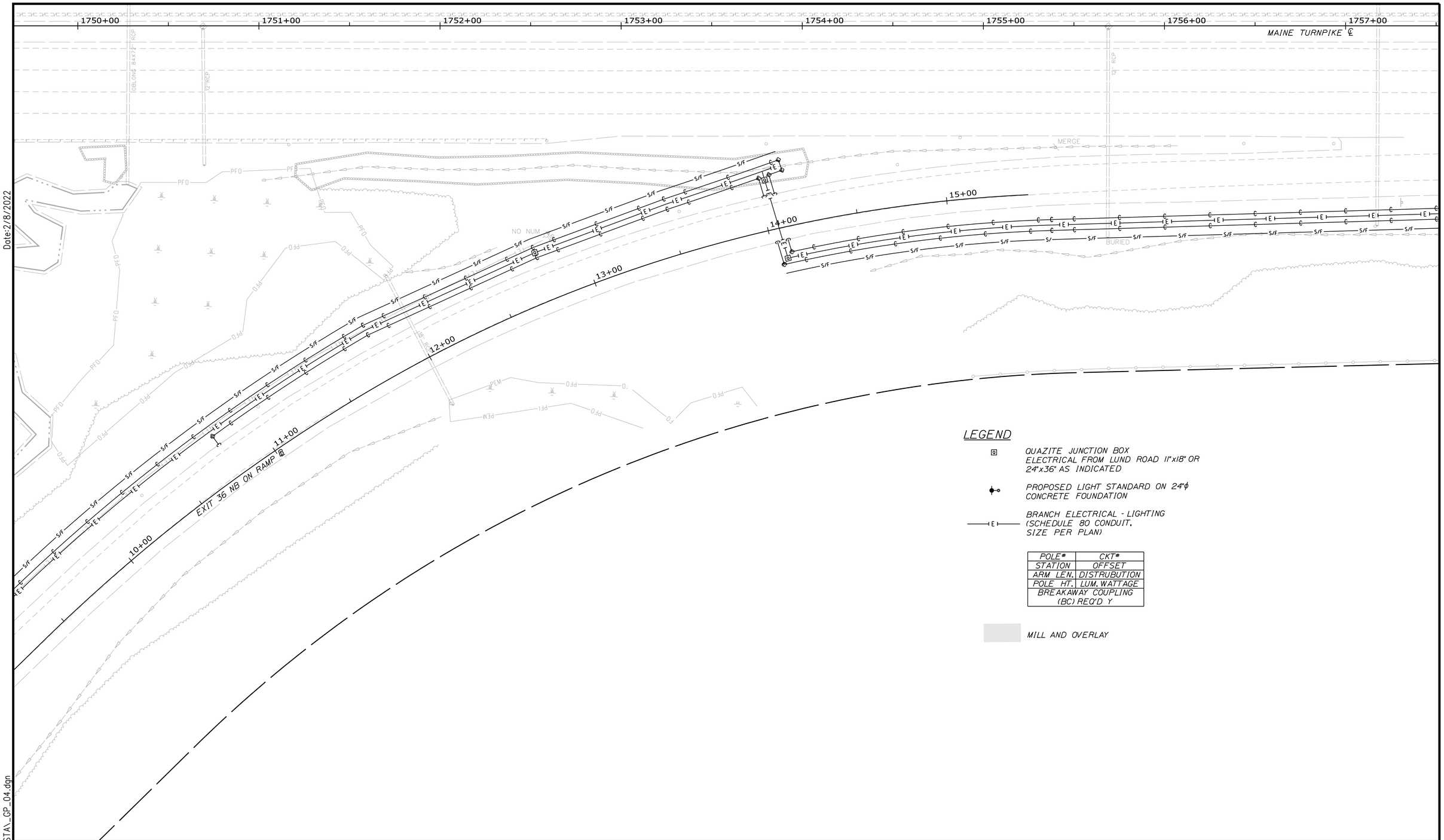
MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (3 OF 7)

SHEET NUMBER: GP-04

CONTRACT:2022.02

Date:2/8/2022



LEGEND

- QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED
- PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION
- BRANCH ELECTRICAL - LIGHTING (SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

- MILL AND OVERLAY

Scale: 25 0 25 50 Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (4 OF 7)

SHEET NUMBER: GP-05

CONTRACT:2022.02

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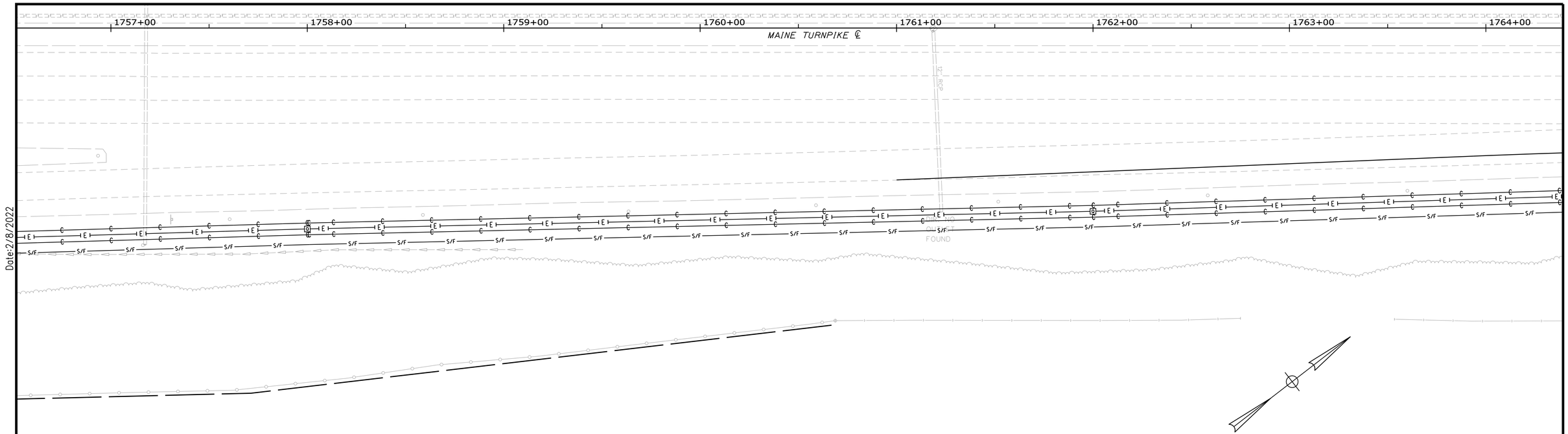

LEGEND

- ▣ QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED
- PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION
- —E— BRANCH ELECTRICAL - LIGHTING (SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Scale: 25 0 25 50
Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (5 OF 7)

SHEET NUMBER: GP-06

CONTRACT:2022.02

Date:2/8/2022

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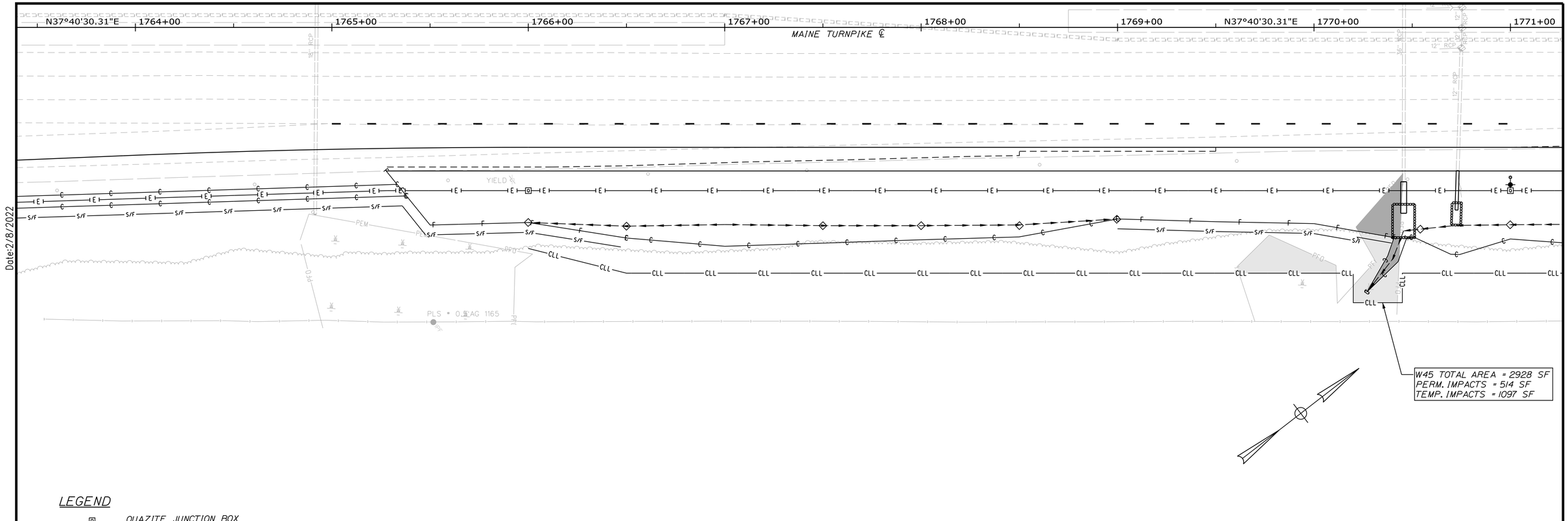

Date:2/8/2022

LEGEND

- QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED
- PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION
- BRANCH ELECTRICAL - LIGHTING (SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Filename: ...\00\HIGHWAY\MSTA_GP_06.dgn

Scale: 25 0 25 50
Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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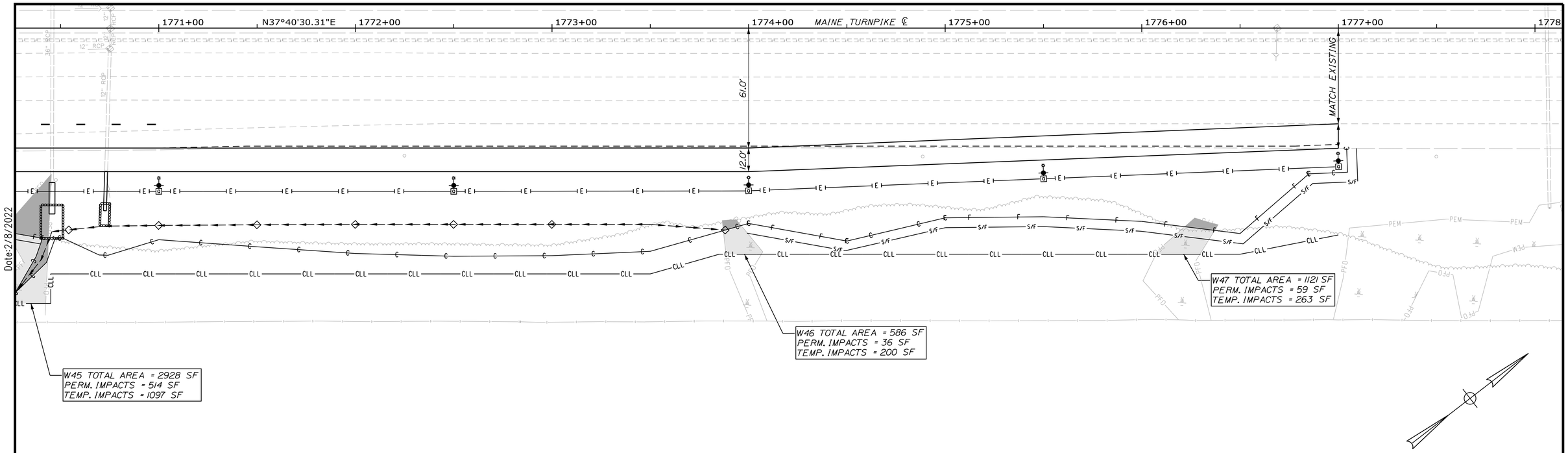
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (6 OF 7)

SHEET NUMBER: GP-07

CONTRACT:2022.02



LEGEND

- QUAZITE JUNCTION BOX ELECTRICAL FROM LUND ROAD 11"x18" OR 24"x36" AS INDICATED
- PROPOSED LIGHT STANDARD ON 24"ϕ CONCRETE FOUNDATION
- BRANCH ELECTRICAL - LIGHTING (SCHEDULE 80 CONDUIT, SIZE PER PLAN)

POLE#	CKT#
STATION	OFFSET
ARM LEN.	DISTRUBUTION
POLE HT.	LUM. WATTAGE
BREAKAWAY COUPLING (BC) REQ'D Y	

MILL AND OVERLAY

Scale: 25 0 25 50 Scale of Feet

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

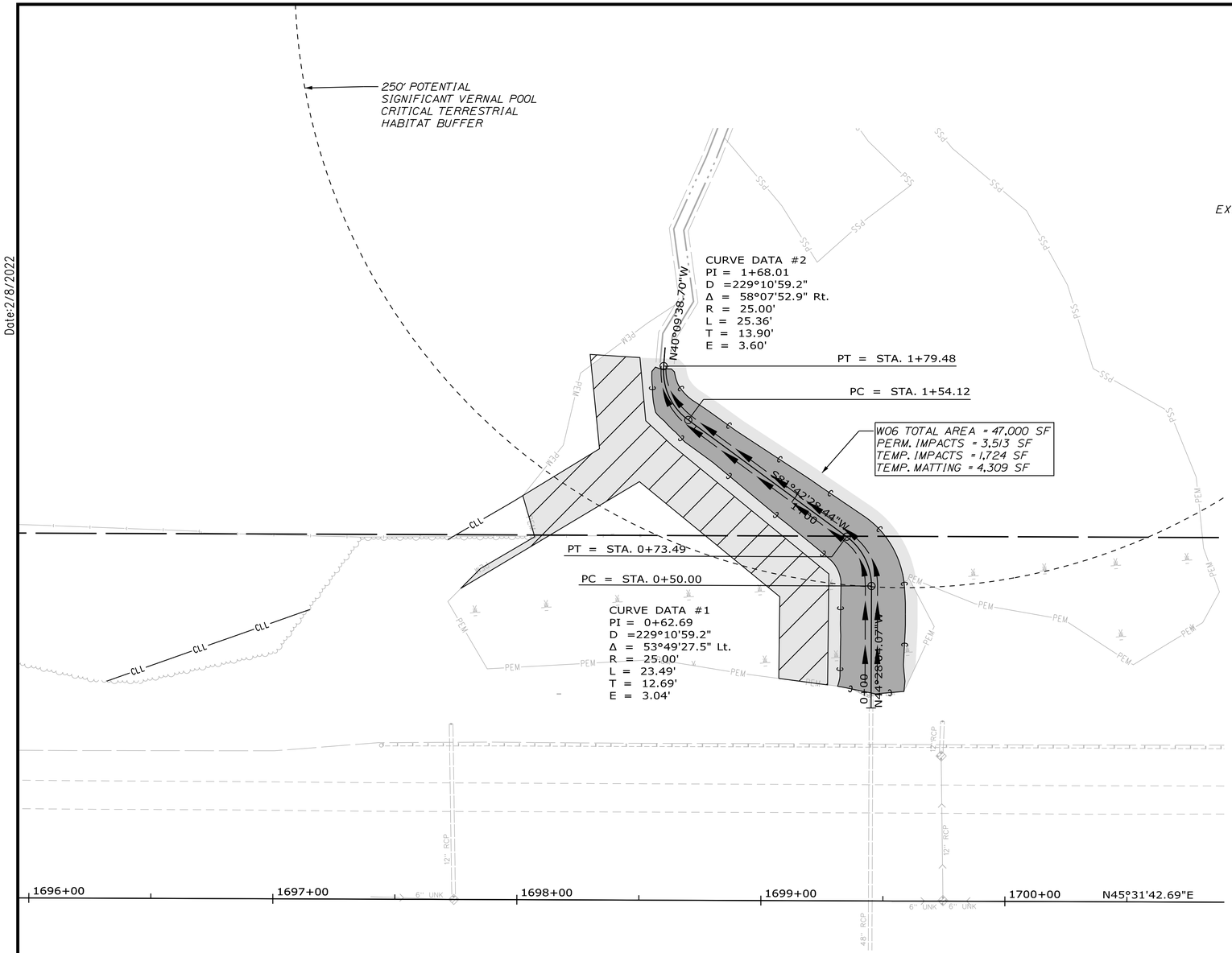
EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GENERAL PLAN (7 OF 7)

SHEET NUMBER: GP-08

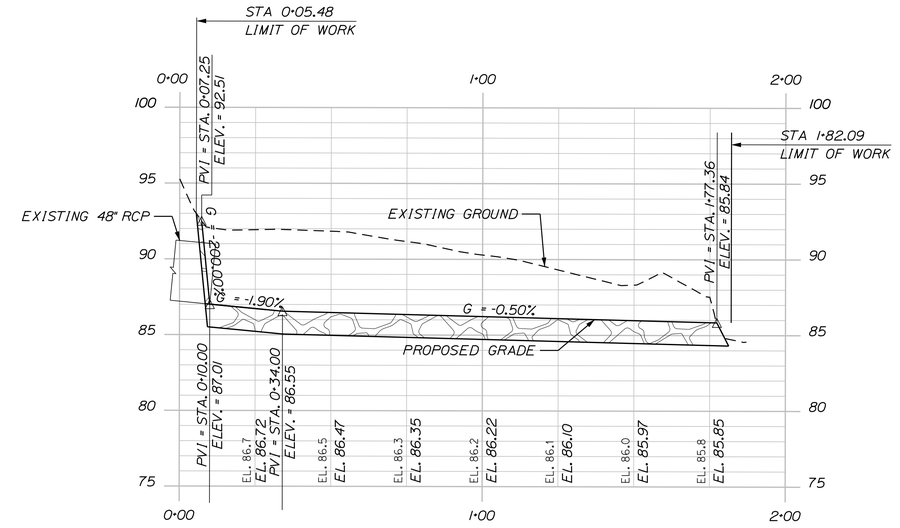
CONTRACT:2022.02

Filename: ...\00\HIGHWAY\MSTA_GP_07.dgn

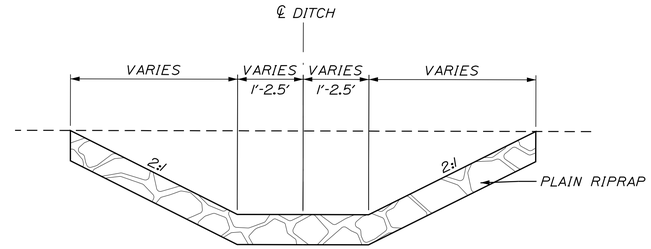
Date:2/8/2022



OUTLET DITCH PLAN VIEW
SCALE = 1" : 25'



OUTLET DITCH PROFILE
SCALE = 1" : 25'



OUTLET DITCH TYPICAL SECTION
NOT TO SCALE

Filename: ...\00\HIGHWAY\MSTA_Ditch.dgn

Scale: AS NOTED

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

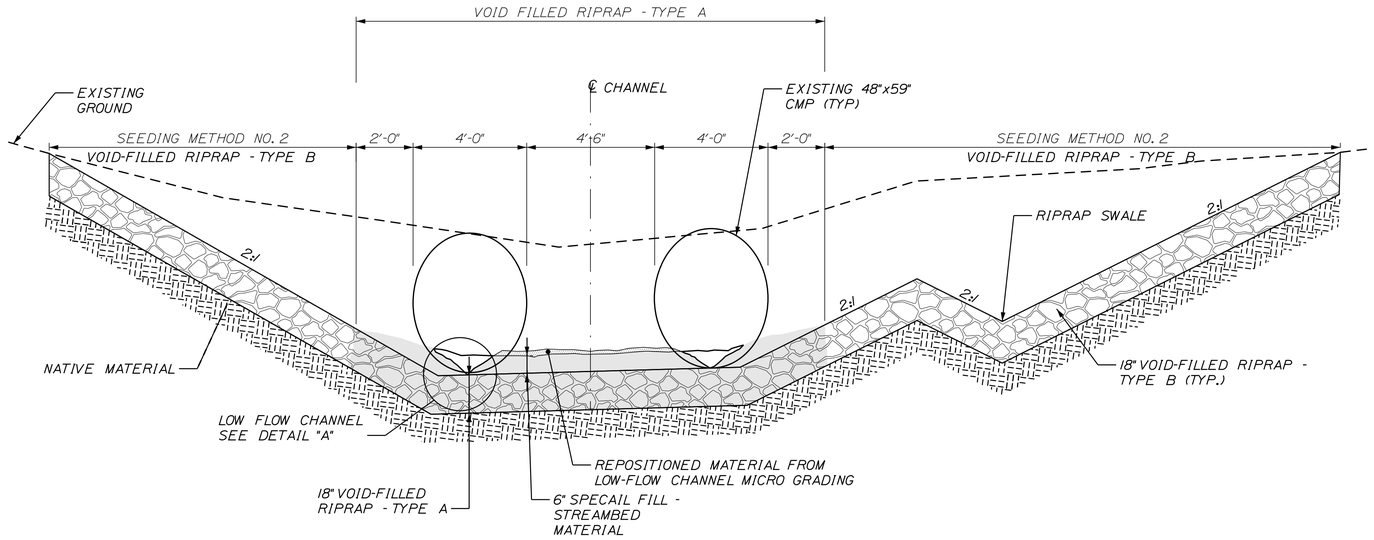
THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS CULVERT OUTLET DITCHING PLAN STA. 1699+45

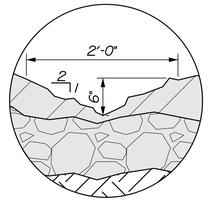
SHEET NUMBER: GP-08

CONTRACT:2022.02



TYPICAL STREAM RESTORATION SECTION

SCALE = 3/8": 1'

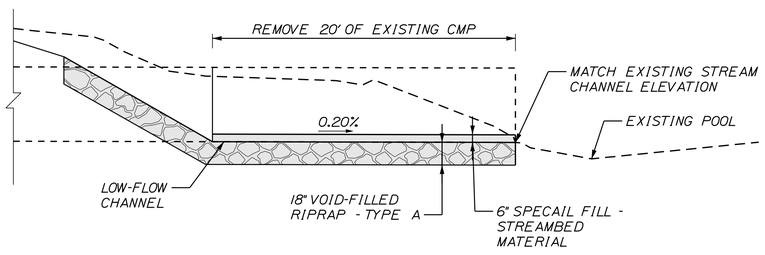


DETAIL "A" - LOW FLOW CHANNEL

SCALE: 1" = 1'-0"

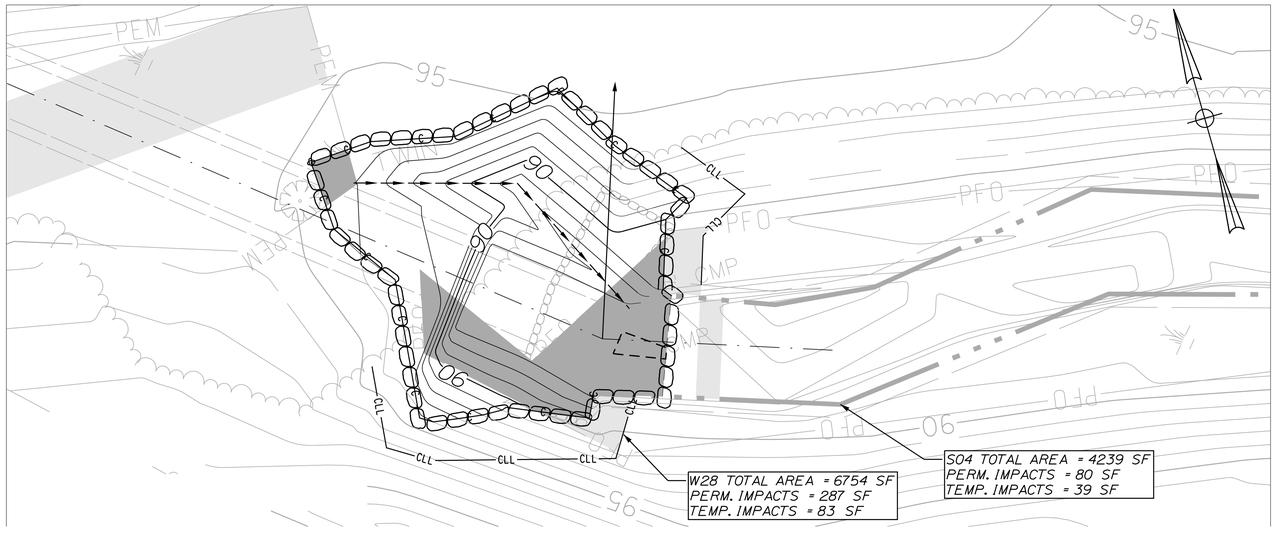
NOTES:

1. PRIOR TO INSTALLING THE SPECIAL FILL - STREAMBED MATERIAL, THE VOID-FILLED RIPRAP TYPE "A" SHALL BE FLOODED AND OBSERVED TO ENSURE THAT THE TOP LAYER OF THE VOID-FILLED RIPRAP TYPE "A" WILL POND WATER ON THE SURFACE. ADDITIONAL MATERIAL WITH SIGNIFICANT PROPORTION OF FINES SHALL BE WASHED-IN TO FILL AND SEAL ANY REMAINING VOIDS UNTIL WATER PONDS ON THE SURFACE.
2. LOW-FLOW CHANNEL VARIES HORIZONTALLY FROM 0' TO 1' TO EITHER SIDE OF CHANNEL CENTERLINE. SEE PLAN FOR APPROXIMATE ALIGNMENT OF THE LOW-FLOW CHANNEL.



TYPICAL CULVERT REMOVAL AND CHANNEL PROFILE

SCALE = 1": 5'



GOOSEFARE BROOK PLAN VIEW

SCALE = 1": 10'

Filename: ...\MSTA_Culvert Removal.dgn

Scale: AS NOTED

No.	Revision	By	Date
	98% SUBMISSION		1\14\22

Designed by: Stantec

CONSULTANT PROJECT MANAGER: JOSEPH HOWE, P.E.

	By	Date		By	Date
Designed	THG	10\21	Checked	JRH	10\21
Drawn	CHL	10\21	In Charge of	JRH	10\21

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MAINE TURNPIKE

THE GOLD STAR MEMORIAL HIGHWAY

MTA PROJECT MANAGER: RALPH NORWOOD, IV, PE, PTOE

EXIT 36 PAVEMENT REHABILITATION AND SAFETY IMPROVEMENTS GOOSEFARE BROOK CULVERT REMOVAL PLAN

SHEET NUMBER: GP-09

CONTRACT:2022.02

IV. GENERAL CONDITIONS

An activity is authorized under the General Permits (GPs) only if that activity and the permittee satisfy all of the applicable GPs terms and following general conditions (GCs):

1. Federal Jurisdiction.
2. Minimal Direct, Secondary and Cumulative Effects.
3. Other Permits.
4. Water Quality and Coastal Zone Management.
5. Fills Within 100-Year Floodplains.
6. Discretionary Authority.
7. Single and Complete Project.
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26. Temporary Fill.
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28. Bank and Shoreline Stabilization Including Living Shorelines.
29. Stream Work and Crossings, and Wetland Crossings.
30. Utility Line Installation and Removal.
31. Storage of Seasonal Structures.
32. Aquaculture.
33. Permit(s)/Authorization Letter On-Site.
34. Inspections.
35. Maintenance.
36. Federal Liability.
37. Property Rights.
38. Previously Authorized Activities.
39. Transfer of GP Verifications.
40. Modification, Suspension, and Revocation.
41. Special Conditions.
42. False or Incomplete Information.
43. Abandonment.
44. Enforcement Cases.
45. Duration of Authorization.

1. Federal Jurisdiction.

a. Applicability of these GPs shall be evaluated with reference to federal jurisdictional boundaries (e.g. mean high water mark, high tide line, ordinary high water mark, and wetland boundary). Activities shall be evaluated with reference to "waters of the U.S." under the Clean Water Act (33 CFR 328) and "navigable waters of the U.S." under Section 10 of the Rivers and Harbors Act of 1899 (33 CFR 329). Prospective permittees are responsible for ensuring that the boundaries used satisfy the federal criteria defined at 33 CFR 328 – 229. These sections prescribe the policy, practice and procedures to be used in determining the extent of the Corps jurisdiction. Note: Waters of the U.S. includes all waters pursuant to 33 CFR 328.3(a), and in adjacent wetlands as that term is defined in 33 CFR 328.3(c).

b. Permittees shall identify on project plans wetlands, other special aquatic sites (SAS) including vegetated shallows (or submerged aquatic vegetation, SAV) and mudflats, and other waters, such as lakes and ponds, and perennial and intermittent streams on the project site. Wetlands shall be delineated in accordance with the Corps of Engineers Wetlands Delineation Manual and the most recent regional supplement pertaining to the State of Maine. GP-eligible activities may utilize wetland determinations conducted by State of Maine staff in-lieu of a wetland delineation. For activities located in Essential Fish Habitat (GC 17), permittees shall also identify on project plans natural rocky habitats and shellfish areas in order to satisfy the Magnuson-Stevens Fishery Conservation and Management Act.

2. Minimal Direct, Secondary and Cumulative Effects. To be eligible and subsequently authorized by these GPs, an activity shall result in no more than minimal individual and cumulative effects on the aquatic environment as determined by the Corps in accordance with the criteria listed within these GPs and GCs. This may require project modifications involving avoidance, minimization, or compensatory mitigation for unavoidable impacts to ensure that the net adverse effects of an activity are no more than minimal.

3. Other Permits. Permittees shall obtain other Federal, State, or local authorizations as required by law. Permittees are responsible for applying for and obtaining all required State of Maine or local approvals including a Flood Hazard Development Permit issued by the town/city. Work that is not regulated by the State of Maine, but is subject to Corps jurisdiction, may still be eligible for authorization under these GPs.

4. Water Quality and Coastal Zone Management.

a. Permittees shall satisfy any conditions imposed by the State of Maine and EPA, where applicable, in their Clean Water Act Section 401 Water Quality Certification (WQC) for these GPs, or in any Individual Section 401 WQC. See Section VIII for state-specific contact info and to determine if any action is required to obtain a 401 WQC. The Corps may require additional water quality management measures to ensure that the authorized activity does not cause or contribute to a violation of water quality standards. All projects authorized by these GPs shall be designed, constructed and operated to minimize or eliminate the discharge of pollutants.

b. Permittees shall satisfy any additional conditions imposed by the State of Maine in their Coastal Zone Management (CZM) Act of 1972 consistency concurrences for these GPs, or in any Individual CZM consistency concurrences. The Corps may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

5. Fills Within 100-Year Floodplains. The activity shall comply with applicable Federal Emergency Management Agency (FEMA) approved State of Maine or municipal floodplain management requirements. Permittees should contact FEMA and/or the State of Maine Floodplain Management Program regarding floodplain management requirements (see Section VIII for Federal and state-specific contact info).

6. Discretionary Authority. Notwithstanding compliance with the terms and conditions of these GPs, the Corps retains discretionary authority to require a PCN or IP review based on concerns for the aquatic environment or for any other factor of the public interest (see 33 CFR 320.4(a)). This authority is invoked on a case-by-case basis whenever the Corps determines that the potential consequences of the proposal warrant a higher level of review based on the concerns stated above. This authority may be invoked for projects that may contribute to cumulative environmental impacts that are more than minimal or if there is a special resource or concern associated with a particular project.

7. Single and Complete Project. The term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. These GPs shall not be used for piecemeal work and shall be applied to single and complete projects and as such, the same GP shall not be used more than once for the same single and complete project.

a. For non-linear projects, a single and complete project shall have independent utility. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

b. Unless the Corps determines the activity has independent utility, all components of a single project and/or all planned phases of a multi-phased project (e.g., subdivisions should include all work such as roads, utilities, and lot development) shall be treated together as constituting one single and complete project. If any component of a single and complete project requires a PCN, the entire single and complete project shall be reviewed under PCN.

c. For linear projects such as power lines or pipelines with multiple crossings, a "single and complete project" is all crossings of a single water of the U.S. (i.e. single waterbody) at a specific location. For linear projects crossing a single waterbody several times at separate and distant locations, each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly-shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

8. Use of Multiple General Permits. The use of more than one GP for a single and complete project is prohibited, except when the acreage loss of waters of the U.S. authorized by the GPs does not exceed the acreage limit of the GPs with the highest specified acreage limit. For example, if a road crossing over waters is constructed under GP 10, with an associated utility line crossing authorized by GP 9, if the maximum acreage loss of waters of the U.S. for the total project is ≥3 acres it shall be evaluated as an IP.

9. Mitigation (Avoidance, Minimization, and Compensatory Mitigation).

a. Activities shall be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S. to the maximum extent practicable to ensure that adverse effects to the aquatic environment are no more than minimal.

b. Compensatory mitigation for unavoidable impacts to waters of the U.S., including direct, secondary and temporal loss, will generally be required for permanent impacts that exceed the SV limits (SV limits are detailed in Section V), and may be required for temporary impacts that exceed the SV limits, to offset unavoidable impacts which remain after all appropriate and practicable avoidance and minimization has been achieved and to ensure that the adverse effects to the aquatic environment are no more than minimal. Proactive restoration projects or temporary impact work with no secondary effects may generally be excluded from this requirement.

c. Mitigation proposals shall follow the guidelines found in the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule April 10, 2008; 33 CFR 332 (which can be found at: *www.nae.usace.army.mil/Missions/Regulatory/Mitigation* under "Compensatory Mitigation for Losses of Aquatic Resources, 33 CFR 332 (Compensatory Mitigation Rule)") and any other regulation. Permittees considering the use of a monetary payment *in-lieu* of permittee-responsible mitigation as compensation for unavoidable impacts to waters of the U.S. in the State of Maine may utilize the Maine Natural Resources Conservation Program (MNRCP). Information regarding this compensatory program can be found at: *www.mnrcp.org* For unavoidable jurisdictional impacts affecting federally-endangered Atlantic salmon and/or its critical habitat, permittees may be required to compensate for the impacts by utilizing the Maine Atlantic Salmon Restoration and Conservation Program. Information regarding this *in-lieu-fee* compensatory program can be found at: *www.maine.gov/dmr/science-research/searun/programs/ilffacts.html*

10. Corps Projects and Property.

a. Corps projects and property can be found at: *www.nae.usace.army.mil/Missions/Civil-Works*

b. In addition to any authorization under these GPs, prospective permittees shall contact the Corps Real Estate Division at (978) 318-8585 for work occurring on or potentially affecting Corps properties and/or Corps-controlled easements to initiate reviews and determine what real estate instruments are necessary to perform work. Permittees may not commence work on Corps properties and/or Corps-controlled easements until they

have received any required Corps real estate documents evidencing site-specific permission to work.

c. Any proposed temporary or permanent modification or use of a Federal project (including but not limited to a levee, dike, floodwall, channel, anchorage, breakwater, seawall, bulkhead, jetty, wharf, pier, or other work built or maintained but not necessarily owned by the United States), which may obstruct or impair the usefulness of the Federal project in any manner, is not eligible for SV and requires review and approval by the Corps pursuant to 33 USC 408 (Section 408).

d. A PCN is required for all work in, over, under, or within a distance of three times the authorized depth of a Corps Federal Navigation Project (FNP) and may require permission under Section 408.

e. Any structure or work that extends closer to the horizontal limits of any FNP than a distance of three times the project's authorized depth shall be subject to removal at the owner's expense prior to any future Corps dredging or the performance of periodic hydrographic surveys.

f. Where a Section 408 permission is applicable, written verification for the PCN will not be issued prior to the decision on the Section 408 permission request.

11. Navigation

a. There shall be no unreasonable interference with general navigation by the existence or use of the activity authorized herein, and no attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein.

b. Work in, over, under, or within a distance of three times the authorized depth of an FNP shall specifically comply with GC 10.

c. Any safety lights and/or signals prescribed by the U.S. Coast Guard, State of Maine or municipality, through regulations or otherwise, shall be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the U.S.

d. The permittee understands and agrees that, if future operations by the U.S. require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

12. National Lands. Activities that impinge upon the value of any National Lands or Federal Properties including but not limited to a National Wildlife Refuge, National Forest, or any area administered by the National Park Service , U.S. Fish and Wildlife Service or U.S. Forest Service are not eligible for SV and require PCN.

13. Wild and Scenic Rivers.

a. The following activities in designated rivers of the National Wild and Scenic River (NWSR) System, or in a river designated by Congress as a "study river" for possible inclusion in the system, require a PCN unless the National Park Service has determined in writing to the prospective permittee that the proposed work will not adversely affect the NWSR designation or study status:

i. Activities that occur in NWSR segments, in and 0.25 miles up or downstream of NWSR segments, or in tributaries within 0.25 miles of NWSR segments.
ii. Activities that occur in wetlands within 0.25 miles of NWSR segments.
iii. Activities that have the potential to alter free-flowing characteristics in NWSR segments.

b. As of October 14, 2020, National Wild and Scenic Rivers and congressional study rivers in Maine include: the Allagash River beginning at Telos Dam continuing to Allagash checkpoint at Eliza Hole Rapids, approximately 3 miles upstream of the confluence with the St. John River (length = 92 92.5 miles); and 11.25 miles of the York River, in the State of Maine, from its headwaters at York Pond to the mouth of the river at York Harbor, plus tributaries (the York River is currently under study).

14. St. John/St. Croix Rivers. A PCN is required for any work within the Saint John and Saint Croix River basins that requires approval of the International Joint Commission. In addition, a PCN is required if any temporary or permanent use, obstruction or diversion of international boundary waters could affect the natural flow or levels of waters on the Canadian side of the line; or if any construction or maintenance of remedial works,

protective works, dams, or other obstructions in waters downstream from boundary waters could raise the natural level of water on the Canadian side of the boundary.

15. Historic Properties.

a. No undertaking shall cause effects (as defined at 33 CFR 325 Appendix C and 36 CFR 800) on properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unknown historic properties within the permit area, unless the Corps or another federal action agency has satisfied the consultation requirements of Section 106 of the National Historic Preservation Act (NHPA). The majority of historic properties are not listed on the National Register of Historic Places and may require identification and evaluation by qualified historic preservation and/or archeological consultants in coordination with the Corps and the State Historic Preservation Officer (SHPO) (the SHPO in the State of Maine is the Maine Historic Preservation Commission, MHPC) and/or the five federally-recognized tribes in the State of Maine (Tribal Historic Preservation Officers, or THPOs). The MHPC, the THPOs, and the National Register of Historic Places can assist with locating information on:

i. Previously identified historic properties; and

ii. Areas with potential for the presence of historic resources, which may require identification and evaluation by qualified historic preservation and/or archaeological consultants in consultation with the Corps and MHPC and/or the THPO(s).

b. For activities eligible for these GPs, permittees shall ensure that the activity will not cause effects as stated above in 15(a). In order to comply with this condition, both SV and PCN prospective permittees shall notify MHPC and all five THPOs for their identification of historic properties. MHPC and the THPOs will generally respond within 30 days of receiving the notification if they believe that the activity may have an adverse effect to historic properties. A PCN is required if an activity may have an adverse effect to historic properties. The PCN shall be submitted as soon as possible if a proposed activity may cause effects as stated above in 15(a) a to ensure that the Corps is aware of any potential effects of the proposed activity on any historic property to ensure all Section 106 requirements are met.

c. All PCNs shall:

i. Show notification to MHPC and all five THPOs for their identification of historic properties;

ii. State which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties; and

iii. Include any available documentation from MHPC or the THPO(s) indicating that there are or are not historic properties affected.

d. The requirements to comply with Section 106 of the NHPA may be satisfied by a Programmatic Agreement (PA) or Programmatic Consultation (PC) with the Corps, New England District or another federal agency. New England District PAs and PCs are found at *www.nae.usace.army.mil/Missions/Regulatory*

e. If the permittee discovers any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by these permits, the permittee shall immediately notify the district engineer of what was found, and avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

f. Federal agencies should follow their own procedures for complying with the requirements of Section 106 of the NHPA. Federal permittees shall provide the Corps with the appropriate documentation to demonstrate compliance with those requirements.

g. Federal and non-federal applicants should coordinate with the Corps before conducting any onsite archeological work (reconnaissance, surveys, recovery, etc.) requested by MHPC or the THPOs, as the Corps will determine the Permit Area for the consideration of historic properties based on 33 CFR 325 Appendix C. This is to ensure that work done is in accordance with Corps requirements.

16. Federal Threatened and Endangered Species.

a. No activity is authorized by these GPs which:

i. Is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat or proposed critical habitat of such species;

ii. "May affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed;

iii. Is "likely to adversely affect" a listed species or critical habitat unless Section 7 consultation has been completed by the Corps or another lead action agency in coordination with the Corps under the provisions of a Programmatic Agreement (PA) or Programmatic Consultation (PC); or

iv. Violates the ESA.

b. All prospective permittees shall attach to their SVNF or PCN an Official Species List obtained from the U.S. Fish and Wildlife Service's Information for Planning and Consultation (IPaC) found at: *https://ecos.fws.gov/ipac* and provide the email address of the person who generated the list.

c. For proposed activities in tidal waters, prospective permittees should also refer to the National Oceanic and Atmospheric Administration (NOAA) Fisheries' Section 7 Mapper for federally-listed species found at: *https://noaa.maps.arcgis.com/apps/webappviewer/index.html*

d. A PCN is required if a threatened or endangered species, a species proposed for listing as threatened or endangered, or designated or proposed critical habitat (all hereinafter referred to as "listed species or habitat"), as identified under the ESA, may be affected by the proposed work. An activity may remain eligible for SV if the only listed species affected is the northern long-eared bat (*Myotis septrionalis*), and only after Section 7 consultation has been completed by the Corps under the 4(d) Rule Streamlined Consultation.

e. Federal agencies shall follow their own procedures for complying with the requirements of the ESA while ensuring that the Corps and any other federal action agencies are included in the consultation process.

f. Non-federal representatives designated by the Corps to conduct informal consultation or prepare a biological assessment shall follow the requirements in the designation document(s) and the ESA. Non-federal representatives shall also provide the Corps with the appropriate documentation to demonstrate compliance with those requirements. The Corps will review the documentation and determine whether it is sufficient to address ESA compliance for the GP activity, or whether additional ESA consultation is necessary.

g. The requirements to comply with Section 7 of the ESA may be satisfied by a Programmatic Agreement (PA) or Programmatic Consultation (PC) with the Corps, New England District or another federal agency. New England District PAs and PCs are found at: *www.nae.usace.army.mil/Missions/Regulatory*

17. Essential Fish Habitat (EFH).

a. PCN activities in tidal waters and the following rivers and streams, including all tributaries to the extent that they are currently or were historically accessible for salmon migration, shall be reviewed for the potential to adversely affect EFH (activities meeting SV criteria have been determined to result in no more than minimal adverse effects to EFH and therefore need no additional review):

Androscoggin River	Aroostook River	Boyden River	Dennys River
Ducktrap River	East Machias River	Hobart Stream	Kennebec River
Machias River	Narraguagus River	Orland River	Passagassawaukeag River
Patten Stream	Penobscot River	Pleasant River	Presumpscot River
Saco River	Sheepscot River	St. Croix River	Tunk Stream
Union River			

b. Prospective permittees may be required to describe and identify potential adverse effects to EFH and should refer to the NOAA Fisheries' EFH Mapper found at: *www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper*

c. The requirements to comply with the Magnuson-Stevens Fishery Conservation and Management Act may be satisfied by a Programmatic Agreement (PA) or Programmatic Consultation (PC) with the Corps, New England District or another federal agency. New England District PAs and PCs are found at: *www.nae.usace.army.mil/Missions/Regulatory*

18. Aquatic Life Movements and Management of Water Flows.

a. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Unless otherwise stated, activities permanently impounding water in a stream require a PCN to ensure impacts to aquatic life species are avoided and minimized. All permanent and temporary crossings of waterbodies and wetlands shall be:

i. Suitably spanned, bridged, culverted, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species; and

ii. Properly aligned and constructed to prevent bank erosion or streambed scour both adjacent to and inside the crossing.

b. To avoid adverse impacts on aquatic organisms, the low flow channel/thalweg shall remain unobstructed during periods of low flow, except when it is necessary to perform the authorized work.

c. For work in tidal waters, in-stream controls (e.g. cofferdams) should be installed in such a way as to not obstruct fish passage.

d. To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity shall not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g. stream restoration or relocation activities).

e. Activities that temporarily or permanently adversely impact upstream or downstream flood conditions require a PCN.

19. Spawning, Breeding, and Migratory Areas.

a. Jurisdictional activities in waters of the U.S. such as certain excavations, discharges of dredged or fill material, and/or suspended sediment producing activities that provide value as fish migratory areas, fish and shellfish spawning or nursery areas, or amphibian and migratory bird breeding areas, during spawning or breeding seasons shall be avoided and minimized to the maximum extent practicable.

b. Jurisdictional activities in waters of the U.S. that provide value as breeding areas for migratory birds must be avoided to the maximum extent practicable. The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the U.S. Fish and Wildlife's Maine Field Office (see Section VIII for contact info) to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Vernal Pools.

a. A PCN is required if a discharge of dredged or fill material is proposed within a vernal pool depression located within waters of the U.S.

b. GC 20(a) above does not apply to projects that are within a municipality that meets the provisions of a Corps-approved vernal pool Special Area Management Plan (SAMP) and are otherwise eligible for SV, and the applicant meets the requirements to utilize the vernal pool SAMP.

21. Restoration of Special Aquatic Sites (Including Wetland Areas).

a. In areas of authorized temporary disturbance, if trees are cut they shall be cut at or above ground level and not uprooted in order to prevent disruption to the wetland soil structure and to allow stump sprouts to revegetate the work area, unless otherwise authorized.

b. The introduction or spread of invasive plant species in disturbed areas shall be controlled. If construction mats are to be used in areas of invasive plant species, they shall be thoroughly cleaned before re-use.

c. Wetland areas where permanent disturbance is not authorized shall be restored to their original condition and elevation. Original condition means protection and/or removal of existing soil and vegetation, and replacement back to the original location such that the original soil layering and vegetation schemes are

approximately the same, unless otherwise authorized. Restoration shall typically commence no later than the completion of construction.

d. Upon completion of construction, all areas of authorized disturbed wetland area shall be stabilized with a wetland seed mix containing only plant species native to New England and shall not contain any species listed in the "Invasive and Other Unacceptable Plant Species" Appendix K in the "New England District Compensatory Mitigation Guidance" found at: *www.nae.usace.army.mil/Missions/Regulatory/Mitigation*

22. Invasive and Other Unacceptable Species.

a. The introduction or spread of invasive or other unacceptable plant or animal species on the project site or areas adjacent to the project site caused by the site work shall be avoided to the maximum extent practicable. For example, construction mats and equipment shall be thoroughly cleaned and free of vegetation and soil before and after use. The introduction or spread of invasive plant or animal species on the project site caused by the site work shall be controlled.

b. No cultivars, invasive or other unacceptable plant species may be used for any mitigation, bioengineering, vegetative bank stabilization or any other work authorized by these GPs. However, non-native species and cultivars may be used when it is appropriate and specified in a written verification, such as using *Secale cereale* (Annual Rye) to quickly stabilize a site. All PCNs shall justify the use of non-native species or cultivars.

c. For the purposes of these GPs, plant species that are considered invasive and unacceptable are provided in Appendix K "Invasive and Other Unacceptable Plant Species" of the most recent "New England District Compensatory Mitigation Guidance" and is found at: *www.nae.usace.army.mil/Missions/Regulatory/Mitigation* The June 2009 "U.S. Army Corps of Engineers Invasive Species Policy" provides policy, goals and objectives and is located at *www.nae.usace.army.mil/Missions/Regulatory/Invasive-Species* If an Invasive Species Control/Management Plan has been prepared it should be included with any SV or PCN.

23. Soil Erosion, Sediment, and Turbidity Controls.

a. Adequate sedimentation and erosion control management measures, practices and devices, such as phased construction, installation of sediment control barriers (i.e. silt fence, vegetated filter strips, geotextile silt fences, erosion control mixes, hay bales or other devices) downhill of all exposed areas, retention of existing vegetated buffers, application of temporary mulching during construction, and permanent seeding and stabilization shall be installed and properly maintained to reduce erosion and retain sediment on-site during and after construction. They shall be capable of preventing erosion; of collecting sediment, suspended and floating materials; and of filtering fine sediment.

b. Temporary sediment control barriers shall be removed upon completion of work, but not until all disturbed areas are permanently stabilized. The sediment collected by these sediment barriers shall be removed and placed at an upland location and stabilized to prevent its later erosion into a waterway or wetland.

c. All exposed soil and other fills shall be permanently stabilized at the earliest practicable date.

24. Time-of-Year Work (TOY) Windows/Restrictions. In-water work shall be conducted during the following TOY work windows (work allowed) under SV and any in-water work proposed during the following TOY restrictions (no work) shall be reviewed under PCN (and shall contain written justification for deviation from the work allowed windows). The term "in-water work" does not include conditions where the work site is "in-the-dry" (e.g. intertidal areas exposed at low tide). The term also does not include work contained in a cofferdam so long as the cofferdam was installed and subsequently removed within the work allowed window.

	TOY Restriction (***no work***)	TOY Work Window (***work allowed***)
Non-tidal waters	Oct. 1st to Jul. 14th	Jul. 15th to Sep. 30th
Tidal waters	Apr. 10th to Nov. 7th	Nov. 8th to Apr. 9th

Alternate work windows proposed under PCN will generally be coordinated with the U.S. Fish and Wildlife Service, National Marine Fisheries Service, Maine Department of Inland Fisheries and Wildlife, and/or Maine Department of Marine Resources and resulting written verifications may include species-specific work allowed windows.

25. Pile Driving and Pile Removal in Navigable Waters.

a. Derelict, degraded, or abandoned piles and sheet piles in the project area shall be removed in their entirety as practicable and properly disposed of in an upland location and not in wetlands. In areas of fine-grained substrates, piles/sheets shall be removed by direct, vibratory, or clamshell pull method in order to minimize potential turbidity and sedimentation impacts. If removal is not practicable, said piles/sheets shall be cut off or driven to a depth of at least one foot below substrate.

b. Work involving pile installation and/or removal should adhere to one of the five methods below:

i. "In-the-dry", or

ii. In-water between Nov. 8th to Apr. 9th, or

iii. Drilled and pinned to ledge, or

iv. Vibratory hammers used to install any size and quantity of wood, concrete, or steel, or impact hammers limited to one hammer and <50 piles installed/day with the following: wood piles of any diameter, concrete piles ≤18-inches diameter, steel piles ≤12-inches diameter if: (1) the hammer is ≤3,000 pounds and a wood cushion or equivalent is used between the hammer and steel pile, or (2) a soft start is used. Soft starts require an initial set of three strikes from the impact hammer at 40% energy, followed by a 1-minute waiting period between subsequent three-strike sets. The soft-start procedure shall be conducted any time hammering ceases for more than 30 minutes.

26. Temporary Fill.

a. Temporary fills, including but not limited to construction mats and corduroy roads shall be entirely removed as soon as they are no longer needed to construct the authorized work. Temporary fill shall be placed in its original location or disposed of at an upland site and suitably contained to prevent its subsequent erosion into waters of the U.S.

b. All temporary fill and disturbed soils shall be stabilized to prevent its eroding into waters of the U.S. where it is not authorized. Work shall include phased or staged development to ensure only areas under active development are exposed and to allow for stabilization practices as soon as practicable. Temporary fill shall be placed in a manner that will prevent it from being eroded by expected high flows.

c. Unconfined temporary fill authorized for discharge into waters of the U.S. shall consist of material that minimizes impacts to water quality (e.g. washed stone, stone, etc.).

d. Appropriate measures shall be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable when temporary structures, work, and discharges of dredged or fill material, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Materials shall be placed in a location and manner that does not adversely impact surface or subsurface water flow into or out of the wetland. Temporary fill authorized for discharge into wetlands shall be placed on geotextile fabric or other appropriate material laid on the pre-construction wetland grade where practicable to minimize impacts and to facilitate restoration to the original grade. Construction mats are excluded from this requirement.

e. Construction debris and/or deteriorated materials shall not be placed or otherwise located in waters of the U.S.

27. **Heavy Equipment in Wetlands or Mudflats.** Operating heavy equipment (drill rigs, fixed cranes, etc.) within wetlands shall be minimized, and to the maximum extent practicable such equipment shall not be stored, maintained or repaired in wetlands. Where construction requires heavy equipment operation in wetlands, the equipment shall: a) have low ground pressure (typically <3 psi); b) be placed on swamp/construction/timber mats (herein referred to as "mats") that are adequate to support the equipment in such a way as to minimize disturbance of wetland soil and vegetation; or c) be operated on adequately dry or frozen wetlands such that shear pressure does not cause subsidence of the wetlands immediately beneath equipment and upheaval of adjacent wetlands. Mats are to be placed in the wetland from the upland or from equipment positioned on mats if already working within a wetland. Other support structures that are capable of safely supporting equipment may be used with written Corps authorization. Similarly, the permittee may request written authorization from the Corps to waive use of mats during frozen or dry conditions. Construction mats should be managed in accordance with construction mat best management practices (BMPs) found at:
www.nae.usace.army.mil/Missions/Regulatory/State-General-Permits/Maine-General-Permit

28. Bank and Shoreline Stabilization Including Living Shorelines.

a. Projects involving construction of or repair, replacement, and maintenance of bank or shoreline stabilization structures including living shorelines within Corps jurisdiction shall be designed to minimize environmental effects, effects to neighboring properties, scour, etc. to the maximum extent practicable.

b. Prospective permittees shall design and construct these stabilization projects using this sequential avoidance and minimization process: avoidance of aquatic resource impacts, diversion of overland flow, vegetative stabilization, living shorelines, stone-sloped surfaces, and walls/bulkheads. New vertical walls/bulkheads shall only be used in situations where reflected wave energy can be tolerated. Prospective permittees proposing new vertical walls/bulkheads shall provide written justification demonstrating why other methods of stabilization are not practicable and how the surrounding area would be affected by the resulting reflected wave energy.

Additional conditions to meet SV eligibility criteria for *non-tidal* bank and shoreline stabilization activities:

a. Fill shall be ≤500 linear feet in total length as measured below the plane of the ordinary high water mark (OHWM), includes total if more than one stream bank.
b. Fill placed below the plane of the OHWM shall be ≤1 cubic yard per linear foot.
c. Fill shall not be angled steeper than 1H:1V.
d. No discharge of fill in special aquatic sites other than wetlands.
e. Stone revetment shall be comprised of angular material.
f. No material shall be of the type, or placed in any location, or in any manner, to impair surface water flow into or out of any water of the U.S.
g. No material shall be placed in a manner that will be eroded by normal or expected high flows (properly anchored trees and treetops may be used in low energy areas).
h. The activity shall not be a stream channelization activity.

Additional conditions to meet SV eligibility criteria for *tidal* bank and shoreline stabilization activities:

a. All in-water work shall be conducted "in-the-dry".
b. Fill shall be ≤500 linear feet in total length as measured below the plane of the high tide line (HTL) and shall be ≤200 linear feet in total length as measured below the plane of the mean high water mark (MHWM), includes total for more than one bank. Vertical structures shall be ≤200 linear feet in total length as measured below the plane of the MHWM and shall be ≤18 inches waterward of the existing vertical face.
c. Fill placed below the plane of the HTL shall be ≤1 cubic yard per linear foot.
d. Stone revetment shall be comprised of angular material.
e. Shall not impact special aquatic sites (SAS, incl. submerged aquatic vegetation, SAV), impacts to natural rocky habitats are ≤100 square feet, and impacts to intertidal and shellfish areas are ≤1,000 square feet).
f. No structures/fill shall be steeper than 1H:1V.
g. No new groins, breakwaters, or jetties.

29. Stream Work and Crossings, and Wetland Crossings.

a. A PCN is required for all new and replacement crossings in navigable waters.

b. In order to effectively size and configure crossings in navigable waters, new and replacement crossings shall consider factors including but not limited to: local tidal elevations over the range of tidal heights, basin topography and bathymetry, existing and proposed road elevations. Flood risk tolerance, conditions of habitat and natural community types present, and sea level rise during the useful life of the crossing.

c. A PCN is required for activities that result in unavoidable impacts to wetlands in excess of SV thresholds.

d. In-stream work and crossings and wetland crossings shall adhere to all applicable GCs including but not limited to:

i. GC 16 (Federally Threatened and Endangered Species)
ii. GC 17 (Essential Fish Habitat)
iii. GC 18 (Aquatic Life Movements and Management of Water Flows)

iv. GC 23 (Soil Erosion, Sediment and Turbidity Controls)
v. GC 24 (Time-of-Year Work Windows/Restrictions)
vi. GC 26 (Temporary Fill)
vii. GC 28 (Bank Stabilization)

e. Slip Lining. Work resulting in a decreased width, height, or diameter of an existing crossing (e.g. slip lining and invert lining) is discouraged and requires PCN. Written justification shall be provided for this activity.

f. Culvert Extensions. A PCN is required for any extension to an existing culvert.

g. Scour protection or armoring of the inlet and/or outlet of a crossing shall not disrupt normal flow patterns or substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area (see GC 18).

h. The permittee shall maintain the work authorized herein in good condition and in conformance with the terms and general conditions of this permit to facilitate aquatic life passage as stated in GC 18. Culverts that develop "hanging" inlets or outlets, result in bed washout, or a stream that doesn't match the characteristics of the substrate in the natural stream channel such as mobility, slope, stability confinement will require maintenance or repair to comply with this GC (this does not apply to temporary stream crossings).

Additional conditions to meet SV eligibility criteria for Stream Work and Crossings:

a. Crossings shall be designed and constructed using the techniques and principles outlined in Stream Simulation, Stream Smart, Habitat Connectivity Design.
b. Crossings shall be designed to be at least 1.2 times bankfull width. Any footings, abutments, and/or abutment armoring shall also be at least 1.2 times bankfull width.
c. Crossings shall have a natural bottom substrate under or within the structure matching the characteristics of the substrate in the natural stream channel. Crossings shall be designed and constructed with appropriate streambed forms and streambed characteristics so that water depths and velocities are comparable to those found in the adjacent natural channel at a variety of flows.
d. Crossings shall include a bank on both sides of the stream matching the horizontal profile of the existing stream and banks in order to allow terrestrial passage for wildlife and to prevent undermining of the footings as applicable.
e. Closed bottom culverts shall be embedded at least 25 percent of the maximum height of the culvert.
f. No unconfined fill or excavation in flowing waters is allowed. In-stream construction work shall be conducted "in-the-dry" under no-flow conditions or by using cofferdams, temporary flume pipes, culverts, etc. Downstream flows shall be maintained during in-stream construction. It is recommended that project plans include pertinent details for working in-the-dry and maintaining downstream flows.
g. Conditions (a) thru (e) immediately above do not apply to temporary stream crossings; however, in addition to conditions (f) immediately above, temporary stream crossings shall adhere to the following:
    i. Be placed on geotextile fabric or other material where practicable to ensure restoration to the original grade. Soil may not be used to construct or stabilize these structures and rock shall be large enough to allow for easy removal without disrupting the streambed.
    ii. Be designed and maintained to withstand and pass high flows. Water height shall be no higher than the top of the culvert's inlet. A minimum culvert diameter of two feet is required to pass debris. Culverts shall be aligned to prevent bank erosion or streambed scour.
    iii. Be equipped with energy dissipating devices installed downstream if necessary to prevent scour.
    iv. Be designed and maintained to prevent soil from entering the waterbody.
    v. Be removed upon the completion of work. Impacts to the streambed or banks requires restoration to their original condition using the methods in (a) above.

PCN Conditions for Stream Work and Crossings:

a. Crossings are recommended to meet the conditions for SV; written justification shall be provided for any deviation from SV conditions.

b. Crossings shall be designed using the least intrusive and environmentally damaging method following this sequential minimization process: 1) spans with no stream impacts, 2) spans with stream impacts, and 3) embedded culverts with Stream Simulation, Stream Smart, or Habitat Connectivity.

Additional Conditions for Wetland Crossings:

a. New and replacement wetland crossings that are permanent shall be constructed in such a manner as to preserve hydraulic and ecological connectivity, at its present level, between the wetlands on either side of the road. Crossing structures commonly include but are not limited to spans and culverts. To meet this condition, spans or culverts should be placed at least every 50 feet with an opening at least 2 feet high and 3 feet wide at ground level. Closed bottom culverts should be embedded at least 6 inches and should have a natural bottom substrate within the structure. Alternative crossing designs that preserve wetland hydraulic and ecological connectivity (e.g. "rock sandwiches) may also be considered.

b. Any work that results in flooding, or impacts to wetland drainage from the upgradient side of the wetland crossing does not qualify for SV.

c. In the case of non-compliance, the permittee shall take necessary measures to correct wetland damage due to lack of hydraulic and ecological connectivity.

30. Utility Line Installation and Removal.

a. Utility lines in jurisdictional waters should be installed subsurface and shall be maintained in such a way so that they remain subsurface. If it is necessary to discharge dredged or filled material to keep such utility lines buried or restore them to their original subsurface condition, a PCN and written verification from the Corps may be required (e.g., in the case of side casting into wetlands from utility trenches).

b. For subsurface utility lines the bottom and side slope cover associated with the initial installation under Federal Navigation Projects (FNPs) is a technical determination. The depth requirement varies based on geotechnical (composition of bottom materials and layering), hydraulic (current, or wave induced scour depth), navigation (propeller induced scour depth and ships' anchor penetration), maintenance dredging (penetration of barge spuds), construction factors (energy from blasting potentially transmitted to utility crossings), physical conditions (exposed open water conditions or sheltered/harbor conditions), and the proposed location of the utility crossing within any FNP or within navigable waters, including areas dredged by others. On a case-by-case basis, the Corps will determine the depth and cover requirements for each proposed utility crossing. Additional conditions to the GP will be attached to address pre and post installation requirements. In waterways that do not have existing FNPs, this depth should be taken as two feet below the existing bottom or maximum depth of proposed dredging, as applicable.

c. Aerial utility lines crossing navigable waters require PCN and shall meet minimum clearances per 33 CFR 322.5(i).

d. For horizontal directional drilling work, returns of drilling fluids to the surface (i.e., frac-outs) are not authorized and require restoration to the maximum extent practicable in accordance with the terms and conditions of these GPs. The permittee and its contractor shall have onsite and shall implement the procedures detailed in a frac-out contingency plan for monitoring drilling operations and for the immediate containment, control and recovery/removal of drilling fluids released into the environment should a discharge of material occur during drilling operations.

e. For new installations within waters of the U.S., any abandoned or inactive utility lines should be removed and faulty lines (e.g., leaking hazardous substances, petroleum products, etc.) shall be removed or repaired to the extent practicable. A PCN is required if they are to remain in place, e.g., to protect sensitive areas or ensure safety.

f. No work shall drain a water of the U.S. by providing a conduit for water on or below the surface. Trench plugs installed along pipelines may be effective.

g. Trenches should be backfilled with native sediment immediately after completion of work.

h. Pre-construction elevations should be re-established. Any additional material needed to accomplish this should be of consistent type and grain-size as the existing substrate sediment.

i. Utility line activities in non-tidal waters adjacent to special aquatic sites, and all work in tidal waters should utilize horizontal directional drilling as practicable.

31. Storage of Seasonal Structures. Seasonal or recreational structures such as pier sections, floats, aquaculture structures, etc. that are removed from the waterway for a portion of the year shall be stored in an upland location and not in wetlands, tidal wetlands, their substrate, or on mudflats. These seasonal structures may be stored on the fixed, pile-supported portion of a structure that is waterward of the mean high water mark or the ordinary high water mark, e.g. the storage of a ramp or gangway on the pile-supported pier. Seasonal storage of structures in navigable waters, e.g., in a protected cove, requires prior Corps approval and local harbormaster approval.

32. Aquaculture. Activities involving the cultivation of Atlantic salmon and other salmonids, or other federally-listed threatened or endangered species are not eligible for authorization under these GPs. All other aquaculture activities shall adhere to all applicable GCs including but not limited to:

a. GC 3 (Other Permits) In particular, permittees shall maintain a current State of Maine Department of Marine Resources lease or license.
b. GC 10 (Corps Projects and Property)
c. GC 11 (Navigation)
d. GC 16 (Federal Threatened and Endangered Species)
e. GC 17 (Essential Fish Habitat)
f. GC 18 (Aquatic Life Movements and Management of Water Flows)
g. GC 31 (Storage of Seasonal Structures)

Additional conditions to meet SV eligibility criteria for Tidal Aquaculture:

a. Shall not exceed 400 square feet in area.
b. Shall receive signed approval from Harbormaster or appropriate Town Official.
c. Shall not include enclosures or impoundments.
d. Shall not be located in or within a distance of three times the authorized depth of a FNP.
e. Shall not be located in or impinge upon the value of National Lands and Federal Properties including but not limited to National Parks and National Wildlife Refuges.
f. Shall not impact special aquatic sites (SAS, incl. submerged aquatic vegetation, SAV), impacts to natural rocky habitats are ≤100 square feet, and impacts to intertidal and shellfish areas are ≤1,000 square feet.
g. No structures, cages, gear, or shell hash shall be located in/within 25 feet of SAV.
h. All gear, except for mooring tackle, when not in use on the site shall be stored in an upland location above the mean high water mark and not on wetland (incl. salt marsh).

33. Permit(s)/Authorization Letter On-Site. The permittee shall ensure that a copy of the terms and conditions of these GPs and any accompanying authorization letter with attached plans are at the site of the work authorized by these GPs whenever work is being performed and that all construction personnel performing work which may affect waters of the U.S. are fully aware of the accompanying terms and conditions. The entire permit authorization shall be made a part of any and all contracts and subcontracts for work that affects areas of Corps jurisdiction at the site of the work authorized by these GPs. This shall be achieved by including the entire permit authorization in the specifications for work. The term "entire permit authorization" means all terms and conditions of the GPs, the GPs, and the authorization letter (including its drawings, plans, appendices and other attachments) and subsequent permit modifications as applicable. If the authorization letter is issued after the construction specifications, but before receipt of bids or quotes, the entire permit authorization shall be included as an addendum to the specifications. If the authorization letter is issued after receipt of bids or quotes, the entire permit authorization shall be included in the contract or subcontract. Although the permittee may assign various aspects of the work to different contractors or subcontractors, all contractors and subcontractors shall be obligated by contract to comply with all environmental protection provisions contained within the entire GP authorization, and no contract or subcontract shall require or allow unauthorized work in areas of Corps jurisdiction.

34. Inspections. The permittee shall allow the Corps to make periodic inspections at any time deemed necessary in order to ensure that the work is eligible for authorization under these GPs, is being, or has been performed in accordance with the terms and conditions of these GPs. To facilitate these inspections, the permittee shall

complete and return to the Corps the Work-Start Notification Form and the Compliance Certification Form when either is provided with an authorization letter. The Corps may also require post-construction engineering drawings and/or photographs for completed work or post-dredging survey drawings for any dredging work to verify compliance.

35. Maintenance. The permittee shall maintain the activity authorized by these GPs in good condition and in conformance with the terms and condition of these permits. This does not include maintenance dredging, related disposal, or beach nourishment projects, which are subject to review thresholds for GP 5 on page 30, unless specified in written authorization from the Corps.

36. Federal Liability. In issuing these permits, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes;

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest;

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit;

d. Design or construction deficiencies associated with the permitted work; or

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

37. Property Rights. Per 33 CFR 320.4(g)(6), these GPs do not convey any property rights, either in real estate or material, or any exclusive privileges, nor does it authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations.

38. Previously Authorized Activities.

a. Projects that received prior authorization from the Corps (via Category 1 or 2) and that completed authorized work under the previous nationwide permits, programmatic permits, regional general permits or letters of permission, shall remain authorized in accordance with the original terms and conditions of those authorizations, including their terms, general conditions, expiration date, and any special conditions provided in a written verification.

b. Activities authorized pursuant to 33 CFR Part 330.3 ("Activities occurring before certain dates") are not affected by these GPs.

c. Any work not commenced, not under contract to commence, nor completed that was originally authorized by the Corps under the GP in effect between October 13, 2015 and October 13, 2020 remains authorized subject to the terms and general conditions of this GP along with any special conditions included in written authorizations. Exception: if previously authorized work has not commenced or not under contract to commence and a new federally-listed threatened or endangered species may be affected, the Corps shall consult with the U.S. Fish and Wildlife Service or NOAA Fisheries prior to re-authorizing the work under these GPs. Requests for re-authorization shall include an Official Species List per GC 16.

39. Transfer of GP Verifications. If the permittee sells the property associated with a GP verification, the permittee may transfer the GP verification to the new owner by submitting a letter to the Corps to validate the transfer. A copy of the GP verification shall be attached to the letter, the letter shall contain the name, address, phone number and email of the transferee (new owner), shall include the following statement and signature, and be mailed to: U.S. Army Corps of Engineers, Maine Project Office, 442 Civic Center Drive, Suite 350, Augusta, Maine 04330:

> "When the structures or work authorized by these GPs are still in existence at the time the property is transferred, the terms and conditions of these GPs, including any special conditions, will continue to be binding on the new owner(s) of the property."
>
> _____
> Transferee Printed Name
>
> _____
> Transferee Signature Date

40. Modification, Suspension, and Revocation. These GPs and any individual authorization issued thereof may be either modified, suspended, or revoked, in whole or in part, pursuant to the policies and procedures of 33 CFR 325.7, and any such action shall not be the basis for any claim for damages against the U.S.

41. Special Conditions. The Corps may independently or in coordination with federal resource agencies impose special conditions on a project authorized pursuant to these GPs that are determined necessary to minimize adverse navigational and/or environmental effects, or based on any other factor of the public interest. Failure to comply with all terms and conditions of the authorization, including special conditions, constitutes a permit violation and may subject the permittee to criminal, civil or administrative penalties and/or an ordered restoration.

42. False or Incomplete Information. If the Corps makes a determination regarding the eligibility of a project under these GPs and subsequently discovers that it has relied on false, incomplete or inaccurate information provided by the permittee, the Corps may determine that the GP authorization is not valid; modify, suspend or revoke the authorization; and the U.S. Government may institute legal proceedings.

43. Abandonment. If the permittee decides to abandon the activity authorized under these GPs, unless such abandonment is merely the transfer of property to a third party, he/she may be required to restore the area to the satisfaction of the Corps.

44. Enforcement cases. These GPs do not apply to any existing or proposed activity in Corps jurisdiction associated with an ongoing Corps or EPA enforcement action, until such time as the enforcement action is resolved or the Corps or EPA, as appropriate, determines that the activity may proceed independently without compromising the enforcement action.

45. Duration of Authorization.

a. These GPs expire on October 14, 2025 unless otherwise specifically indicated in an individual authorization letter. Activities authorized under these GPs that have either commenced or are under contract to commence in reliance upon this authorization will have an additional year from the expiration date to complete the work. The permittee must be able to document to the Corps' satisfaction that the activity commenced or was under contract to commence by the expiration date of these GPs. If work is not completed within the one year extended timeframe, the permittee must contact the Corps. The Corps may issue a new authorization, provided the activity meets the applicable terms and conditions of the Maine GPs that are in effect at the time.

b. Activities authorized under these GPs will remain authorized until these GPs expire, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 325.2(e)(2). Activities completed under the SV or PCN authorizations of these GPs will continue to be authorized after its expiration date.

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Tammy R. Turley
Chief, Regulatory Division

Section IX: Definitions

Action Area: The "Endangered Species Consultation Handbook – Procedures for Conducting Consultation and Conference Activities Under Section 7 of the ESA," defines action area as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. [50 CFR 402.02]."

Agricultural Activities: The Clean Water Act exempts certain discharges associated with normal farming, ranching, and forestry activities such as plowing, cultivating, minor drainage, and harvesting for the production of food, fiber, and forest products, or upland soil and water conservation practices (Section 404(f)(1)(A)). Prospective permittees are strongly advised to contact the Corps for a determination of whether their activity is exempt or requires a permit.

Attendant Features: Occurring with or as a result of; accompanying.

Aquatic Habitat Restoration, Establishment and Enhancement: The Corps will decide if a project qualifies and must determine in consultation with federal and state agencies that the net effects are beneficial. The Corps may refer to Nationwide Permit 27 published in the January 6, 2017 Federal Register. Activities authorized here may include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels and drainage ditches; the removal of existing drainage structures; the construction of small nesting islands in inland waters**;** the construction of open water areas; the construction of native shellfish species habitat over unvegetated bottom for the purpose of habitat protection or restoration in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species shall be planted at the site.

Biodegradable: A material that decomposes into elements found in nature within a reasonably short period of time and will not leave a residue of plastic or a petroleum derivative in the environment after degradation. Examples of biodegradable materials include jute, sisal, cotton, straw, burlap, coconut husk fiber (coir) or excelsior. In contrast, degradable plastics break down into plastic fragments that remain in the environment after degradation.

Boating facilities: These provide, rent or sell mooring space, such as marinas, yacht clubs, boat yards, dockominiums, town facilities, land/home owners, etc. Not classified as boating facilities are piers shared between two abutting properties or town mooring fields that charge an equitable user fee based on the actual costs incurred.

Bordering and Contiguous Wetlands: A bordering wetland is immediately next to its adjacent waterbody and may lie at, or below, the ordinary high water mark (mean high water mark in navigable waters) of that waterbody and is directly influenced by its hydrologic regime. Contiguous wetlands extend landward from their adjacent waterbody to a point where a natural or manmade discontinuity exists. Contiguous wetlands include bordering wetlands as well as wetlands that are situated immediately above the ordinary high water mark and above the normal hydrologic influence of their adjacent waterbody.

Brushing: The placement of tree boughs, wooden lath structure, or small-mesh fencing on mudflats, or any bottom disturbance (e.g., discing, plowing, raking, etc.), to enhance recruitment of shellfish.

Buffer Zone: The buffer zone of an FNP is equal to three times the authorized depth of the FNP.

Construction mats: Constructions, swamp and timber mats (herein referred to as "construction mats") are generic terms used to describe structures that distribute equipment weight to prevent wetland damage while facilitating passage and providing work platforms for workers and equipment. They are comprised of sheets or mats made from a variety of materials in various sizes. A timber mat consists of large timbers bolted or cabled together. Corduroy roads, which are not considered to be construction mats, are cut trees and/or saplings with the

crowns and branches removed, and the trunks lined up next to one another. Corduroy roads are typically installed as permanent structures. Like construction mats, they are considered as fill whether they are installed temporarily or permanently.

Cumulative effects: See "Direct, secondary, and cumulative effects."

Currently Serviceable: Useable as-is or with some maintenance, but not so degraded as to essential require reconstruction.

Direct, secondary, and cumulative effects:
Direct Effects: The loss of aquatic ecosystem within the footprint of the discharge of dredged or fill material. Direct effects are caused by the action and occur at the same time and place.
Secondary Effects: These are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time final Section 404 action is taken by permitting authorities. Some examples of secondary effects on an aquatic ecosystem are a) aquatic areas drained, flooded, fragmented, or mechanically cleared, b) fluctuating water levels in all impoundment and downstream associated with the operation of a dam, c) septic tank leaching and surface runoff from residential or commercial developments on fill, and d) leachate and runoff from a sanitary landfill located in waters of the U.S. See 40 CFR 230.11(h).
Cumulative Effects: The changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual 1) discharges of dredged or fill material, or 2) structures. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems. See 40 CFR 230(g).

Dredging:
Maintenance Dredging: Includes areas and depths previously authorized by the Corps and dredged.
The Corps may require proof of authorization. Maintenance dredging typically refers to the routine removal of accumulated sediment from channel beds to maintain the design depths of navigation channels, harbors, marinas, boat launches and port facilities. Routine maintenance dredging is conducted regularly for navigational purposes (typically at least once every ten years) and does not include any expansion of the previously dredged area or depth. The Corps may review a maintenance dredging activity as new dredging if sufficient time has elapsed to allow for the colonization of SAS, shellfish, etc. The main characteristics of maintenance dredging projects are variable quantities of material; soft, uncompacted soil; contaminant content possible; thin layers of material; occurring in navigation channels and harbors; repetitive activity
New Dredging: Dredging of an area or to a depth that has never been authorized by the Corps or dredged.

Dredged material & discharge of dredged material: These are defined at 323.2(c) and (d). The term dredged material means material that is excavated or dredged from waters of the U.S.

Essential Fish Habitat (EFH): This is broadly defined to include those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

Fill material & discharge of fill material: These are defined at 323.2(e) and (f). The term fill material is defined as material placed in waters of the U.S. where the material has the effect of either replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S.

Fill area: Fill area includes all temporary and permanent fill (including mats), and regulated discharges associated with excavation.

Federal navigation projects (FNPs): These areas are maintained by the Corps; authorized, constructed and maintained on the premise that they will be accessible and available to all on equal terms; and are comprised of Federal Anchorages, Federal Channels and Federal Turning Basins. The buffer zone is equal to three times the authorized depth of a FNP. More information on the following FNPs is provided at *www.nae.usace.army.mil/missions/navigation.aspx* >> Navigation Projects.

Flume: An open artificial water channel, in the form of a gravity chute that leads water from a diversion dam or weir completely aside a natural flow. A flume can be used to measure the rate of flow.

Frac out: During normal drilling operations, drilling fluid travels up the borehole into a pit. When the borehole becomes obstructed or the pressure becomes too great inside the borehole, the ground fractures and fluid escapes to the surface.

Habitat Connectivity Design: projects designed and constructed for consistency with natural stream dimensions, profiles, and dynamics, in accordance with the following technical references: U.S. Forest Service guide (Forest Service Stream-Simulation Working Group 2008), augmented by documents published by the states of Washington (Barnard et al. 2013), Vermont (Bates and Kirn 2009) and California (Love and Bates 2009).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Individual Permit: A Department of the Army authorization that is issued following a case-by-case evaluation of a specific structure or work in accordance with the procedures of 33 CFR 322, or a specific project involving the proposed discharge(s) in accordance with the procedures of 33 CFR 323, and in accordance with the procedures of 33 CFR 325 and a determination that the proposed discharge is in the public interest pursuant to 33 CFR 320.

Living Shoreline: Living shorelines stabilize banks and shores in coastal waters along shores with small fetch and gentle slopes that are subject to low-to mid-energy waves. A living shoreline has a footprint that is made up mostly of native material. It incorporates vegetation or other living, natural "soft" elements alone or in combination with some type of harder shoreline structure (e.g., oyster or mussel reefs or rock sills) for added protection and stability. Living shorelines shall maintain the natural continuity of the land-water interface, and retain or enhance shoreline ecological processes. Living shorelines must have a substantial biological component, either tidal or lacustrine fringe wetlands or oyster or mussel reef structures.

Maintenance:

a. The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3 – "Activities occurring before certain dates," provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently authorized modification.

- Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards that are necessary to make repair, rehabilitation, or replacement are authorized.
- Currently serviceable means useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.
- No seaward expansion for bulkheads or any other fill activity is considered SV maintenance.
- Only structures or fills that were previously authorized and are in compliance with the terms and condition of the original authorization can be maintained as a non-regulated activity under 33 CFR 323.4(a)(2), or in accordance with the SV or PCN thresholds in Section V.

b. The state's maintenance provisions may differ from the Corps and may require reporting and written authorization from the state.

c. Contact the Corps to determine whether stream crossing replacements require a PCN.

d. Exempted Maintenance. In accordance with 33 CFR 323.4(a)(2), any discharge of dredged or fill material that may result from any of the following activities is not prohibited by or otherwise subject to regulation under Section 404 of the CWA: "Maintenance, including emergency reconstruction of recently damaged parts, of currently serviceable structures such as dikes, dams, levees, groins, riprap, breakwaters, causeways, bridge abutments or approaches, and transportation structures. Maintenance does not include any modification that changes the character, scope, or size of the original fill design."

The following definition is also applicable:

Minor deviations: Deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, or current construction codes or safety standards, which are necessary to make repair, rehabilitation, or replacement are permitted, provided the adverse environ-mental effects resulting from such repair, rehabilitation, or replacement are minimal.

Marina reconfiguration zone: A Corps-authorized area in which permittees may rearrange pile-supported structures and floats without additional authorizations. A reconfiguration zone does not grant exclusive privileges to an area or an increase in structure or float area.

Natural Rocky Habitats: Natural rocky habitats are intertidal and subtidal substrates composed of pebble-gravel, cobble, boulder, or rock ledge and outcrops. Manufactured stone (e.g. cut or engineered rip-rap) is not considered a natural rocky habitat. Natural rocky habitats are either found as pavement (consolidated pebble-gravel, cobble, or boulder areas) or as a mixture with fines (i.e. clay and sand) and other substrates.

Navigable waters of the U.S.: See Waters of the U.S. below.

Overall project: See "single and complete linear project" below.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Permanent impacts: Permanent impacts means waters of the U.S. that are permanently affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent impacts include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody.

Pre-construction notification (PCN): A request submitted by a prospective permittee to the Corps for confirmation that a particular activity is authorized by this GP. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of these GPs. A PCN may be voluntarily submitted in cases where PCN is not required and the project proponent wants confirmation that the activity is authorized under this GP.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/ historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in again in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area. Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complexes: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a course substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Secondary effects: See "Direct, secondary, and cumulative effects."

Shellfish Areas: Areas that currently support molluscan shellfish. Information regarding these locations can be obtained from the State of Maine GeoLibrary Data Catalog at: *www.maine.gov/geolib/catalog.html*

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for the purposes of this GP. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.
The overall project, for purposes of this GP, includes all regulated activities that are reasonably related and necessary to accomplish the project purpose.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. For non-linear projects, the single and complete project shall have independent utility (see definition).

Special aquatic sites (SAS): These are defined at 40 CFR 230 Subpart E. They include sanctuaries and refuges, wetlands, mud flats, vegetated shallows (submerged aquatic vegetation, SAV), coral reefs, and riffle and pool complexes.

Stream: The term "stream" in the document means rivers, streams, brooks, etc.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Stream Simulation: A method for designing and building road-stream crossings intended to permit free and unrestricted movements of any aquatic species. Reference:
https://www.nae.usace.army.mil/Missions/Regulatory/Stream-and-River-Continuity/

Stream Smart Design: projects designed to allow the stream to act like a stream by passing fish and wildlife as well as the higher flows that come with large infrequent storms while protecting the stability of the road and public safety. Stream Smart Design follows the "Four S's": The culvert must SPAN the stream, allowing for passage of aquatic and terrestrial wildlife. The culvert has to be SET at the right elevation. The SLOPE of the culvert must match the stream. There must be SUBSTRATE (natural sediment) in the crossing. Reference:
www1.maine.gov/mdot/publications/docs/brochures/pocket_guide_stream_smart_web.pdf

Temporary impacts: Temporary impacts include waters of the U.S. that are temporarily filled, flooded, excavated, drained or mechanically cleared because of the regulated activity.

Temporal loss: The time lag between the loss of aquatic resource functions caused by the permitted impacts and the replacement of aquatic resource functions at the compensatory mitigation site(s) (33 CFR 332.2).

Utility line: Any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term 'utility line' does not include activities that drain a water of the U.S., such as drainage tile or French drains, but it does apply to pipes conveying drainage from another area.

Vegetated shallows/Submerged Aquatic Vegetation (SAV): Permanently inundated areas that under normal circumstances support communities of rooted aquatic vegetation, such as eelgrass in marine systems as well as a number of freshwater species in rivers and lakes. Note: Eelgrass surveys should be conducted be conducted between May and October unless otherwise directed.

Vernal pools (VPs): The State of Maine, Department of Environmental Protection has specific protections for VPs. For the purposes of these GPs, VPs are depressional wetland basins that typically go dry in most years and may contain inlets or outlets, typically of intermittent flow. Vernal pools range in both size and depth depending upon landscape position and parent material(s). In most years, VPs support one or more of the following obligate indicator species: wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp.). However, they should preclude sustainable populations of predatory fish.

Water dependency: activity requiring access or proximity to or siting within a special aquatic site (SAS) to fulfill its basic project purpose.

Water diversions: Water diversions are activities such as bypass pumping (e.g., "dam and pump") or water withdrawals. Temporary flume pipes, culverts or cofferdams where normal flows are maintained within the stream boundary's confines aren't water diversions. "Normal flows" are defined as no change in flow from pre-project conditions.

Weir: A barrier across a river designed to alter the flow characteristics. In most cases, weirs take the form of a barrier, smaller than most conventional dams, across a river that causes water to pool behind the structure (not unlike a dam) and allows water to flow over the top. Weirs are commonly used to alter the flow regime of the river, prevent flooding, measure discharge and help render a river navigable.

Waters of the United States (U.S.)

Waters of the U.S.: The term waters of the U.S. and all other terms relating to the geographic scope of jurisdiction are defined at 33 CFR 328. Also see Section 502(7) of the Federal CWA [33 USC 1352(7)]. Waters of the U.S. include jurisdictional wetlands. Not all waters and wetlands are jurisdictional. Contact the Corps with any questions regarding jurisdiction.

Navigable waters: Refer to 33 CFR 329. These waters include the following federally-designated navigable waters in New England. This list represents only those waterbodies for which affirmative determinations have been made; absence from this list shall not be taken as an indication that the waterbody is not navigable: In Maine, navigable waters are those waters that are subject to the ebb and flow of the tide in addition to the non-tidal portions of the following federally-designated waters in Maine (the Kennebec River to Moosehead Lake, the Penobscot River to the confluence of the East and West Branch at Medway and, Lake Umbagog within the State of Maine).

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tideline.

APPENDIX C

MS4 Stormwater Awareness Plan
MS4 Targeted BMP Adoption Plan

Maine Turnpike Authority
MS4 Stormwater Awareness Plan

Developing and implementing a Best Management Plan (BMP) Adoption Plan is a requirement of the Maine Department of Environmental Protection's (DEP's) *General Permit for the Discharge of Stormwater from Maine Department of Transportation (MaineDOT) and Maine Turnpike Authority (MTA) Municipal Separate Storm Sewer Systems* (MS4s). Since MTA is subject to this MS4 permit and its six *Minimum Control Measures* (MCMs), *Part IV(H)(1)(a)(ii)* requires MTA to conduct Public Education and Outreach (MCM #1) efforts that **encourage *"employees and contractors to utilize BMPs that minimize stormwater pollution."***

1.0 PERMIT LANGUAGE

Part IV(H)(1) of the MS4 Permit establishes three goals for *MCM #1 - Public Education and Outreach on Stormwater Impacts*. These include the following:

1. *To raise awareness that polluted stormwater runoff is one of the most significant sources of water quality problems for Maine's waters;*
2. *To motivate staff and contractors to use Best Management Practices (BMPs) which reduce polluted stormwater runoff; and*
3. *To reduce polluted stormwater runoff as a result of increased awareness and utilization of BMPs.*

In addition to continuing outreach efforts from the previous MS4 Permit (e.g., 5-year cycle)[1], MTA must satisfy these three goals by encouraging employees and contractors to use BMPs that minimize stormwater pollution as part of this Targeted BMP Adoption Plan. The progress and effectiveness of the Plan and associated efforts must then be evaluated and included in each annual report submitted to Maine DEP in accordance with *Part IV(J)* of the MS4 Permit. As part of this evaluation, MTA must include an assessment of process indicators and impact indicators to evaluate efforts in meeting these goals. In the fifth annual report, the BMP Adoption Plan shall be reviewed fully and include analysis of the process and impact indicators.

2.0 COVERAGE AREA

This plan has been developed for implementation by MTA to meet MS4 Permit requirements for Urbanized Areas (UAs) within MTA's right-of-way (ROW).

Process indicators are related to the execution of the program, such as (1) percent or number of employees who attend a training session; or (2) completion of a particular action item (e.g., distributing posters to employee work place and/or contractor job site).

Impact indicators are related to the achievement of the goals and objectives of the program, such as (1) observable/measurable effects on behavior; or (2) percent or number of employees to describe sources of storm water pollution, proper spill response, or maintenance of a BMP.

[1] Public education and outreach efforts continued from the previous MS4 permit cycle include (but are not limited to) conducting annual stormwater pollution prevention/spill prevention control and countermeasures (SPCC) training to MTA maintenance and engineering employees, as well as other Measurable Goals that can be found in MTA's Stormwater Program Management Plan (SPMP) dated December 2013.

3.0 OBJECTIVE

The objective of this Stormwater Awareness Plan is to raise awareness among MTA employees and contractors regarding stormwater issues. For example, stormwater runoff is one of the most significant sources of water quality problems for Maine's waters.

The goal of the Stormwater Awareness Plan is to provide information relative to stormwater impacts in an effort to raise awareness of MTA employees. For example, 100% of Highway Maintenance employees and Engineering Inspectors will attend training sessions at which stormwater issues and impacts will be addressed. Additionally, MTA will also work to raise awareness among MTA employees in other departments, such as Fare Collections by providing abbreviated Stormwater/Spill Prevention and Response training to supervisors and managers who will in turn inform additional employees regarding stormwater issues relative to MTA operations.

The goal of this Plan is to also raise awareness of contractors by providing this Plan, as well as the Targeted BMP Adoption Plan (which is designed to motivate employees and contractors to use BMPs to reduce polluted stormwater runoff), prior to starting work on MTA projects.

4.0 MESSAGE

The message MTA will strive to impart on employees and contractors will relate to the potential impacts their activities may have on stormwater runoff and water quality in Maine. The message statement is:

> *"The effect stormwater runoff has on the water quality of Maine waters is impacted by the level of effort put into the construction, operation, and maintenance of MTA's stormwater infrastructure. Polluted water entering the storm drain system and discharged untreated directly to waterbodies is used for drinking, fishing, and swimming, which impacts everyone in Maine."*

In addition to the Stormwater Awareness Plan message, the target audience will be informed of authorized non-stormwater discharges allowed by the permit provided they do not contribute to a violation of water quality standards, as determined by the DEP. These include the following:

- Landscape irrigation
- Diverted stream flows
- Rising ground waters
- Uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20))
- Uncontaminated pumped ground water
- Uncontaminated flows from foundation drains
- Air conditioning and compressor condensate
- Irrigation water
- Flows from uncontaminated springs
- Uncontaminated water from crawl space pumps
- Uncontaminated flows from footing drains
- Lawn watering runoff
- Flows from riparian habitats and wetlands
- Residual street wash water (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material has been removed and detergents are not used)
- Hydrant flushing and fire fighting activity runoff
- Water line flushing and discharges from potable water sources

4.1 OUTREACH TOOL(S) AND DISTRIBUTION

This Stormwater Awareness Plan and message will be provided to each MTA employee at annual training sessions and also to each contractor before commencement of work, in addition to the Targeted BMP Adoption Plan.

MTA has established or will rely on a number of outreach tools including the following:

- Existing stormwater training programs
  - For MTA employees, the internal training program will be evaluated annually (and updated, as needed) to include storm water topics in order to assess process and impact indicators; and
  - For contractors, MTA continues to require an On-Site Responsible Party (OSRP) certified by DEP's NPS Training Program to be knowledgeable of stormwater, specifically erosion prevention, sedimentation control and other potential impacts to water quality in Maine.
- Stormwater information packages to raise awareness and encourage utilization of targeted BMPs
  - For MTA employees, information will be provided during annual and supplemental training sessions. Informational packages may also be provided via MTA's newsletters and memos posted to employee bulletin boards, as well as through employee meetings, including quarterly Environmental Health & Safety Committee meetings.
  - For contractors, MTA will continue to include contractual requirements provided in the standard contract language that establishes the anticipated expectations for performance and payment. Stormwater information will be discussed or provided to contractors prior to starting work (e.g., at Pre-Construction meetings).

4.2 TIMELINE AND IMPLEMENTATION SCHEDULE

The timeline and implementation schedule is determined by:

- The training schedule established each year for MTA employees; and
- The solicitation and project award notices each year.

MTA has established a representative training schedule for each year and is similar to the table below:

Date	Training Type
April	Erosion and Sediment Control (ESC) and Stormwater Pollution Prevention for highway maintenance Supervisors and Foremen
May - June	Spill Prevention Control and Countermeasures Plan (SPCC), Stormwater and Erosion and Sediment Control (ESC) for MTA maintenance and engineering employees.
October	Spill Prevention Control and Countermeasures Plan (SPCC) and Stormwater for Fare Collections

The training sessions are designed to meet the goal of increasing awareness, as well as encouraging utilization of targeted BMPs to reduce stormwater runoff and potential impacts. In addition to these training sessions, there may be supplemental training sessions as needed and/or new information posters about stormwater BMPs posted at MTA facilities. Newsletters including stormwater information may also be sent each year to employees.

For contractors, MTA's requirement to have an OSRP certified by DEP's NPS Program ensures that the contractor is aware of stormwater related issues. In addition, MTA distributes this Stormwater Awareness Plan to contractors.

4.3 RESPONSIBLE PARTY

The primary responsible party at MTA is the Environmental Services Coordinator, John Branscom. The Environmental Services Coordinator may also rely on the following:

- MTA Supervisors, Foremen, Inspectors and/or other personnel to inform MTA employees and contractors of the targeted BMPs to be utilized;
- An environmental consulting firm, such as GZA GeoEnvironmental, Inc, to ensure MTA's employees are trained as defined by the Plan; and
- A design engineering firm, such as HNTB, who administer construction contracts, to ensure the Plan is properly implemented by the contractors.

4.4 EVALUATION PROTOCOL

MTA training is documented with attendance sign-in sheets, exam scores, in-class workshops and evaluation forms. A training database is maintained with information gathered from employees during each training session.

Process Indicators: Assessment of the program execution will be included in the annual report. The following topics will be reported for MTA employees:

1. Number of employees that attended training; and
2. Average exam scores for attendees.

Impact Indicators: Gauging the achievement of goals and objectives of the program will be included in the annual report. These will be addressed by the following behavioral change questions:

1. Number or percentage of employees to identify the goals of MCM #1 correctly;
2. Number or percentage of employees to identify source(s) of storm water pollution;
3. Number or percentage of employees to identify and differentiate between structural and non-structural BMPs; and
4. Number or percentage of employees to demonstrate an applied knowledge of BMP-specific information.

Process and impact indicators for contractors will be tracked by documenting the pre-construction meetings when this Plan and the Targeted BMP Adoption Plan are provided to each contractor and the contractor, in turn, provides MTA with the certification for their OSRP for the project.

4.5 PLAN MODIFICATION

This Stormwater Awareness Plan may require modification if evaluation data shows that efforts are not effective. Should modifications be needed, the plan will be revised or a new plan will be developed.

I have read and accept the policies outlined in this Stormwate Awareness Plan as required by MTA's MS4 Permit.

_____	_____
Contractor Signature of Acknowledgement	Date
_____	_____
Printed Name	Project Number

Maine Turnpike Authority
MS4 Targeted BMP Adoption Plan

Developing and implementing a Best Management Plan (BMP) Adoption Plan is a requirement of the Maine Department of Environmental Protection's (DEP's) *General Permit for the Discharge of Stormwater from Maine Department of Transportation (MaineDOT) and Maine Turnpike Authority (MTA) Municipal Separate Storm Sewer Systems* (MS4s). Since MTA is subject to this MS4 permit and its six *Minimum Control Measures* (MCMs), *Part IV(H)(1)(a)(ii)* requires MTA to conduct Public Education and Outreach (MCM #1) efforts that **encourage *"employees and contractors to utilize BMPs that minimize stormwater pollution."***

1.0 PERMIT LANGUAGE

Part IV(H)(1) of the MS4 Permit establishes three goals for *MCM #1 - Public Education and Outreach on Stormwater Impacts.* These include the following:

1. *To raise awareness that polluted stormwater runoff is one of the most significant sources of water quality problems for Maine's waters;*
2. *To motivate staff and contractors to use Best Management Practices (BMPs) which reduce polluted stormwater runoff; and*
3. *To reduce polluted stormwater runoff as a result of increased awareness and utilization of BMPs.*

In addition to continuing outreach efforts from the previous MS4 Permit (e.g., 5-year cycle)[1], MTA must satisfy these three goals by encouraging employees and contractors to use BMPs that minimize stormwater pollution as part of this Targeted BMP Adoption Plan. The progress and effectiveness of the Plan and associated efforts must then be evaluated and included in each annual report submitted to Maine DEP in accordance with *Part IV(J)* of the MS4 Permit. As part of this evaluation, MTA must include an assessment of process indicators and impact indicators to evaluate efforts in meeting these goals. In the fifth annual report, the BMP Adoption Plan shall be reviewed fully and include analysis of the process and impact indicators.

2.0 COVERAGE AREA

This plan has been developed for implementation by MTA to meet MS4 Permit requirements for Urbanized Areas (UAs) within MTA's right-of-way (ROW).

Process indicators are related to the execution of the program, such as (1) percent or number of employees who attend a training session; or (2) completion of a particular action item (e.g., distributing posters to employee work place and/or contractor job site).

Impact indicators are related to the achievement of the goals and objectives of the program, such as (1) observable/measurable effects on behavior; or (2) percent or number of employees to describe sources of storm water pollution, proper spill response, or maintenance of a BMP.

[1] Public education and outreach efforts continued from the previous MS4 permit cycle include (but are not limited to) conducting annual stormwater pollution prevention/spill prevention control and countermeasures (SPCC) training to MTA maintenance and engineering employees, as well as other Measurable Goals that can be found in MTA's Stormwater Program Management Plan (SPMP) dated December 2013.

3.0 OBJECTIVE

The objective of this Targeted BMP Adoption Plan is to educate MTA's employees and contractors to use BMPs which reduce polluted stormwater runoff within UA.

The goal of the BMP Adoption Plan is to target BMPs in the MaineDOT BMP Manual to be utilized by employees and contractors that minimize stormwater pollution during construction activities, such as:

(1) Installing silt fence prior to land disturbance; and

(2) Ensuring that hay mulch is applied to soil at the end of each work day.

For MTA employees, focus will also be given to targeting BMPs relevant to transportation-related maintenance and good housekeeping activities, such as:

(1) Regular sweeping of the mainline and peripheral facilities;

(2) Annual catch basin clean-outs and sediment removal;

(3) As needed ditch cleaning and repair;

(4) On-going culvert maintenance and litter removal.

Contractors are also encouraged to utilize BMPs in accordance with standard construction contract language (e.g., Special Provision 656), as well as the MaineDOT BMP Manual.

4.0 MESSAGE

The message MTA will strive to impart on employees and contractors will relate to the impacts their activities have on stormwater runoff and the importance of BMPs. The message statement is:

> *"Implementing appropriate BMPs, as described in MaineDOT's Stormwater BMPs Manual, to all MTA related activities will help to minimize stormwater pollutants introduced to Maine's waterbodies."*

4.1 OUTREACH TOOL(S) AND DISTRIBUTION

Targeted BMPs are included in the MaineDOT BMP Manual that is available at each MTA maintenance facility and referenced in standard contract language for contractors.

MTA has established or will rely on a number of outreach tools including the following:

- Existing stormwater training programs
    - For MTA employees, the internal training program will be evaluated annually (and updated, as needed) to include storm water topics in order to assess process and impact indicators; and
    - For contractors, MTA continues to require an On-Site Responsible Party (OSRP) certified by DEP's NPS Training Program to be knowledgeable in erosion prevention and sedimentation control.
- Existing standard contract language
    - Requires contractors to maintain a certified OSRP on-site who has authority to implement BMPs appropriately; and
    - Specifies that contractors must utilize MaineDOT's BMP Manual, as well as other BMPs, to ensure construction site runoff is minimized.
- Stormwater information packages to raise awareness and encourage utilization of targeted BMPs
    - For MTA employees, information will be provided during annual and supplemental training sessions. Informational packages may also be provided via MTA's newsletters

and memos posted to employee bulletin boards, as well as through employee meetings, including quarterly Environmental Health & Safety Committee meetings.

- For contractors, MTA will continue to include contractual requirements provided in the standard contract language that establishes the anticipated expectations for performance and payment. This Target BMP Adoption Plan will also be provided to contractors prior to starting work (e.g., at Pre-Construction meetings).

4.2 TIMELINE AND IMPLEMENTATION SCHEDULE

The timeline and implementation schedule is determined by:

- The training schedule established each year for MTA employees; and
- The solicitation and project award notices each year.

MTA has established a representative training schedule for each year and is similar to the table below.

Date	Training Type
April	Erosion and Sediment Control (ESC) and Stormwater Pollution Prevention for Highway Maintenance Supervisors and Foremen
May - June	Spill Prevention Control and Countermeasures Plan (SPCC), Stormwater and Erosion and Sediment Control (ESC) for MTA maintenance and engineering employees.

In addition to the training sessions above, there may be supplemental training sessions as needed and/or new information posters about stormwater BMPs posted at MTA facilities. Newsletters including stormwater information may also be sent each year to employees.

For contractors, targeted BMPs are already being implemented in accordance with contract language and the MaineDOT BMP Manual. In addition, MTA distributes this Targeted BMP Adoption Plan to contractors.

4.3 RESPONSIBLE PARTY

The primary responsible party at MTA is the Environmental Services Coordinator, John Branscom. The Environmental Services Coordinator may also rely on the following:

- MTA Supervisors, Foremen, Inspectors and/or other personnel to inform MTA employees and contractors of the targeted BMPs to be utilized;
- An environmental consulting firm, such as GZA GeoEnvironmental, Inc, to ensure MTA's employees are trained as defined by the Plan; and
- A design engineering firm, such as HNTB, who administer construction contracts, to ensure the Plan is properly implemented by the contractors.

5.0 EVALUATION PROTOCOL

MTA training is documented with attendance sign-in sheets, exam scores, in-class workshops and evaluation forms. A training database is maintained with information gathered from employees during each training session.

Process Indicators: Assessment of the program execution will be included in the annual report. The following topics will be reported for MTA employees:

1. Number of employees that attended training; and
2. Average exam scores for attendees.

Impact Indicators: Gauging the achievement of goals and objectives of the program will be included in the annual report. These will be addressed by the following behavioral change questions:

1. Number or percentage of employees to identify the goals of MCM #1 correctly;

2. Number or percentage of employees to identify source(s) of storm water pollution;
3. Number or percentage of employees to identify and differentiate between structural and non-structural BMPs; and
4. Number or percentage of employees to demonstrate an applied knowledge of BMP-specific information.

Process and impact indicators for contractors will be tracked and evaluated based on daily and/or weekly inspections conducted on-site.

6.0 PLAN MODIFICATION

This Targeted BMP Adoption Plan may require modification if evaluation data shows that efforts are not effective. Should modifications be needed, the plan will be revised or a new plan will be developed.

I have read and accept the policies outlined in this Stormwater Awareness Plan as required by MTA's MS4 Permit.

_____	_____
Contractor Signature of Acknowledgement	Date
_____	_____
Printed Name	Project Number