MAINE TURNPIKE AUTHORITY

MAINE TURNPIKE

CONTRACT DOCUMENTS

CONTRACT 2019.13

EXIT 45 EMBANKMENT PRELOAD
MILE 44.9

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.

TABLE OF CONTENTS

MAINE TURNPIKE AUTHORITY

NOTICE TO CONTRACTORS

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

CONTRACT 2019.13

EXIT 45 EMBANKMENT PRELOAD
MILE 44.9

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 August 27, 2019 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 Highway Construction Projects. All other bids may be rejected. This Project includes a wage determination developed by the State of Maine Department of Labor.

The work consists of constructing preload embankments at Exit 45 of the Maine Turnpike in the Town of Scarborough and City of South Portland, Maine. The work includes clearing, grubbing, wick drains, drainage layers, embankments, gravel, highway lighting, maintenance of traffic (including temporary ramps), and all other work incidental thereto in accordance with the Plans and Specifications.

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 Twenty Five ($125.00) 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, Revision of November 2014" 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 August 6, 2019 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 2019.13

EXIT 45 EMBANKMENT PRELOAD
MILE 44.9

MAINE TURNPIKE AUTHORITY

PROPOSAL

CONTRACT 2019.13

EXIT 45 EMBANKMENT PRELOAD
MILE 44.9

TO MAINE TURNPIKE AUTHORITY:

The work consists of constructing preload embankments at Exit 45 of the Maine Turnpike in the Town of Scarborough and City of South Portland, Maine. The work includes clearing, grubbing, wick drains, drainage layer, embankments, gravel, highway lighting, maintenance of traffic (including temporary ramps), and all other work incidental thereto in accordance with the Plans and Specifications.

This Work will be done under a Contract known as Contract 2019.13 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 his 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. 2019.13
Exit 45
Embankment Preload
Mile 44.9

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
201.11	CLEARING	Acre	3				
202.15	REMOVING EXISTING MANHOLE OR CATCH BASIN	Each	2				
202.202	REMOVING PAVEMENT SURFACE	Square Yard	830				
203.20	COMMON EXCAVATION	Cubic Yard	33,400				
203.24	COMMON BORROW	Cubic Yard	133,000				
203.25	GRANULAR BORROW	Cubic Yard	72				
209.29	PREFABRICATED VERTICAL DRAINS	Linear Foot	2,343,000				
304.10	AGGREGATE SUBBASE COURSE - GRAVEL	Cubic Yard	173,000				
304.14	AGGREGATE BASE COURSE - TYPE A	Cubic Yard	21				
403.207	HOT MIX ASPHALT, 19.0 mm NOMINAL MAXIMUM SIZE	Ton	170				
403.208	HOT MIX ASPHALT, 12.5 mm NOMINAL MAXIMUM SIZE	Ton	580				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
403.212	HOT MIX ASPHALT, 4.75 mm NOMINAL MAXIMUM SIZE	Ton	1,350				
403.213	HOT MIX ASPHALT, 12.5 mm NOMINAL MAXIMUM SIZE (BASE AND INTERMEDIATE BASE COURSE)	Ton	790				
409.15	BITUMINOUS TACK COAT RS-1 OR RS-1H - APPLIED	Gallon	320				
419.30	SAWING BITUMINOUS PAVEMENT	Linear Foot	620				
526.306	TEMPORARY CONCRETE BARRIER, TYPE I - SUPPLIED BY AUTHORITY (3,000 LF)	Lump Sum	1				
527.341	WORK ZONE CRASH CUSHIONS - TL-3	Unit	1				
527.3411	WORK ZONE CRASH CUSHIONS - TL-3 LEFT IN PLACE	Unit	1				
527.3421	WORK ZONE CRASH CUSHIONS - TL-2 LEFT IN PLACE	Unit	5				
602.30	FLOWABLE CONCRETE FILL	Cubic Yard	2				
603.155	12 INCH REINFORCED CONCRETE PIPE - CLASS III	Linear Foot	56				
603.159	12 INCH CULVERT PIPE OPTION III	Linear Foot	72				
603.169	15 INCH CULVERT PIPE OPTION III	Linear Foot	99				
			CARRIED FORWARD:				

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
603.175	18 INCH REINFORCED CONCRETE PIPE - CLASS III	Linear Foot	36				
603.195	24 INCH REINFORCED CONCRETE PIPE - CLASS III	Linear Foot	480				
603.205	30 INCH REINFORCED CONCRETE PIPE - CLASS III	Linear Foot	780				
603.215	36 INCH REINFORCED CONCRETE PIPE - CLASS III	Linear Foot	76				
603.255	60 INCH REINFORCED CONCRETE PIPE - CLASS III	Linear Foot	180				
603.28	CONCRETE COLLAR	Each	2				
604.09	CATCH BASIN TYPE B1	Each	4				
604.093	60" CATCH BASIN TYPE B1	Each	2				
604.244	CATCH BASIN TYPE F4	Each	1				
606.1724	BRIDGE TRANSITION - TYPE II - MODIFIED	Each	1				
606.278	TERMINAL END - ANCHORED END	Each	1				
606.352	REFLECTORIZED BEAM GUARDRAIL DELINEATOR	Each	280				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
606.356	UNDERDRAIN DELINEATOR POST	Each	24				
606.3562	DELINEATOR POST - REMOVE AND STACK	Each	60				
606.3606	GUARDRAIL - REMOVE, MODIFY, AND RESET DOUBLE RAIL	Linear Foot	25				
607.09	WOVEN WIRE FENCE - METAL POSTS	Linear Foot	650				
607.17	CHAIN LINK FENCE – 6 FOOT	Linear Foot	1,200				
607.23	CHAIN LINK FENCE GATE	Each	1				
607.32	BRACING ASSEMBLY TYPE I - METAL POSTS	Each	8				
607.33	BRACING ASSEMBLY TYPE II - METAL POSTS	Each	3				
609.31	CURB TYPE 3	Linear Foot	18				
610.08	PLAIN RIPRAP	Cubic Yard	170				
610.18	STONE DITCH PROTECTION	Cubic Yard	45				
610.181	TEMPORARY STONE CHECK DAM	Cubic Yard	45				

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	7,350				
615.07	LOAM	Cubic Yard	5,200				
618.14	SEEDING METHOD NUMBER 2	Unit	420				
619.1201	MULCH - PLAN QUANTITY	Unit	420				
619.1202	TEMPORARY MULCH	Lump Sum	1				
620.58	EROSION CONTROL GEOTEXTILE	Square Yard	570				
626.121	QUAZITE JUNCTION BOX (36X24)	Each	5				
626.122	QUAZITE JUNCTION BOX (18X11)	Each	6				
626.131	ADJUST EXISTING JUNCTION BOX TO GRADE	Each	10				
626.22	NON-METALLIC CONDUIT	Linear Foot	100				
627.77	REMOVING EXISTING PAVEMENT MARKING	Square Foot	5,350				
627.78	TEMPORARY PAVEMENT MARKING LINE, WHITE OR YELLOW	Linear Foot	15,300				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
627.812	TEMPORARY RAISED PAVEMENT MARKERS	Each	1,400				
629.05	HAND LABOR, STRAIGHT TIME	Hour	20				
631.12	ALL PURPOSED EXCAVATOR (INCLUDING OPERATOR)	Hour	40				
631.172	TRUCK - LARGE (INCLUDING OPERATOR)	Hour	40				
631.22	FRONT END LOADER (INCLUDING OPERATOR)	Hour	40				
631.32	CULVERT CLEANER (INCLUDING OPERATORS)	Hour	20				
631.36	FOREMAN	Hour	40				
634.2083	REMOVE AND STACK LIGHT STANDARD	Each	4				
634.221	TEMPORARY HIGHWAY LIGHT	Each	4				
639.18	FIELD OFFICE, TYPE A	Each	1				
639.26	INSTRUMENTATION (GEOTECHNICAL)	Lump Sum	1				
645.105	REMOVE AND STACK SIGN	Each	4				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
652.30	FLASHING ARROW	Each	3				
652.312	TYPE III BARRICADES	Each	10				
652.33	DRUM	Each	560				
652.332	DRUM LEFT IN PLACE	Each	170				
652.34	CONE	Each	50				
652.35	CONSTRUCTION SIGNS	Square Foot	1,850				
652.351	CONSTRUCTION SIGNS LEFT IN PLACE	Square Foot	530				
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	Lump Sum	1				
652.38	FLAGGERS	Hour	80				
652.41	PORTABLE-CHANGEABLE MESSAGE SIGN	Each	8				
652.45	TRUCK MOUNTED ATTENUATOR	Calendar Day	20				
652.4501	TRUCK MOUNTED ATTENUATOR - 24,000 LB	Calendar Day	30				

CARRIED FORWARD:

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
				Dollars	Cents	Dollars	Cents
			BROUGHT FORWARD:				
652.451	AUTOMATED TRAILER MOUNTED SPEED LIMIT SIGN	Calendar Day	20				
656.50	BALED HAY, IN PLACE	Each	100				
656.60	TEMPORARY BERMS	Linear Foot	1,800				
656.62	TEMPORARY SLOPE DRAINS	Linear Foot	210				
656.632	30 INCH TEMPORARY SILT FENCE	Linear Foot	17,400				
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., 201___

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)

Supplemental Specifications are available at www.maineturnpike.com

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART II – SPECIAL PROVISIONS

PART II - SPECIAL PROVISIONS

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 work consists of constructing preload embankments at Exit 45 of the Maine Turnpike in the Town of Scarborough and City of South Portland, Maine. The work includes clearing, grubbing, wick drains, drainage layers, embankments, gravel, highway lighting, maintenance of traffic (including temporary ramps), and all other work incidental thereto in accordance with the Plans and Specifications.

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 – Contract 2019.13 – Exit 45 Embankment Preload Mile 44.9". The right is reserved by the Resident to make such minor corrections or alterations in the Plans as he deems 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:

Christmas 2019	12:00 p.m. preceding Tuesday noon to 6:00 a.m. the following Thursday.
New Year's 2020	6:00 p.m. preceding Tuesday to 6:00 a.m. the following Thursday.
Independence Day 2020 (Fourth of July)	12:01 p.m. preceding Thursday to 6:00 a.m. the following Monday.
Christmas 2020	12:00 p.m. preceding Thursday noon to 6:00 a.m. the following Saturday.
New Year's 2021	6:00 p.m. preceding Thursday to 6:00 a.m. the following Saturday.

103.4 Notice of Award

The following sentence is added:

The Maine Turnpike Authority Board is scheduled to consider the Contract Award on September 5, 2019.

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 THE PERTAINING STATE FUNDED PREVAILING WAGE CONSTRUCTION SITE

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.

Title of Project --------MTA 2019.13-Exit 45 Embankment Preload-Mile 44.9

Location of Project --Scarborough, South Portland, Cumberland County

2019 Fair Minimum Wage Rates
Highway & Earth Cumberland County

Occupation Title	Minimum Wage	Minimum Benefit	Total	Occupation Title	Minimum Wage	Minimum Benefit	Total
Asphalt Raker	$16.00	$0.79	$16.79	Line Erector - Power/Cable	$31.00	$5.32	$36.32
Backhoe Loader Operator	$22.00	$5.08	$27.08	Loader Operator - Front-End	$20.00	$2.97	$22.97
Bulldozer Operator	$23.85	$4.32	$28.17	Mechanic- Maintenance	$20.50	$2.96	$23.46
Carpenter	$20.00	$2.64	$22.64	Millwright	$24.25	$8.80	$33.05
Carpenter - Rough	$19.00	$1.88	$20.88	Oil/Fuel Burner Serv. & Install	$23.00	$3.51	$26.51
Cement Mason/Finisher	$17.00	$1.34	$18.34	Painter	$17.50	$0.42	$17.92
Concrete Mixing Plant Operator	$22.11	$4.89	$27.00	Paver Operator	$21.00	$0.27	$21.27
Crane Operator =>15 Tons)	$26.80	$4.74	$31.54	Pipe-layer	$22.00	$1.49	$23.49
Crusher Plant Operator	$17.00	$3.86	$20.86	Re-claimer Operator	$21.58	$1.80	$23.38
Driller - Well	$19.83	$2.66	$22.49	Roller Operator - Earth	$22.11	$3.02	$25.13
Electrician - Licensed	$22.55	$14.26	$36.81	Roller Operator - Pavement	$19.00	$1.38	$20.38
Electrician Helper/Cable Puller	$17.00	$1.34	$18.34	Screed/Wheelman	$19.00	$0.94	$19.94
Excavator Operator	$21.00	$3.11	$24.11	Sider	$16.75	$1.38	$18.13
Fence Setter	$17.50	$2.94	$20.44	Stone Mason	$21.00	$0.95	$21.95
Flagger	$13.00	$0.00	$13.00	Truck Driver - Light	$17.00	$1.15	$18.15
Grader/Scraper Operator	$18.00	$1.62	$19.62	Truck Driver - Medium	$19.00	$3.13	$22.13
Highway Worker/Guardrail Install	$17.50	$1.76	$19.26	Truck Driver - Heavy	$17.50	$1.41	$18.91
Ironworker - Reinforcing	$22.11	$2.79	$24.90	Truck Driver - Tractor Trailer	$18.50	$3.20	$21.70
Laborers (Incl. Helpers & Tenders)	$15.00	$0.84	$15.84	Truck Driver - Mixer (Cement)	$17.19	$1.07	$18.26
Laborer - Skilled	$17.85	$1.50	$19.35				

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

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

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

Posting of Schedule - Posting of this schedule is required in accordance with 26 MRSA §1301 et. seq., by any contractor holding a State contract for construction valued at $50,000 or more and any subcontractors to such a contractor.

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.

Determination No: HI-124-2019

Filing Date: June 20, 2019

Expiration Date: 12-31-2019

A true copy

Attest: Scott R. Cotnoir

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

BLS(Highway & Earth Cumberland)

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 his 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 his 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 his 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

Six utility facilities, five distribution facilities and one transmission facility, are present within the project site. The existing aerial distribution cables extend over Cummings Road near the Payne Road intersection and extend northerly along the east side of Cummings Road crossing the Maine Turnpike; an existing residential service line crosses over Cummings Road approximately 200 feet north of the proposed access road. The existing aerial transmission cables (3 lines) cross the Maine Turnpike from west to east at approximately 2231+00 to 2232+50. One transmission line, upon crossing the Maine Turnpike, turns and runs northerly, paralleling the Turnpike, adjacent to the MTA Right-of-Way, extending beyond the project limits.

The following aerial utilities are known to be present on this project, including contact information:

CENTRAL MAINE POWER COMPANY (CMPCo)
83 Edison Drive
Augusta, ME 04336
ATTN: Jenna Muzzy
Tel: (207) 629-2029
Email: jenna.muzzy@cmpco.com

CHARTER COMMUNICATIONS (SPECTRUM)
118 Johnson Road
Portland, ME 04102
ATTN: Chip Deane
Tel: (207) 415-5286
Email: chip.deane@charter.com

CONSOLIDATED COMMUNICATIONS
5 Davis Farm Road, Floor 2
Portland, ME 04103
ATTN: Marty Pease
Tel: (207) 797-1119
Email: martin.pease@consolidated.com

FIRSTLIGHT FIBER (OXFORD NETWORKS)
491 Lisbon Street
Lewiston, ME 04240
ATTN: Michael Ellingwood
Tel: (207) 333-3471
Email: mellingwood@firstlight.net

MCI WORLD COMMUNICATIONS (VERIZON)
82B Northside Road PO Box 600
Charlton, MA 01507
ATTN: Tremain Fernandes
Tel: (617) 953-9575
Email: tremain.k.fernandes@verizon.com

Relocation of the existing distribution utilities adjacent to Cummings Road will be relocated permanently on new poles west of the proposed bridge. The utility relocation work is anticipated to commence in the Fall of 2019. The relocation efforts associated with Contract 2018.19 have an effect on timing and coordination needs for the Maine Turnpike Authority's highway lighting as noted below.

CMPCo – Transmission will be relocating a portion of the transmission facilities in support of this project. This relocation work will be administered under Contract 2019.14 - Exit 45 - CMP Relocation. The Contractor shall not conduct any work north (ahead STA) of STA. 310+45 until CMPCo has relocated and activated their new facilities. These transmission lines also include third-party fiber optic lines. CMPCo is responsible for all coordination with the third-party fiber optic company.

Depending on the Contractor's selected equipment, access, schedule, and method for embankment construction, the Contractor may be working next to, or under the existing wires prior to relocation with limited clearance. The Contractor shall be responsible for complying with M.R.S.A. Title35-A, Chapter 7-A Sections 751 -761 Overhead High-Voltage Line Safety Act. Prior to commencing any work that may come within ten (10) feet of any aerial electrical line the Contractor shall notify the aerial utilities as per section 757 of the aforementioned act. Any work within 25 feet of CMPCo's facilities will require advance coordination with CMPCo to have a

CMPCo representative on-site to provide a safety watch. The CMPCo representative may stop work within the CMPCo right-of-way if they believe the work activities are unsafe or may cause damage to CMPCo's facilities. All CMPCo poles or guy wires that will have construction activities or construction traffic within 25 ft shall be protected by two sections of temporary concrete barrier. Three temporary barrier markers shall be mounted on the barrier at each location.

The bidding contractors are encouraged to visit the site, prior to bid, to determine how to construct safely. Temporary utility adjustments are not anticipated. If temporary relocation becomes necessary, the Contractor shall notify the affected utilities. Any cost for temporary relocations shall be the responsibility of the Contractor. The Contractor shall not have any claims against the Authority if the existing lines become a construction issue. Sufficient time will need to be allowed prior to the construction for all required temporary relocation.

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

The following table provides an estimate of working days for relocation of each utility service:

	Utility	Pole Set (Days)	Install New Lines (Nights)	Splice Fiber Optic Lines (Days)	Remove Old Lines (Nights)	Pole Removal (Days)
Coordinated under Contract 2018.19	CMP	3	5	-	2	1
	Charter	-	7	5	3	-
	Consolidated	-	7	5	3	-
	FirstLight	-	5	5	3	-
	Verizon	-	5	10	5	-
Coordinated under Contract 2019.13 & 2019.14	CMP– Transmission	All CMP work is scheduled to be complete by 12/1/2019				

The Contractor shall notify the above utility companies a minimum of 30 days prior to the need for utility relocation.

UNDERGROUND UTILITIES

ELECTRIC (LIGHTING):

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

Maine Turnpike Authority owns highway lighting facilities within the project limits. The proposed work includes remove and stack of four highway light standards adjacent to northbound off ramp and rest of these lights on new wood poles.

The Contractor shall note that the utility poles and electric drop for the highway lighting are being relocated in conjunction with MTA Contract 2018.19 Cummings Road Bridge Replacement. The Contractor shall coordinate with MTA and CMPCo to prior to impacting lighting facilities.

SEWER:

Dead River Company
82 Running Hill Road, Suite 400
South Portland, ME 04106
ATTN: Lloyd Porter
Tel: (207) 773-5868
Email: lloyd.porter@deadriver.com

Note: Dead River Facilities are managed by:

The Boulos Company
1 Canal Plaza, Suite 500
Portland, ME 04101
ATTN: Carl Trottier
Tel: (207) 553-1771
Email: ctrottier@boulos.com

Dead River Company owns a 12-inch ductile iron gravity sewer service that crosses the Maine Turnpike at approximately STA. 2237+40, and crosses the northbound on ramp (Ramp C) at approximately STA. 316+45. No work to their facility is expected during this contract.

WATER:

Portland Water District (PWD)
P.O. Box 3553
Portland, ME 04104
ATTN: Joe Parent
Tel: (207) 523-5261
Email: jparent@pwd.org

Portland Water District owns two facilities within the project limits; a 16-inch underground trunk water main within a 42-inch concrete casing crosses the Maine Turnpike southbound on ramp (Ramp A) near STA. 109+75, the Access Road near STA. 0+95, and the northbound off ramp (Ramp D) near STA. 401+65; and a 30-inch trunk water main within a 54-inch concrete casing crosses the Maine Turnpike and northbound on ramp (Ramp C) near STA 316+00. PWD will be extending the 42-inch concrete casing toward Cummings Road, and the 16-inch water main will be renewed and relocated with a combination of High Density Polyethylene and restrained Ductile Iron piping. PWD will renew and relocate the 30-inch concrete water main with a combination of HDPE and restrained ductile iron piping.

The Contractor shall not place any fill over either water main crossing location until after Portland Water District has completed their relocations.

104.4.7 Cooperation With Other Contractors

This Subsection is amended by the addition of the following:

Adjacent contracts currently under construction or tentatively scheduled for the 2019 - 2021 construction seasons include:

- MTA Contract 2016.08 – Interchange 44 Barrier Toll Plaza ORT Conversion, MM 44.3
- MTA Contract 2018.19 – Cummings Road Underpass Bridge Replacement, MM 44.6
- MTA Contract 2019.01 – Scarborough/South Portland/Portland Mainline Pavement Rehabilitation, MM 42 – 44.3
- MTA Contract 2019.09 – Stroudwater River Overpass Bridge Widening and Rehabilitation, MM 46.7 & MCRR Overpass Bridge Widening and Rehabilitation, MM 47.9
- MTA Contract 2019.14 – Exit 45 - CMP Relocation, MM 44.9 to 45.3
- MTA Contract 2020.02 – Exit 45 Interchange Reconstruction, MM 44.9
- MTA Contract 2020.01 – Saco/Scarborough Mainline Pavement Rehabilitation, MM 35.5 – 42.0
- MTA Contract 2020.03 – Mainline Widening and Median Safety Improvements, MM 43.0 – 46.0

The Contractor shall be aware that Contract 2019.14 CMP Transmission Line Relocation and 2020.02 Exit 45 Interchange Reconstruction will occur concurrently to this Contract and located within the same project limits. 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 need to cooperate with adjacent contractors.

The Contractor shall maintain access to the Cummings Road field trailer at the Exit 45 northbound off ramp.

The following Subsection is added:

105.8.2 Permit Requirements

The Project is being constructed under the Maine Department of Environmental Protection (DEP) Natural Resources Protection Act Tier III. Additionally, the Project impacts environmental resources that have been permitted under a Maine Turnpike Authority's Portland Area Widening project permit, which requires a DEP Natural Resources Protection Act Individual Permit.

The Project is being permitted under Section 404 of the Clean Water Act, through the US Army Corps of Engineers Individual Permit. Additionally, the Project impacts environmental resources that have been permitted under the Maine Turnpike Authority's Portland Area Widening project permit, which also requires a US Army Corps of Engineers Individual Permit.

Final permit authorization is anticipated by September 15, 2019. A contract modification will be issued acknowledging receipt or denial of the permit; providing the actual Maine DEP and US Army Corps of Engineer's permit conditions; and providing Plan and Specification changes (if required) to adjust the Project schedule or phasing to meet the permit requirements.

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

A Notice of Intent (NOI), accompanied by a preliminary Limit of Disturbance (LOD) plan 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, which were submitted as part of the NOI, has been estimated to be **24.12** 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:

- If the cumulative area of disturbance exceeds the estimated LOD noted above, by less than one acre, the Resident shall have a minimum of five (5) working days to approve the revised LOD plan.
- If the cumulative area of disturbance exceeds the estimated LOD noted above, by over one acre, the Resident shall first approve of the plan and then possibly resubmit the NOI for MaineDEP approval. The approval may take a minimum of 21 working days.

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

The Contractor shall comply with the conditions outlined in the Army Corps General Permit, Maine Department of Environmental Protection NRPA Tier III and Individual Permits, the US Army Corps of Engineers Individual Permit, and the Maine Pollutant Discharge Elimination System General Permit for stormwater discharge associated with construction activity. 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 2000 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. Refer to Appendix A for MS4 requirements and the Contractor's Signature of Acknowledgement.

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 March 31, 2021 or 30 days after the completion of Stage 2 embankments, whichever is later.

107.1.1 Substantial Completion

This Subsection is amended by the addition of the following:

Interim completion dates will apply to this contact as follows:

- 1st Stage of Two Stage Embankments Complete (as shown on plan sheets GT-01 and GT-02) must be complete by Match 31, 2020.
- All Single Stage Embankments Complete by June 30, 2020.

Substantially complete shall be defined by the Authority as 45 days from Notice to Proceed as authorized by the Engineer to commence Stage 2 embankments and shall include the following:

- All preload embankments constructed.
- All disturbed slopes loamed, seeded and mulched, temporary erosion control mix and/or blanket installed

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. Additional Supplemental Liquidated Damages on a calendar day basis in accordance with Subsection 107.8 shall be assessed for each calendar day that interim milestones, as defined in Subsections 107.4.6 and 107.8, is not achieved.

107.3.2 Night Work

This Subsection is amended by the addition of the following:

Nightwork will be allowed within the limitations defined in Section 652. The Contractor shall formally notify the Resident of their intent to perform night work a minimum of 14 calendar days ahead of the planned nightwork.

107.3.3 Sundays and Holidays

This Subsection is amended by the addition of the following:

Sunday work operations will be allowed within the limitations defined in Section 652. The Contractor shall formally notify the Resident of their intent to work on a Sunday a minimum of 14 calendar days ahead of the planned Sunday work.

107.4.6 Prosecution of Work

The Contractor shall incorporate the following operations and schedule restrictions into their Schedule of Work:

- No work on the Access Road shall commence until the Portland Water District has relocated and abandoned their existing 16" water main. Additionally, the Access Road may not be used to access the site without the approval of the Authority.
- No work north of Sta. 310+45 shall commence until CMP transmission poles and line have been moved and are operational in the new location (See Section 104.4.6).
- All culverts crossing the mainline, northbound ditching, and northbound drainage from STA. 2218+50 to STA. 2229+00 must be complete prior to starting embankment construction within existing loop ramps.
- The Temporary Ramp D Phase 2 ramp must be open to traffic prior to constructing portions of two Stage embankments east of the Maine Turnpike.
- All Stage 1 embankments in two Stage embankment locations must be completed on or before March 31, 2020.
- All other single Stage embankments must be complete on or before June 30, 2020.
- All Second Stage embankments must be constructed within 45 calendar days of notification by the engineer that second Stage construction may commence.

The Contractor shall refer to Section 652 for specific project maintenance of traffic requirements.

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 the ramp(s) is(are) closed. The intent of this specification is to minimize the amount of time for ramp closure, while providing the Contractor sufficient time to complete the work in a diligent manner and reopen the ramp as prescribed by the project's Substantial Completion date.

The Contractor shall provide the Authority 14 days advance notification of the anticipated ramp closure date to allow the Authority to coordinate with municipalities and local businesses. Seven (7) days ahead of the ramp closure, the Contractor shall provide two portable changeable message signs along the Turnpike adjacent to the ramp notifying the public of the upcoming closure. The detour shown on the Plans shall be installed to accommodate traffic during this road closure and covered or removed immediately following the road closure. The Contractor will reimburse the Authority at the rate of $2,500.00 for each one-hour period, or portion thereof, that the ramp(s) remains closed to traffic in excess of the 57-hour limit, as per Section 652 Specific Project Maintenance of Traffic Requirements. Total penalty shall be deducted from the next pay estimate.

The following Subsection is added:

107.4.7 Limitations of Operations

The Contractor shall adhere to the following limitations:

- Due to the presence of marine deposits, material stockpiles will not be permitted on the project site to minimize the potential for slope instability without prior approval by the Engineer. The Contractor shall spread materials delivered for embankment construction as they arrive on site.

- Care shall be taken when working near catch basins to ensure foreign material and contaminants do not enter the basin. If foreign material and/or contaminants enter the basin, it shall be removed prior to the material exiting the basin into a waterway. Removal shall be completed to the satisfaction of the Resident and payment shall be incidental to the Contract.

- The Contractor shall submit their proposed staging and storage areas for approval by the Resident. All stored equipment must be outside of the clear zone. Proposed equipment storage locations shall be selected based on (1) proximity to UIS/Protected Natural Resources; (2) minimizing rutting or other actions that may hinder sheet flow from roadway; and (3) spill control and prevention, in the event of a fluid release from the equipment.

- The Contractor shall complete the work as shown on the phasing and maintenance of traffic plans. Modifications to the phasing or associated maintenance of traffic plans will not be permitted unless approved by the Resident.

- All roadway lanes, ramps, bridges and driveways shall remain open at all times and in accordance with the restriction of Special Provision 652 unless otherwise noted herein or approved by the Resident.

- Ramps may not be closed on holiday weekends or weekends between Thanksgiving and Christmas.

- The Contractor shall progress the work in a manner that minimizes disruption to the public to the extent practical.

- The Contractor shall secure all catch basin grates with Sikaflex 1a before being allowed to shift traffic onto the shoulder. This work will be incidental to Item 652.361.

- Temporary lane shifts, lane closures, and shoulder closures along the Maine Turnpike shall only be used during periods of activity.

- The Exit 45 southbound off ramp will have a wide load restriction of 12 ft for the duration of this project.

107.6 Completion Incentives and Disincentives

This Contract will include Completion Incentives of $5,000 per day for each day the Contract is complete ahead of the Contract Completion date, up to a maximum of 15 days. The Contract will also include Completion Disincentives of $5,000 per day for each day beyond the Contraction Completion date that the Contract is completed. The "day" begins at 12:01 a.m. and ends at 12:00 a.m. (midnight).

107.8 Supplemental Liquidated Damages

This Subsection is amended by the addition of the following:

Interim Milestone	Supplemental Liquidated Damages Date	Supplemental Liquidated Damages Per Calendar Day
1st Stage of Two Stage Embankments Complete*	March 31, 2020	$5,000
All Single Stage Embankments Complete	June 30, 2020	$5,000
Two Stage Embankments Complete (Substantial Completion)	45 Calendar Days from Notice to Proceed	$5,000

*Refer to plan sheets GT-01 and GT-02 for locations of two stage embankments

The "day" begins at 12:01 a.m. and ends at 12:00 a.m. (midnight).

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 approach pavement shall be completed through the use of a milling machine. The milling machine(s) shall be capable of accurately establishing profile grades by referencing from a floating straight edge, a minimum of 30 feet.

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, November 2014 Edition – 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 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 planer capable of removing the bituminous concrete pavement to the required depth, transverse cross slope, and profile grade by use of an automated grade and slope control system. The controls shall automatically increase or decrease the pavement removal depth as required, and readily maintain desired cross slope to compensate for surface irregularities in the existing pavement course. The mill head on the machine shall have a maximum 8mm tooth spacing pattern and a minimum triple wrap configuration. The milling machine shall be capable of accurately establishing profile grades by referencing from a floating straight edge, minimum of 30± feet. 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 contractor shall operate the milling machine such that the forward operating speed of the machine in feet per minute (fpm) does not exceed 65% of the mill head in revolutions per minute (rpm). i.e. 100 rpm head speed equals maximum forward operating speed of 65 fpm. The contractor shall avoid stopping the milling operation during truck exchanges by staging the haul units accordingly.

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 between the travel lane and passing lane.

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 10 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. These corrections shall be done with no additional expense to the Authority.

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 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.

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:

Embankment materials (common borrow and aggregate subbase course - gravel) will be measured in place at the completion of construction. The contractor will be compensated for settlement that takes place during construction. Settlement during construction is based on numerous variables including existing soils, timing of wick drains, speed of embankment construction, and height and density of embankment. Elevations will be obtained at the settlement platforms before and after the embankment is constructed and at each change of embankment material. The actual settlement at the completion of the project will be calculated. This settlement will then be plotted on the cross sections. Additional common borrow or aggregate subbase course - gravel quantities will be calculated by computing the volume between the bottom of the proposed embankment as shown on the cross sections and the settled existing ground computed by holding the elevation of the existing ground at the toe of slope and lowering the existing ground under the embankment by the actual settlement measured at the settlement platforms. For purposes of this quantity calculation, the embankment core is the one contained within a 1H to 1V slope extending downward and outward from the edge of the proposed top of embankment.

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

SPECIAL PROVISION

SECTION 209

WICK DRAINS

(Prefabricated Vertical Drains)

209.01 Description.

This work shall consist of furnishing all necessary plant, labor, equipment, and materials, and performing all operations required to install prefabricated vertical drains (PVDs) in accordance with the details shown on the Plans and with the requirements outlined herein. The PVDs shall consist of a nominally 4-inch wide, band-shaped plastic core enclosed in a suitable jacket material and shall be spaced and arranged as shown on the Plans, or as otherwise directed by the Engineer. The work shall include installing PVDs through a 2 or 3 foot thick drainage layer (i.e., MaineDOT aggregate subbase course – gravel (type D)) and a variable thickness of MaineDOT aggregate subbase course – gravel (type D) placed after grubbing/muck excavation, to a minimum depth of 3 feet below the bottom of the marine clay stratum or to mandrel refusal below the marine clay, whichever is shallower. Pre-augering, spudding or other methods shall be performed as necessary to penetrate the drainage layer material, frozen ground, in-situ fill soils and debris, dense natural soils or other materials/obstructions present above the marine clay deposit.

PVDs shall be installed to the limits and spacing shown on the Plans. Site grubbing, excavation and removal of all surficial asphalt surfaces, topsoil and debris encountered within the footprint of the embankment area shall be completed prior to PVD installation. The drainage layer shall be placed and compacted to facilitate easy installation of the PVDs. After PVD installation, geotechnical instrumentation shall be installed and initialized prior to the placement and compaction of embankment fill per the requirements of Section 639.

The Contractor shall be responsible for preparing the site to allow safe access and operation of PVD equipment and efficient PVD installation.

The PVDs are intended to accelerate consolidation settlement of the marine clay and facilitate dissipation of excess pore water pressure caused by the placement of the embankment fill. Embankment fill shall not be placed until PVD installation is complete and geotechnical instrumentation has been installed and initialized per the requirements of Section 639.

MATERIALS

209.02a PVD – General

The PVD shall have a minimum 4-inch width and shall be of newly manufactured materials and consist of a polyethylene or polypropylene drainage core enclosed in or integrated with a geotextile jacket. The PVDs shall be band shaped with a width to thickness ratio between 10 and 50. The geotextile jacket shall be made of non-woven fabric of continuous filaments of 100 percent polypropylene or polyethylene. The jacket shall also allow free passage of pore water to the core without loss of soil material or piping (i.e., jacket shall have a range of openings to perform

similar to a graded filter). The core shall provide continuous vertical channels or studs on both sides of a central continuous backing strip. The PVDs shall be capable of resisting all bending, punching, compression and tensile forces imposed during installation and during the design life of the PVD without damage and so that the discharge capacity is not adversely affected. The PVD selected shall retain its permeability and be able to continue to transmit drainage along its entire length even when subjected to as much as 10 to 50 inches of vertical compression that is expected to occur in some areas of the site. The quality of the jacket and core materials shall be resistant for a period of 18 months to wet rot, mildew, bacterial action, insects, salts in solution in groundwater, acids, alkalis, and solvents and any other significant deleterious ingredients in the site groundwater. The jacket and core materials shall be environmentally safe.

Anchors shall be free of rust and sharp or jagged edges. The anchorage arrangement shall fit at the bottom of the mandrel or sleeve and shall permit the installation of the PVD to the required depth, and then shall anchor the PVD tip at that depth during mandrel withdrawal. The dimension of the anchor shall conform as closely as possible to the lateral dimension of the mandrel so as to minimize soil disturbance during PVD installation. The anchor system shall consist of either a bar or plate of the shortest practicable length or area that is necessary to secure the PVDs at the required bottom depth. Trial PVD installations per the requirements outlined herein shall be completed to demonstrate the effectiveness of the anchorage system.

A single type of assembled PVD shall be used on the project unless otherwise agreed to by the Engineer. The actual type of PVD installed will be at the option of the Contractor subject to the requirements specified herein and the review/comment of the Engineer.

209.02b PVD – Jacket

The jacket shall be commercially available, non-woven polypropylene filter fabric.

The jacket material shall not be subject to localized damage (e.g., punching through the filter by sand/gravel particles). The jacket material shall be sufficiently rigid to withstand lateral earth pressures to the maximum project installation depth so that the vertical flow capacity through the core channels will not be adversely affected.

The jacket material shall be sufficiently flexible to bend smoothly during induced consolidation settlement without structural breakage. The function of the drain shall not be affected due to the lateral movements which will likely accompany large settlements. The jacket material shall not undergo cracking and peeling during installation of the drain.

The geotextile jacket material shall conform to the following minimum specifications:

Test Item	Test Designation	Required Average Roll Value (Minimum)
Grab Tensile Strength	ASTM 4632	135 lbs.
Trapezoidal Tear	ASTM 4533	50 lbs.
Puncture Strength	ASTM 4833	38 lbs.
Elongation at Break	ASTM 4632	> 50%
Mullen Burst Strength	ASTM 3786	175 psi
Permittivity	ASTM 4491	0.45 sec-1
AOS	ASTM 4751	≤ US #70 Sieve

* The jacket material shall be tested in saturated and dry conditions. These requirements apply to the lower of the two tested conditions.

The jacket shall also have a minimum permeability of $1x10^{-5}$ cm/sec when tested according to ASTM D4491.

209.02c PVD – Core

The core shall be a continuous polyethylene or polypropylene plastic material fabricated to promote drainage along the long axis of the PVD. The core shall be in physical contact with the jacket but shall not be continuously bonded to the jacket.

The core material shall conform to the following specifications:

Item	Test Designation	Requirement (Minimum)
Tensile Strength	(Uniaxial	235 lbs.
Elongation at Break	extension)	10%

* The core material shall be tested in saturated and dry conditions. These requirements apply to the lower of the two tested conditions.

The mechanical properties (strength and modulus) of the assembled PVDs shall equal or exceed those specified for the component geotextile jacket and core.

Splicing of the jacket and core shall not directly coincide. Necessary splices should be adequately offset to provide structural and hydraulic continuity.

The assembled drain shall have a minimum discharge capacity of 1.3 gal./min. as determined by ASTM D4716.

The assembled drain shall have a minimum equivalent diameter of 2.65 in. using the following definition of equivalent diameter:

$$d_w = \frac{2(a+b)}{\pi}$$

d_w = equivalent diameter of a circular drain
a = drain thickness
b = drain width

PVD materials shall be labeled or tagged in such a manner that the information for sample identification and other quality control purposes can be read from the label. As a minimum, each roll shall be identified by the manufacturer including lot or control numbers, individual roll number, date of manufacture, and manufacturer and product identification of the component parts (jacket and core).

During shipment and storage, the PVD rolls shall be wrapped in heavy paper, burlap, plastic, or similar heavy-duty protective covering. The PVD rolls shall be protected from sunlight, mud, dirt, dust, debris, and other detrimental substances during shipping, unloading and at on-site storage locations.

All material that is damaged during shipping, unloading, storage, or handling and/or does not meet the minimum requirements as stated herein will be rejected by the Engineer and shall be immediately removed from the site by the Contractor. No payment shall be made for rejected material.

Material shall be stored on site under protective cover to minimize possible damage due to sunlight, general weather conditions, and other site conditions.

209.02d PVD - Drainage Layer

Drainage layer material shall consist of Aggregate Subbase Course – Gravel (Type D) in accordance with the requirements of Standard Specification Section 703 – Aggregates. The drainage layer material shall be placed and compacted to the limits shown on the Plans prior to PVD installation.

209.03 Contractor Requirements

The PVD manufacturer shall be a specialist in the manufacturing of PVDs and shall provide records of having successfully manufactured 1,500,000 linear feet of PVDs on a minimum of five projects within the past five years. Samples of PVD materials shall be submitted to the Engineer for review before delivery of the material to the project.

The PVD Contractor shall have a minimum of 5 years' experience with the installation of PVDs and shall have successfully completed at least five PVD installations within the last five years of similar size (at least 1,500,000 linear feet) and equal to or greater technical complexity in similar subsurface conditions.

The PVD Contractor shall provide at least one superintendent and one operator for the PVD

equipment with a minimum of 5 years' experience with the equipment and with PVD installation. The PVD Contractor shall provide detailed information on the training and experience of any operators with less than 5 years' experience for review by the Engineer. In no case shall any superintendent have less than 2 years' experience with the installation of PVDs.

209.04 Submittals

The PVD Contractor shall submit information providing the technical specification of the PVD product. The submittal shall include a description of the equipment and installation schedule and particular descriptions of mandrel dimensions and PVD anchorage methods. The PVD Contractor shall make all submittals not less than 30 calendar days prior to the start of PVD installation. Review of submittals by the Engineer will not relieve the Contractor of the responsibility to provide materials and equipment necessary to install PVDs in accordance with the Plans and specifications/special provisions. If, at any time, the Engineer considers that the method of installation does not produce a satisfactory PVD, the Contractor shall alter its method and/or equipment as necessary to provide PVDs that comply with the requirements of the Plans and specifications/special provisions. The PVD Contractor shall update and resubmit any and all portions of the submittal as changes occur during the course of the work.

The PVD Contractor shall submit proof of five or more projects of similar size and complexity on which they have successfully installed vertical PVDs within the last five years. The following information shall be presented for each project listed as a reference:

1. Project name, location, and start/completion date.
2. Surface and subsurface conditions.
3. The PVD installation equipment and techniques used to install.
4. The minimum, maximum and average rates of PVD installation.
5. Average length of PVD installed and total linear footage of PVD installed.
6. client name and address, and the name and telephone number of the representative of the consultant and owner for whom the work was performed and who can attest to successful completion of the work

The PVD Contractor shall submit written notice of intended installation schedule, by week, at least 30 days prior to the installation of any PVDs.

The PVD Contractor shall submit details of the sequence and method of installation. The submittal shall, at a minimum, provide the following specific information concerning the scheduled work:

1. Plan and narrative describing preparation of the site for PVD installation.
2. Size, type, weight, maximum pushing force, actual pushing force for anticipated installation equipment including rated energy of vibrating hammer (if used), track bearing pressure, and configuration of the installation rig.
3. Shop drawings showing PVD layout and identification numbers for each PVD that will be installed.
4. Dimensions, weight, material composition and length of the mandrel.
5. Details of PVD anchorages that are anticipated.
6. Means of determining the depth of the advancing PVD at any given time and the length

of the PVD installed at each location.

7. Detailed description of proposed installation procedures, including whether water is anticipated to be needed to install PVDs.
8. Estimated minimum, maximum, and average rates of PVD installation.
9. Detailed description of proposed methods for penetrating/removal of the drainage layer material, frozen ground, in-situ fill soils and debris, dense natural soils or other materials/obstructions above the marine clay (e.g., drilling, augering, coring, spudding, near-surface excavation).
10. Proposed plan and narrative for constructing a stable working-surface for installation of PVDs.
11. Manufacturer's literature on PVD material and installation.
12. Means of maintaining verticality/plumbness of mandrel during PVD installation.

The PVD Contractor shall submit PVD manufacturers certification that materials delivered to the site meet the minimum requirements specified herein, prior to delivery of PVDs. The submittal shall include the PVD supplier's certification that delivered material has been properly stored away from sunlight, moisture and dirt. In addition, pertinent tests shall be performed by the manufacturer's selected independent testing laboratory (having certification by an accreditation agency such as American Associate for Laboratory Accreditation relative to the required test methods) on samples representative of PVD material to be used for this project. In addition, one 12-inch length of PVD material shall be collected by the PVD Contractor and submitted to the Engineer for every 50,000 linear feet if installed material. The PVD Contractor shall record the date installed and the PVD roll number and cumulative linear footage from the start of work on the tag for each 12-inch increment.

A minimum of two weeks prior to the start of PVD installation, the PVD Contractor shall submit a sample of the PVD, PVD anchor and one sample of any proposed splices. Each sample shall be at least 5 feet long. Samples of spliced PVD shall be long enough to include the splice plus 2 feet of un-spliced PVD on both sides of the splice.

The PVD Contractor shall submit proposed installation record forms to be used to track production PVD installation. Information on the forms shall include, at a minimum, date and time of installation, rig number, PVD identification number, top elevation, installed length, length of pre-augering or spudding, description of methods used to remove/penetrate materials that hindered PVD installation, including depths materials were encountered, description of any other interruptions, daily quantify summary, total quantity summary, and other contract summary items. Interim reports shall be submitted weekly. A complete copy shall be submitted within two weeks after completion of PVD installation.

209.05 Project Conditions

Prior to bidding, the PVD Contractor shall visit and examine the work site and all conditions thereon and take into consideration all such conditions that may affect this work.

The PVD Contractor shall protect existing structures, underground utilities, overhead utilities, instrumentation, trees, buildings, utility poles, paved areas, and other construction from any possible or potential damage caused by PVD installation.

CONSTRUCTION REQUIREMENTS

209.06 PVD Installation

The Contractor shall provide equipment required for installation of nominal 4-inch wide PVDs. Equipment shall be of a type that will cause a minimum of disturbance to soil subgrades prior to and during PVD installation operation and shall maintain the mandrel in a plumb position. The mandrel or sleeve shall be straight and shall be sufficiently stiff to prevent wobble or deflection during PVD installation.

PVDs shall be installed using a mandrel or sleeve that shall be inserted (pushed) into the soil. The mandrel or sleeve shall protect the PVD material from tears, cuts, and abrasions during installation, and shall be retracted after each PVD is installed. To limit disturbance of the marine clay, the dimensions and cross-sectional area of the mandrel shall be the minimum required to provide stable penetration of the soil deposits. Where needed, use auger/core/drill/spud/etc. of a diameter not greater than 8 inches to pre-drill or spud through the drainage layer material, frozen ground, in-situ fill soils and debris, dense natural soils or other materials/obstructions encountered above or within the marine clay.

The mandrel or sleeve shall be provided with an anchor rod, plate, or similar arrangement at the bottom to permit the installation of the PVD and to anchor the PVD tip at the required depth before withdrawal of the mandrel. The dimensions of the anchor shall conform as closely as possible to the dimensions of the mandrel to minimize disturbance of the marine clay. The Engineer shall determine the acceptability of the anchorage system and installation procedure. The selection of anchoring system is the sole responsibility of the PVD Contractor, but its choice shall be made such as to disturb the least amount of surface area of soil necessary while securing the PVD in the ground. Changes to the anchoring system, if recommended by the Engineer, shall be made by the PVD Contractor at no additional cost to the Authority.

Prior to the installation of the PVDs, the PVD Contractor shall demonstrate that their proposed equipment, methods, and materials produce a satisfactory PVD installation in accordance with the requirements stated herein. The PVD Contractor shall complete a minimum of ten trial PVD installations at specific production location(s) designated by the Engineer. During the trial installations, the PVD Contractor shall demonstrate the intended splicing procedure at least twice by purposely cutting the band PVD and changing out a roll and reattaching the PVD consistent with splicing requirements specified herein. The Engineer may choose trial areas to determine the need for pre-augering prior to production installation. Additional trial PVDs may be required by the Engineer if significant changes in subsurface conditions or installation are noted. The PVD Contractor shall install all trial PVDs in the presence of the Engineer who will observe the installations and determine the PVD Contractor's ability to install the PVDs to the required depths, while maintaining verticality tolerances and with proper splicing procedures. Upon completion of the trial PVD installations, the PVD Contractor and Engineer shall agree upon the proposed equipment, methods, and materials before installing production PVDs.

Review by the Engineer of the method or equipment used to install trial PVDs shall not constitute acceptance of the method for the remainder of the project. If, at any time during production PVD installations, the Engineer believes that the method of installation does not produce satisfactory PVDs, the PVD Contractor shall alter its method and/or modify or change equipment as necessary to comply with requirements as stated herein, at no additional cost to the

Authority.

The PVD Contractor shall clear and grub the site within the footprint of the embankments as shown in the Plans. The PVD Contractor shall provide a drainage layer in the PVD installation area as shown on the Plans and specified herein.

PVDs shall be laid by the Contractor out using surveying methods, numbered, and flagged by the Contractor, relative to a baseline and benchmark established by the Contractor. The Contractor shall take all reasonable precautions to preserve the flags and is responsible for any necessary re-flagging. The as-installed location of the PVDs shall not vary by more than 3 inches from the plan locations designated on the PVD Contractor's shop drawing submittal. The spacing of installed PVDs (in plan) shall be no greater than the dimensions shown on the Plans, as measured at ground surface. If needed, additional PVDs shall be installed in areas where the spacing is greater than the spacing shown on the Plans, to the satisfaction of the Engineer, at no additional cost to the Authority.

PVDs shall be installed from a working surface prepared by the Contractor to the depth required to vertically penetrate the marine clay by at least 3 feet into the underlying granular soil deposit, or to such elevation as directed by the Engineer. The Engineer may vary the depths, spacing, or the number of PVDs to be installed, and may revise the plan limits for this work as necessary.

At each PVD location, a minimum 12-inch length of each PVD shall be left protruding above the ground surface (drainage layer) and cut off neatly at its upper end.

During PVD installation, the PVD Contractor shall provide the Engineer with suitable means of determining the depth of the PVD installed at each location. Footage shall be clearly marked and numbered on the mandrel in an easily visible location that can be read from a safe distance.

PVDs shall be installed using static methods. PVDs that cannot be installed to the design penetration elevations using only static methods shall be advanced using vibratory methods within the following restrictions:

1. A vibratory hammer shall not be used except in cases where design penetration cannot be achieved by using the full static force available to the mandrel, but only with the acceptance of the Engineer.
2. Debris/material encountered above the marine clay deposit shall not be cause for use of a vibratory hammer for the installation of PVDs.

PVDs that are damaged or improperly installed will be rejected by the Engineer and shall be abandoned in place. The PVD Contractor shall install additional PVDs to replace damaged PVDs or those out of specification tolerances as directed by the Engineer, at no additional cost to the Authority.

Where PVDs are to be installed through frozen ground or through hard and dense materials above or within the marine clay soils, the PVD Contractor shall pre-auger, core, drill, or spud through these materials prior to installation of the PVD, as required by the site conditions, but only

to the minimum depth needed to penetrate these materials. All predrilled locations shall be backfilled with either cuttings from the pre-augered hole or sand to the satisfaction of the Engineer.

Equipment for installing PVDs shall be plumbed in both directions prior to installing each PVD and shall not deviate from the vertical by more than 3 inches in 10 feet during installation of any PVD at any time. The PVD Contractor shall provide means for measuring/monitoring plumbness of the mandrel at all times during PVD installation.

Installation techniques requiring driving or jetting of PVDs will not be permitted. The use of water may be allowed if the Contractor is unable to advance PVDs to minimum depths as outlined herein and/or if needed to facilitate anchoring of the PVDs. Water, if needed, shall be introduced into the hole created by the mandrel during PVD installation to counteract hydrostatic uplift forces acting on the PVD anchor at depth. Use of water, if needed to install anchors to the depths required herein shall be conducted by the PVD Contractor at no additional cost to the Authority.

PVD installation shall be performed without any damage to the PVD during advancement or retraction of the mandrel. In no case will alternate raising and lowering of the mandrel during advancement be permitted. Raising of the mandrel will only be permitted after completion of a PVD installation, or upon abandonment from an attempted location.

Where materials are found within the marine clay that cannot be penetrated using normal and accepted procedures (e.g., drilling, augering, coring, spudding), the PVD Contractor shall complete the PVD from the elevation of the materials to the working surface and immediately notify the Engineer.

The PVD Contractor shall implement precautions necessary for protection of any existing utilities, structures, or other existing infrastructure.

The PVD Contractor shall install all production PVDs in the presence of the Engineer. PVDs that are installed to the required penetration into the granular soil deposit below the marine clay, and which are not in violation of any restriction listed in this special provision, will be considered acceptable.

The PVD Contractor shall coordinate the location of the PVDs with the location of the settlement platforms, vibrating wire piezometers and inclinometers shown on the Plans.

The PVD Contractor shall be responsible for penetrating the soils present at the site as necessary to satisfactorily install the PVDs. Satisfactory installation may require removal or penetration of debris/materials that hinder PVD installation. As and if needed, the PVD Contractor may use augering, spudding, coring, or other drilling methods to remove/penetrate debris/materials that hinder PVD installation. The Contractor may use excavation methods to remove near-surface debris/materials encountered. Excavation into the naturally-deposited marine clay soils will not be allowed. Each hole made by pre-augering, coring, other drilling method, spudding shall be backfilled with either the auger/drill cuttings or with sand.

Splicing of PVD material shall be done in a workmanlike manner by stapling to provide structural and hydraulic continuity and a continuous smooth connection of the jacket of the PVD. Other means of splicing may be proposed by the PVD Contractor but may not be used without the

review of the Engineer. The jacket and core shall be overlapped a minimum of 6-inches at any splice. A maximum of one splice per installed PVD will be permitted.

209.07 Method of Measurement

PVDs will be measured by the linear foot installed. The length of PVDs to be paid for shall be the distance the installation mandrel tip penetrates below the working grade. All measurements shall be rounded to the nearest whole foot.

PVDs placed in excess of the length as specified herein will not be paid for unless the additional length was authorized by the Engineer or the Engineer's Authorized Representative prior to or during the PVD installation.

209.08 Basis of Payment

Payment for PVDs shall be made at the contract unit price per linear foot, which price shall be full compensation for the cost of furnishing the full length of PVD material, installing the PVDs, altering of the equipment and methods of installation in order to produce the required end result in accordance with the Plans and specifications/special provisions, and shall also include the cost of furnishing all tools, materials, labor, equipment and all other costs necessary to complete the required work specified herein.

No direct payment shall be made for unacceptable PVDs, or for any delays or expenses incurred through changes necessitated by improper or unacceptable material or equipment.

No direct payment will be made for mobilization, demobilization, obstruction clearance, or constructing any work platform(s). The cost of such shall be included in the unit price bid for PVDs.

Pay Item	Pay Unit
209.29 Prefabricated Vertical Drains	Linear Foot

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 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.

Section 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	45	8.0	20,000	15,000
70E-34	45	6.3	20,000	15,000

Section 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.

Section 401.04 Temperature Requirements

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.

Section 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 40°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 and auxiliary lanes. The atmospheric temperature for all courses on bridge decks shall be 50°F or higher.

Section 401.08 Hauling Equipment Trucks for Hauling HMA

Add the following paragraph:

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.

Section 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.

Section 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.

Section 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. 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.

Section 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

Section 401.17 Joints

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.

Section 401.18 Quality Control

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.

Section 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 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 1 and 2 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.

SPECIAL PROVISION

SECTION 403

HOT MIX ASPHALT PAVEMENT

Course	HMA Grading	Item Number	Total Thickness	No. of Layers	Complimentary Notes
Mainline Culvert Trench					
Wearing	**12.5 mm**	**403.208**	**1.5”**	**1**	**C,I**
Intermediate	**12.5 mm**	**403.213**	**1.5”**	**1**	**C,I**
Base	**19.0 mm**	**403.207**	**7”**	**3**	**C,I**
Temporary Ramps					
Wearing	**12.5 mm**	**403.208**	**2”**	**1**	**C,I**
Base	**12.5 mm**	**403.207**	**2”**	**1**	**C,I**
Shim	**4.75 mm**	**403.212**	**½”**	**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 0.1%.

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 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 his 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 his 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 - Applied.

409.09 Basis of Payment

The following pay items are added:

Pay Item		Pay Unit
409.15	Bituminous Tack Coat RS-1 or RS-1h– 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 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 concrete 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 concrete barrier item.

SPECIAL PROVISION

SECTION 526

CONCRETE BARRIER

(Temporary Concrete Barrier Type I - Supplied by Authority)

526.01 Description

The following paragraphs are added:

This work shall consist of loading, transporting, setting, resetting, removing, transporting and stacking Temporary Concrete Barrier Type I – Supplied by Authority. The barrier shall have attachments allowing individual sections to be connected into a continuous barrier. The work also includes maintaining and resetting approximately 270 linear feet of existing temporary concrete barrier in use at the project site.

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

Concrete barriers supplied by Authority shall be available at the following location(s):

Maintenance Area	Linear Feet of Barrier
Crosby Maintenance Area Mile 45.8 Southbound	3000

Upon substantial completion of work, the Contractor shall remove and transport the barrier back to its maintenance area of origin, unless otherwise noted in the plans. All barrier to be returned shall be returned, sorted and stacked according to type in locations directed by the project Resident or maintenance area foreman.

526.02 Materials

The following paragraphs are added:

e. 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.

526.021 Acceptance

The Resident shall have the authority to accept or reject all Temporary Concrete Barrier Type I – Supplied by Authority used on the Project that does not meet the requirements of this specification

526.03 Construction Requirements

The following paragraphs are added:

The Contractor shall notify the Resident prior to the scheduled pick-up and delivery of concrete barrier. No barrier shall be removed from or stacked at the Turnpike Maintenance Area without approval of the Resident.

The Contractor shall move and place barrier-utilizing methods that will not damage the barrier. Barrier that is damaged by the Contractor by failing to use proper methods shall be replaced by the Contractor at no additional cost to the Maine Turnpike Authority.

Concrete barrier supplied by the Authority consists of several different styles. Not all barriers may be compatible. The Contractor shall utilize caution when setting barrier to use identical barrier types as adjacent barrier. Non-compatible barrier that cannot be attached together shall be overlapped by a minimum of 10 feet with the blunt end on the non-traffic side of the barrier. This work will not be measured separately for payment, but shall be incidental to the concrete barrier.

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:

1. 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.
2. Barrier shall be dragged away from the travel lane to at least a 30-degree angle by the use of a cable.
3. 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:

4. One on top of each barrier.
5. One on the traffic side of every barrier used in a taper.
6. One on the traffic side of every other barrier at regularly spaced intervals and locations.
7. Delineators shall be installed on both sides of the barrier if barrier is used to separate opposing traffic.
8. Delineators shall be physically adhered so as to withstand the force of throw from a snow plow.
9. 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.
10. 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:

Temporary Concrete Barrier Type I – Supplied by Authority shall be measured for payment by the lump sum.

The loading, transporting, setting, resetting, removing, transporting, sorting and stacking of the barrier, the furnishing, installation and maintenance of the barrier delineators, and furnishing and installing connector pins will not be measured separately for payment, but shall be incidental to the cost of the Barrier. Temporary storage of Concrete Barrier between construction phases, if required, will not be measured separately for payment, but shall be incidental to the cost of the Barrier. All equipment required to load, unload, transport and stack Concrete Barrier shall be supplied by the Contractor.

Any Barrier lost or damaged by the Contractor shall be replaced by the Contractor at no additional cost to the Authority.

526.05 Basis of Payment

The fifth paragraph is deleted and not replaced.

The following paragraphs are added:

Temporary Concrete Barrier Type I – Supplied by Authority will be paid for at the Contract lump sum price, complete in place. Such payment shall be full compensation for loading, transporting, setting, resetting, temporary storage, removing, transporting and stacking at the area designated, furnishing all materials, and all other incidentals necessary to complete the work. Temporary Concrete Barrier Type I – Supplied by Authority and all connecting pins shall remain the property of the Authority, and shall be returned to the Turnpike Maintenance Area as designated in Subsection 526.01.

Payment of Concrete Barrier shall be based on a percentage of the work accomplished during that pay period.

Payment will be made under:

Pay Item		Pay Unit
526.306	Temporary Concrete Barrier, Type I – Supplied by Authority	Lump Sum

SPECIAL PROVISION

SECTION 527

ENERGY ABSORBING UNIT

(Work Zone Crash Cushion)

527.01 Description

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

The Contractor shall furnish and install 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.

In some cases, work zone crash cushions will remain in place at the end of the contract and become the property of the Authority. At these locations the Contractor shall furnish new work zone crash cushions with "MTA" painted on them and shall be in a like new condition at the end of the contract.

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:

Only work zone crash cushions meeting the NCHRP Report 350 TL-3 crash test requirements may be used on the turnpike and local roadways with posted speeds of 45 MPH or greater. Work zone crash cushions meeting the NCHRP Report 350 TL-2 crash test requirements may be used 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 NCHRP Report 350 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 – Left In Place will be measured by the Unit complete in place and accepted.

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.

527.05 Basis of Payment

Work Zone Crash Cushions – Left In Place will be paid for at the Contract unit price for each Unit, which price shall be full compensation for furnishing, placing and leaving in place the Work Zone Crash Cushion, including all incidentals and for resetting as many times as required.

Payment will be made under:

Pay Item		Pay Unit
527.341	Work Zone Crash Cushions – TL-3	Unit
527.3411	Work Zone Crash Cushions – TL-3 Left In Place	Unit
527.342	Work Zone Crash Cushions – TL-2	Unit
527.3421	Work Zone Crash Cushions – TL-2 Left In Place	Unit

SPECIAL PROVISION

SECTION 602

PIPE LINING

(Flowable Concrete Fill)

602.01 Description

This work shall consist of providing and placing flowable concrete fill at the locations designated on the Plans.

602.02 Materials

Materials shall conform to the requirements specified in the following Subsections of Division 700 — Materials:

▪ Portland Cement	701.01
▪ Water	701.02
▪ Air Entraining Admixtures	701.03
▪ Water Reducing Admixtures	701.04
▪ Fly Ash	701.10
▪ Fine Aggregate	703.01
▪ Accelerating Admixtures	AASHTO M-194 Type "C"

602.03 Composition and Proportioning

Flowable concrete fill shall be composed of a homogeneous mixture of Portland Cement and/or pozzolans, fine aggregate, water, and chemical admixtures proportioned according to these Specifications.

The flowable concrete fill shall be proportioned to produce a 28 day compressive strength of 110-500 psi.

The water cement ratio for flowable concrete fill shall not be high enough to cause segregation of the mix.

Air content of five to 15 percent is the target. Higher air contents may be acceptable but will increase set time. All flowable concrete fill shall be air entrained by the addition of an air entraining admixture or other chemical admixtures.

At least 30 days prior to the first placement, a flowable concrete fill mix design shall be submitted by the Contractor to the Resident for approval. No flowable concrete fill shall be placed on the Project until the mix design is approved by the Resident. At a minimum, the mix design submitted by the Contractor shall include the following:

A. Target water cement ratio
B. Target strength

C. Target air content

602.04 Quality Control

Process control measurements of air content, mix temperature, and slump shall be performed on the portion or portions of flowable concrete fill batches delivered to the site. At least one (1) set of measurements for air content, temperature, and slump of flowable concrete fill mix shall be performed per placement or per day, whichever is less frequent. Test cylinders will not be required.

Air content shall be measured following the requirements of AASHTO T152 utilizing Type B equipment.

Slump shall be measured by Modified Slump Test as described below.

Apparatus:

Scoop, measuring tape, flat edge, 3 in. x 6 in. cylinder mold open at both ends, and a flat non-absorbent surface.

Procedure:

1. Set cylinder upright on flat non-absorbent surface.
2. Scoop representative sample of flowable concrete fill.
3. Fill the cylinder, with the sample in one lift without tamping. Strike-off the top with the flat edge to form a level surface.
4. Clear any residue from around the bottom of the cylinder.
5. During a count of three seconds, lift the cylinder straight up allowing the sample to spread on the flat surface.
6. Measure the spread diameter to the nearest 1/2 inch. A spread of nine to 14 inches is considered flowable.

602.05 Batching

Measuring and batching of materials shall be performed at an approved batching plant, either commercial or otherwise.

602.06 Mixing and Delivery

The Contractor shall provide a Certificate of Compliance as described in Standard Specification Section 502, Structural Concrete, Subsection 502.0501, Quality Control METHOD C, for each truckload of flowable concrete fill.

602.07 Cold Weather Placement

The following amended requirements of Standard Specification Section 502, Structural Concrete, Subsection 502.08, Cold Weather Concrete, will apply.

The Cold Weather Temperature Table does not apply to flowable concrete fill. The minimum concrete temperature as placed shall be 40°F. No housing framework or heating will be required when placed under approved cold weather conditions.

602.08 Forms and Containment Berms

When necessary to contain flowable concrete fill within a defined area, berms shall be constructed of compacted granular material.

602.09 Placing Flowable Concrete Fill

Flowable concrete fill shall not be placed until forms and/or containment berms have been checked and approved. Flowable concrete fill shall not be placed under water. The method and sequence of placing flowable concrete fill shall be approved by the Resident before any flowable concrete fill is placed.

All flowable concrete fill shall be placed before it has taken its initial set. Flowable concrete fill shall be placed in such a manner as to avoid separation and segregation of the mix. Consolidation, tamping, and vibration is not required or allowed.

Flowable concrete fill shall be discharged directly from the truck into the space to be filled. The drop height of the flowable concrete fill shall be as low as practicable. Flowable concrete fill shall not flow down the vertical face of a trench causing erosion of the trench face. Finishing and curing of flowable concrete fill is not required.

Flowable concrete fill placed will not be opened to traffic or covered with structural concrete or pavement for a minimum of 24-hours.

602.10 Method of Measurement

Flowable Concrete Fill satisfactorily placed and accepted will be measured by the cubic yard, in accordance with the pay limits established, if such limits have been established. If the Contractor elects to omit forms or berms, then any excavation or Flowable Concrete Fill placed beyond the pay limits as indicated on the Plans will not be paid for, but shall be at the Contractor's own expense.

602.11 Basis of Payment

The accepted work done under Flowable Concrete Fill will be paid for at the Contract unit price per cubic yard. Payment will be full compensation for furnishing and placing Flowable Concrete Fill, including all forms, berms, granular material, pumping, dewatering and necessary incidentals.

Payment will be made under:

Pay Item		Pay Unit
602.30	Flowable Concrete Fill	Cubic Yard

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

604.02 Materials

The following sentences are added:

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:

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.

SPECIAL PROVISION

SECTION 604

MANHOLES, INLETS, AND CATCH BASINS

(60” Catch Basin Type B1)

604.06 Basis of Payment

Payment will be made under:

Pay Item		Pay Unit
604.093	60” Catch Basin Type B1	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Bridge Transition - Type II - Modified)

606.01 Description

The following sentence is added:

This work shall consist of furnishing and installing double faced Bridge Transition – Type II attachments to temporary concrete barrier as shown in the Contract Documents.

The following Subsection is added:

606.071 Guardrail Attachments at Bridges

Bridge Transition - Type II - Modified shall be used at median temporary concrete barrier locations.

606.08 Method of Measurement

The following sentence is added:

Bridge Transition- Type II - Modified will be measured by each unit of the type specified, installed and accepted.

606.09 Basis of Payment

The following paragraphs are added:

Bridge Transition - Type II - Modified, 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, the following: furnishing and installing guardrail, two terminal connectors, including terminal connector anchorage and all other detailed accessories; drilling holes for anchorage in to concrete median barrier; furnishing and installing all required posts, rails, offset brackets, back-up plates, nuts, bolts, washers, and all other items necessary to make for a complete installation as shown on the Plans or as approved by the Resident.

Payment will be made under:

Pay Item		Pay Unit
606.1724	Bridge Transition - Type II - Modified	Each

SPECIAL PROVISION

SECTION 606

GUARDRAIL

(Terminal End - Anchored End)
(Terminal End - Anchored End, Thrie Beam)

606.01 Description

The following sentence is added:

This work shall consist of furnishing and installing Terminal End – Anchored End, and Terminal End, Anchored End – Thrie Beam end treatments in accordance with these Specifications, the AASHTO-AGC-ARBTA Joint Committee Task Force 13 Report: A Guide to Standardized Highway Barrier Hardware, dated May 1995; 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 of 2 of Drawing SEW02a – Trailing End Terminal – Foundation Tube Option in the Task Force 13 Report noted above and/or as noted in the Contract Documents.

The following Subsection is added:

606.042 Terminal End - Anchored End

Installation of the Terminal End – Anchored End shall be in strict accordance with the AASHTO-AGC-ARBTA Joint Committee Task Force 13 Report and the Details on Sheet No. 1 of 2 of Drawing SEW02a – Trailing End Terminal – Foundation Tube Option.

Height of installation of Terminal End – Anchored End units shall be 27.5-inches to the top of rail, transitioning to the standard height of 30-inches over a 25-foot length of Type 3d rail located immediately after the last post of the Anchored End unit.

Height of installation of Terminal End – Anchored End, Thrie Beam units shall be 32.0-inches to the top of rail, transitioning to the standard height of 30-inches over a 25-foot length of Type 3d rail located immediately after the last post of the Thrie Beam Anchored End unit.

The reveal on the soil tube for the Anchored End units shall not exceed 3.5-inches. If site grading is be required to achieve the required rail height and soil tube reveal height, then such work will be incidental to the installation of the Anchored End units

606.08 Method of Measurement

The second paragraph is amended by the addition of: "Terminal End - Anchored End," after the words "NCHRP 350 end treatments,".

606.09 Basis of Payment

The second paragraph is amended by the addition of: "Terminal End - Anchored End," after the words "NCHRP 350 end treatments,".

Payment will be made under:

Pay Item		Pay Unit
606.278	Terminal End - Anchored End	Each
606.279	Terminal End - Anchored End, Thrie Beam	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 at the Crosby Maintenance Facility at Mile Marker 45.8 Southbound. 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 associates 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.

Guardrail materials may be temporarily stockpiled at the Crosby Maintenance Facility at MM 45.8 Southbound. All stockpiled materials not reused shall be disposed of off site by the contractor prior to completion of contract.

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 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 his 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 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

(Quazite Junction Box (36x24))
(Quazite Junction Box (18x11))

626.02 General

The following paragraph is added:

Junction boxes for the electrical and communication conduit associated with the toll equipment and intelligent transportations systems shall be polymer concrete as manufactured by QUAZITE® a division of Hubbell Power Systems. The boxes shall be 36" x 24" and 21" deep. The words ELECTRICAL, LIGHTING, TRAFFIC, or COMMUNICATION shall be stamped on the cover as noted in the Plans or directed by the Resident. The boxes shall have a 15,000 lb. load rating. All existing QUAZITE® Junction Boxes in useable condition shall be removed and relocated 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. 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 an 15,000 lb. load rating.

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.

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

626.05 Basis of Payment

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

(Adjust Existing Junction Box to Grade)

626.02 General

The following paragraph is added:

The work will include adjusting all junction box located within the fill areas.

If the adjustment to grade is greater than twelve inches, an additional similar sized junction box will be used as an extension of the existing junction box. Existing conduit shall be extended as necessary to accommodate the adjustment to grade of the existing junction boxes, and split conduit may be required.

626.04 Method of Measurement

The following sentence is added:

Adjust Existing Junction Box to Grade shall be measured by each unit in place and accepted.

626.05 Basis of Payment

Payment for Adjust Existing Junction Box to Grade will be made by each unit in place and accepted and shall include any conduit extensions. Payment for additional junction boxes will be made per item 626.121 or 626.122, as determined by the resident engineer.

Payment will be made under:

Pay Item		Pay Unit
626.131	Adjust Existing Junction Box to Grade	Each

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, SWLL, SYLL) 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.

Temporary raised pavement markers used for solid lines shall be spaced 10’-0” center to center. Temporary raised pavement markers used for broken white lane lines shall be spaced 5’-0” center to center followed by a 30’-0” space (3 per 40 ft).

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 634

HIGHWAY LIGHTING

(Remove and Stack Light Standard)

634.01 Description

This work shall consist of removing existing light standards, luminaires, foundations, and any breakaway devices and transporting them to the Crosby Maintenance Facility.

634.051 Removing Light Standards

Before removing light standards, the luminaires shall be removed from the light standard and stacked.

The existing light standards, foundations, break away devices and luminaire shall be removed and transported for storage to the MTA Sign Shop.

634.092 Method of Measurement

Removal and Stack Light Standards will be measured by the single unit, complete in place and accepted.

634.093 Basis of Payment

The accepted quantity of Remove and Stack Light Standards will be paid at the Contract unit price for each of units that are removed and stacked. Payment shall be full compensation for the removal, transportation and stacking/storage of the light standard, breakaway device, and all incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
634.2083	Remove and Stack Light Standard	Each

SPECIAL PROVISIONS

SECTION 634

HIGHWAY LIGHTING

(Temporary Highway Light)

634.01 Description

The following paragraph is added:

This work shall consist of providing and installing (or reinstalling) forty-foot wooden utility poles, AWG #4 Aluminum Quadruplex overhead service wire (bare neutral/messenger), bracket arms (Provided by the MTA installed by contractor), LED luminaires (reinstalled), and all incidentals needed for providing temporary highway lights in accordance with these Specifications and at locations as shown on the Plans.

Temporary Highway Lighting will be powered from the existing highway lighting circuit.

Disruption to existing ramp lighting is permitted during daylight hours.

634.02 General

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.

634.092 Method of Measurement

Temporary Highway Light shall be measured for payment by the single unit, complete in place and accepted.

634.093 Basis of Payment

The accepted Temporary Highway Light will be paid for at the contract unit price for each Temporary Highway Light installed and accepted. Payment shall be full compensation for furnishing, installing and erecting: poles, wiring, bracket arms, luminaires and all materials, labor, equipment and tools necessary to provide a fully operational Temporary Highway Light system. Temporary Highway Light and associated features shall remain operational and in place after completion of contract; all material shall become property of the MTA.

Payment will be made under:

Pay Item		Pay Unit
634.221	Temporary Highway Light	Each

SPECIAL PROVISION

SECTION 639

INSTRUMENTATION

(Instrumentation (Geotechnical))

639.01 Description

This work shall consist of installing instrumentation to facilitate monitoring the performance of the ramp and bridge approach embankments. This work includes but may not be limited to the following: 1) site preparation; 2) allowing time for installation of vibrating wire piezometers and inclinometers by the Engineer; 3) furnishing, fabricating, installing, maintaining and protecting settlement platforms and protective barriers; 4) extending settlement platforms/riser piping up through the embankment fill as the fill is placed; 5) pulling piezometer leads through settlement platform extensions when settlement platforms are extended up through the embankment fill; 6) allowing time for the Engineer to adjust and/or test the instrumentation to confirm that it is functioning properly and; 7) providing safe access and allowing time for the Engineer to survey the settlement platforms and read the inclinometers and piezometers during and throughout construction. The Contractor shall cooperate with the Engineer at all times throughout construction as necessary for the instrumentation to be successfully installed, tested, initialized and monitored.

MATERIALS

All materials are to be provided by the Contractor unless specifically stated that an item will be provided by the Authority, or the Engineer.

639.02 Settlement Platforms and Protective Barriers

Settlement platforms shall consist of five-foot-long sections of 2-inch diameter black iron pipe, threaded at both ends (one pipe coupling for each length), and attached at the bottom to a 2-foot by 2-foot by 1.5-inch thick pressure-treated plywood base using a black iron floor flange, as shown on the Plans. A black iron coupling shall be provided at the top of each settlement platform. Settlement platforms which will penetrate through the embankment fill shall be shielded from drag loads caused by compression of the embankment fill by a 4-inch diameter Schedule 40 PVC pipe placed around the black iron settlement platform pipe as shown on the Plans. Protective barriers shall be fabricated from sound lumber or temporary concrete barrier, as shown on the Plans.

639.03 Vibrating Wire Piezometers and Inclinometers

Piezometers will be furnished and installed by the Engineer at the locations shown on the Plans after wick drain installation is completed and prior to the start of embankment fill placement. Piezometer leads (wires) extending up to pre-construction site grades will be provided by the

Engineer. The Contractor shall pull piezometer leads through settlement platform/riser pipe extensions, as needed, during embankment fill placement.

Inclinometers will be furnished and installed by the Engineer at locations shown on the plans. The Contractor shall install protective barriers around the inclinometers

The Contractor shall be advised that the Engineer plans to make survey measurements of each settlement platform and piezometer and inclinometer readings at the following times: 1) after installation, prior to placement of any fill in the area; 2) at least daily during placement of fill and at least weekly during other periods; 3) any time that the settlement platforms, piezometers or inclinometers are bumped, damaged, vandalized or otherwise altered; and 4) at any other times deemed necessary by the Engineer. The Contractor shall coordinate their schedule accordingly.

CONSTRUCTION REQUIREMENTS

It is of paramount importance on this site that the Contractor protect all instrumentation from damage. Due to the nature of the site and proposed construction, instrumentation may be located within or close to the limits of work. Such protective measures may consist of, but are not limited to, the placement of protective barriers around the installations. Caution markings shall be clearly visible from construction equipment.

Prior to the start of site work activities, the Contractor shall submit a plan, at the request of the Resident, detailing the measures to be employed to mark and protect instrumentation. The plan shall identify by list and location sketch all instrumentation located within the limits of work. The Contractor shall identify the individual(s) on the Contractor's staff permanently assigned to the job, who is/are competent and may act on behalf of the Contractor, who will coordinate with an instrumentation contractor during any concurrent instrumentation installation and/or monitoring work.

The Contractor shall assist the Owner-designated subconsultant as necessary during geotechnical instrument installation-related activities, as requested by the Resident. This may include, but may not be limited to providing access and/or preparing work pads for drill rigs, shallow trenching and backfill for signal cable runs, etc.

639.04 Settlement Platforms and Protective Barriers

Settlement platforms and protective barriers shall be furnished, fabricated and installed by the Contractor at the locations shown on the Plans. The Contractor shall provide all labor, equipment and materials necessary to extend the settlement platforms up through the embankment fill as the fill is placed.

The Contractor shall place a 4-inch diameter Schedule 40 PVC pipe around the settlement platform black iron pipe during construction of the preload embankment to protect it against drag forces due to compression of the embankment fill. The PVC pipe shall extend from the top of the plywood base to a level 6 inches below the top of the black iron pipe. The top of the black iron pipe shall always extend above the top of the PVC pipe so that survey measurements can be made by the Engineer at any time.

The Contractor shall construct and maintain barriers around each of the settlement platforms as shown on the Plans to provide protection to the settlement platforms during construction.

The Contractor shall be advised that the top of the settlement platforms will be surveyed by the Engineer at the following times: 1) after initial placement of the settlement platforms; 2) before and after additional sections of riser pipe are added to raise the settlement platforms; 3) any time that the settlement platforms are disturbed/impacted, damaged, vandalized or otherwise altered; 4) at least daily during placement of fill and at least weekly during other periods; and 5) at any other times deemed necessary by the Engineer. The Contractor shall cooperate with and provide safe access to the Engineer at all times to allow these measurements to be made. The Contractor shall coordinate their scheduling accordingly and shall not continue work until the Engineer has collected measurements at these times.

639.05 Inclinometers and Protective Barriers

Inclinometer casings will be furnished and installed by the Engineer at the locations shown on the Plans.

The Engineer will install locking protective casings over the top of the inclinometer casing upon completion. The locking protective casings will be grouted into place a minimum of 12 to 18 inches below pre-construction site grades.

The Contractor shall construct and maintain the same type of barrier as shown on the Plans for settlement platforms around each inclinometer to provide protection to the inclinometers during and after construction.

The Contractor shall be advised that the Engineer plans to make inclinometer readings at the following times: 1) after installation of inclinometers, prior to placement of any fill in the area; 2) at least daily during placement of fill and at least weekly during other periods; 3) any time that the inclinometers are bumped, damaged, vandalized or otherwise altered; and 4) at any other times deemed necessary by the Engineer. The Contractor shall cooperate with and provide safe access to the Engineer at all times to allow these measurements to be made. The Contractor shall coordinate their schedule accordingly and shall not continue work until the Engineer has collected measurements at these times.

639.06 Fill Placement and Compaction Near Instruments

Fill placement and compaction within 3 feet of riser pipes or instruments (in plan) shall be accomplished by hand in a manner approved by the Engineer. Compaction shall be accomplished using approved hand-operated power compactors.

639.07 Monitoring of Instrumentation

The Contractor shall be advised that the Engineer plans to make instrument readings at the at the times noted herein. The Contractor shall cooperate with and provide safe access to the Engineer at all times to allow these measurements to be made. The Contractor shall coordinate their

schedule accordingly and shall not continue work until the Engineer has collected measurements at these times.

It is brought to the Contractor's attention that the Engineer will monitor the instrumentation devices prior to, during and after embankment construction to evaluate embankment stability, settlement, and strength gain of the marine clay soils underlying the embankments. Therefore, the Contractor shall take all necessary precautions to prevent damage, disturbance or movement of any monitoring device (i.e., instrument), once installed. The Contractor shall immediately notify the Resident of any instrument damage, disturbance or movement. The Contractor is required to halt all work within a 50-foot radius of a damaged installation, and immediately repair, reset, resurvey, or replace damaged, disturbed or moved monitoring devices as directed by the Engineer. All repair work shall be coordinated with and approved by the Resident and shall also be subject to approval by the Engineer. In the event the Engineer reinstalls monitoring devices (instrumentation) destroyed or damaged by the Contractor, the cost of such reinstallations will be charged against the Contractor and will be deducted from payments.

The Engineer shall also perform additional monitoring of the proposed CMP poles along the proposed northbound On Ramp.

It is brought to the Contractor's attention that if data obtained from the monitoring devices (instrumentation) indicate insufficient strength gain within the marine clay soils, or indicate signs of embankment instability, construction may be halted by the Engineer, and placement of additional embankment material suspended. The Engineer may at such time request additional corrective actions, as necessary.

Observation and measurement of all monitoring devices will be accomplished by the Engineer at intervals deemed necessary. The Contractor shall in no way interfere with or delay such activities.

639.08 Anticipated Surcharge Durations

Completion of the surcharge period will be determined by the Engineer based on the collection and evaluation of instrumentation data and in-situ undrained shear strength measurements within the marine clay deposit. The surcharge duration for embankments built in one stage is estimated to be approximately 12 months. The surcharge duration for embankments built in two stages is estimated to be approximately 9 months for stage 1 and an additional 9 months for stage 2. Surcharge durations are measured from the time that fill placement up to the elevations shown on the Plans has been completed. Commencement of stage 2 fill placement or the removal of surcharge fill shall not begin until directed by the Engineer. The Contractor shall consider the anticipated durations stated herein in the development of their bid and in the sequencing and scheduling the work.

609.09 Sequence and Estimated Time for Installation of Instrumentation

The installation of the new geotechnical instrumentation will require access of subconsultant personnel and a drill rig to portions of the work area for extended periods. The Contractor is advised to review the geotechnical information provided on the plans and this

Special Provision for general location and layout information.

The following sequence and time estimates are provided for the Contractor's planning purposes. The Contractor shall be advised that the following information is approximate and may vary as directed by the Engineer.

1. Clear and grub (by Contractor).
2. Place aggregate subbase course - gravel on natural subgrade after grubbing and/or muck excavation followed by the drainage layer (by Contractor).
3. Install settlement platforms on drainage layer (by Contractor)
4. Complete initial survey of settlement platforms (i.e. initialize; by Engineer – 2 weeks)
5. Install prefabricated vertical drains (by Contractor)
6. Install piezometers and inclinometers (by Engineer – 6 weeks).
7. Extend settlement platforms and feed piezometer leads through riser pipes as embankment fill progresses (by Contractor).
8. Complete survey of settlement platforms before and after extending (by Engineer – 2 days).
9. Continue placing fill until Stage 1 or Stage 2 design grades are reached (by Contractor).
10. Install catch basin barrel sections at instruments denoted in the plans (by Contractor)

The durations shown above represent the total estimated installation time. The Engineer will coordinate settlement platform initialization and installation order of piezometers/inclinometers with the Contractor's work plan for wick installation and embankment construction. Partial areas of the site may be approved for fill placement prior to others to expedite the overall schedule.

639.10 Method of Measurement

Instrumentation (geotechnical) provided in accordance with Plans and Specifications will be measured by the lump sum.

639.11 Basis of Payment

Instrumentation (geotechnical) will be paid for at the Contract lump sum price which shall be full compensation for all labor, materials, and equipment required to install, extend, protect and replace (if necessary) the instrumentation and associated items described in this section and shown on the Plans.

Removal and replacement of instrumentation damaged by the Contractor shall be incidental to the work. Time required for the Contractor to allow installation, maintenance and measurement of instrumentation by the Engineer shall be incidental to the work.

Payment will be made under:

Pay Item		Pay Unit
639.26	Instrumentation (Geotechnical)	Lump Sum

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 652

MAINTENANCE OF TRAFFIC

(Specific Project Maintenance of Traffic Requirements)

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.

Cummings Road Traffic Control Requirements

Two lanes of traffic (one lane in each direction) shall be maintained at all times with the exception of the hours between 7:00 PM and 7:00 AM Sunday through Thursday nights. During this overnight period, traffic may be reduced to a single lane of alternating one-way traffic. Two lanes of traffic shall be maintained at all times between Thanksgiving and Christmas.

Maine Turnpike Ramp Traffic Control Requirements

Maintenance of traffic plans have been developed for the work on the mainline and ramps. Minimum ramp widths of 16 ft (12 ft lane and 2 ft shoulders) must be maintained at all times, unless otherwise noted. Shoulder closures and lane shifts meeting the MUTCD may be used to construct embankment areas immediately adjacent to ramps.

A single weekend closure of the southbound On Ramp and Off Ramp, with an off-site detour for the purpose of installing wick drains in the existing ramps are permitted as defined in Subsection 107.4.6 Prosecution of Work. All wick drains, gravels, pavement, and barrier or guardrail must be installed prior to reopening the ramps. A weekend refers to Friday 9:00 p.m. to the following Monday at 6:00 a.m. Additional nightly closures may be required to shim the ramp surfaces to provide a reasonable driving surface as required by the Resident. The Contractor shall notify the Resident/Authority two weeks prior to all closures. A temporary detour shall be established and maintained at all times in accordance with the detour plan shown in the Plans. The northbound on ramp and southbound on ramps may not be closed at the same time. Ramp closures will not be permitted on holiday weekends or any weekend between Thanksgiving and New Year's Day. Overnight ramp closures will be allowed from 9:00 p.m. to 5:00 a.m. the following morning.

Equipment moves across ramps will require a ramp closure by the state police and must be approved by the authority in advance. Ramp closures for equipment moves will not be permitted between 6:00 a.m. and 9:00 a.m. and between 3:00 p.m. and 7:00 p.m. All State Police shall be coordinated through the Maine Turnpike Authority. The Authority will make payment for the State Police officers and vehicles directly to the State Police.

Lane 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 $500 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.

Construction vehicles will not be allowed to cross active ramps. Access to, and egress from, the project site shall be with the direction of travel without crossing traffic.

Maine Turnpike 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:

Shoulder closures must be used for construction of embankments adjacent to the mainline. Lane closures within the times noted below will be required for construction of cross culverts. Culvert trenches not able to be completed per the plans in a single night must be closed and paved with temporary pavement prior to reopening lanes.

Construction vehicles are prohibited from merging with mainline traffic between 6:00 a.m. and 9:00 a.m. and between 3:00 p.m. and 7:00 p.m. unless the merge occurs at an interchange.

Loading/unloading trucks shall not be closer than six feet from an open travel lane when being loaded or unloaded within the work zone.

Portable light towers will be required to illuminate the night construction work area.

Mainline Northbound January 1 to June 30 September 1 to December 31 (Does not account for holiday restrictions)				
		Equipment Moves	**Temporary Lane Closures**	**Temporary Shoulder Closures**
Days of Week:	Monday through Friday			
Time of Day:	9:00 a.m. to 3:00 p.m.			Allowed
Days of Week:	Sunday night through Friday morning			
Time of Day:	7:00 p.m. to 6:00 a.m. following day	Allowed	Allowed	Allowed

Mainline Southbound January 1 to June 30 September 1 to December 31 (Does not account for holiday restrictions)				
		Equipment Moves	**Temporary Lane Closures**	**Temporary Shoulder Closures**
Days of Week:	Monday through Friday			
Time of Day:	9:00 a.m. to 3:00 p.m.			Allowed
Days of Week:	Sunday night through Friday morning			
Time of Day:	7:00 p.m.* to 6:00 a.m. following day	Allowed	Allowed	Allowed

*Sunday night lane closures cannot start until 8:00 p.m.

Mainline Northbound July 1 to August 31 (Does not account for holiday restrictions)				
		Equipment Moves	**Temporary Lane Closures**	**Temporary Shoulder Closures**
Days of Week:	Monday through Thursday			
Time of Day:	9:00 a.m. to 3:00 p.m.			Allowed
Days of Week:	Sunday night through Friday morning			
Time of Day:	9:00 p.m. to 6:00 a.m. following day	Allowed	Allowed	Allowed

Mainline Southbound July 1 to August 31 (Does not account for holiday restrictions)				
		Equipment Moves	**Temporary Lane Closures**	**Temporary Shoulder Closures**
Days of Week:	Monday through Friday			
Time of Day:	9:00 a.m. to 3:00 p.m.			Allowed
Days of Week:	Sunday night through Friday morning			
Time of Day:	8:00 p.m.* to 6:00 a.m. following day	Allowed	Allowed	Allowed

*Sunday night lane closures cannot start until 9:00 p.m.

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Drum Left in Place)
(Construction Signs Left in Place)

652.1 Description

The following paragraphs are added:

The Contractor shall furnish new Drums with "MTA" painted on the drum and new Construction Signs for all drums and construction signs that are designated on the plans as Left in Place. Drums shall also include NCHRP approved tire sidewall ballasts.

These Drums and Signs shall be left in place at the locations designated on the plans and/or as determined by the resident at the completion of this contract and shall become the property of the Authority. Any Signs that describe conditions that are not applicable at the completion of this contract shall be covered with 3/8" CDX exterior grade plywood that is painted black. The plywood must be secured such that it will remain for an extended duration and not cause damage to the sign itself. Method of securing the plywood covers shall be approved by the Resident prior to applying.

652.8 Basis of Payment

The following paragraphs are added:

Payment for Drums shall also include the weights approved for use to secure drums in place. Payment for Signs shall also include all posts, plywood, paint, mounting hardware and all additional incidentals necessary to install the sign covers.

All materials shall be in "like" new condition as determined by the Resident for final acceptance.

Payment will be under:

Pay Item		Pay Unit
652.332	Drum Left In Place	Each
652.351	Construction Signs Left In Place	SF

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Truck Mounted Attenuator)

Section 652 of the Maine Turnpike Authority 2016 Supplemental Specifications is modified as follows:

652.1 Description

The following paragraph is added:

When a pay item for a Truck Mounted Attenuator (TMA) is included in the contract at least one TMA will be required on the project and its use will be required. The truck mounted attenuator should be utilized in lane closures and other construction operations where workers are exposed to traffic and not protected by other positive means. The Contractor shall manage the utilization and operation of the TMA and 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.

652.2.1 Truck Mounted Attenuator

This section is deleted in its entirety and replaced with the following:

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.
- A mounted revolving amber light or amber strobe light 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.

652.3.7 Operations

This section is deleted in its entirety and replaced with the following:

The Contractor shall manage the operation of the truck mounted attenuator. The truck mounted attenuator should be utilized in lane closures 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. When used as a barrier, the barrier truck shall be parked in low gear with brakes applied and the front wheels turned away from the work zone and the adjacent traffic lane. For placement details, reference the Manual of Uniform Traffic Control Devices (MUTCD).

Weight of Truck	Barrier Truck Distance from Work Zone of Hazard	Shadow Truck Distance from Work Vehicle or Work Zone
10,000 lbs	250 ft	300 ft
15,000 lbs	200 ft	250 ft
>24,000 lbs	150 ft	200 ft

652.7 Method of Measurement

The last paragraph is deleted and replaced with:

Truck mounted attenuator shall be measured for payment by the calendar day for each calendar day that a unit is used on a travel lane or shoulder on the project, as approved by the resident.

652.8.2 Basis of Payment

The last two paragraphs are deleted and replaced with:

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.

Payment will be made under:

Pay Item		Pay Unit
652.45	Truck Mounted Attenuator	Calendar Day
652.4501	Truck Mounted Attenuator – 24,000 LB	Calendar Day

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Automated Speed Limit Sign)

652.1 Description

This special provision provides for furnishing, operating, and maintaining an Automated Trailer Mounted Radar Speed Limit Sign for project use. When a pay item for an Automated Trailer Mounted Radar Speed Limit Sign is included in the Contract at least one will be required on the project when there is a Work Zone Speed Limit in place on the mainline. The Contractor shall furnish, operate, and maintain the Automated Trailer Mounted Radar Speed Limit Signs during the project operations. Automated Trailer Mounted Radar Speed Limit Signs will not be used on ramps.

652.1.1 Instruction and maintenance manuals shall be provided.

652.2 Materials

Automated Trailer Mounted Speed Limit Sign

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”.

Signs

Base material for the regulatory speed limit signs shall be weather proof, 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 Appendix).

Signs and secondary signs shall follow the MUTCD for minimum mounting heights.

Power supply

The power supply shall be either full battery power with solar panel charging (capable of maintaining a charged battery level) and 135 ampere, 12 volt deep cycle batteries, or diesel powered generator with a fuel capacity sufficient for 10 hours of continuous operation.

Flashing Lights

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.

Radar

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.

CONSTRUCTION REQUIREMENTS

652.3.2 Responsibility of the Contractor

The Contractor shall furnish the Automated Trailer Mounted Speed Limit Sign as described in this Special Provision for this project.

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. 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.

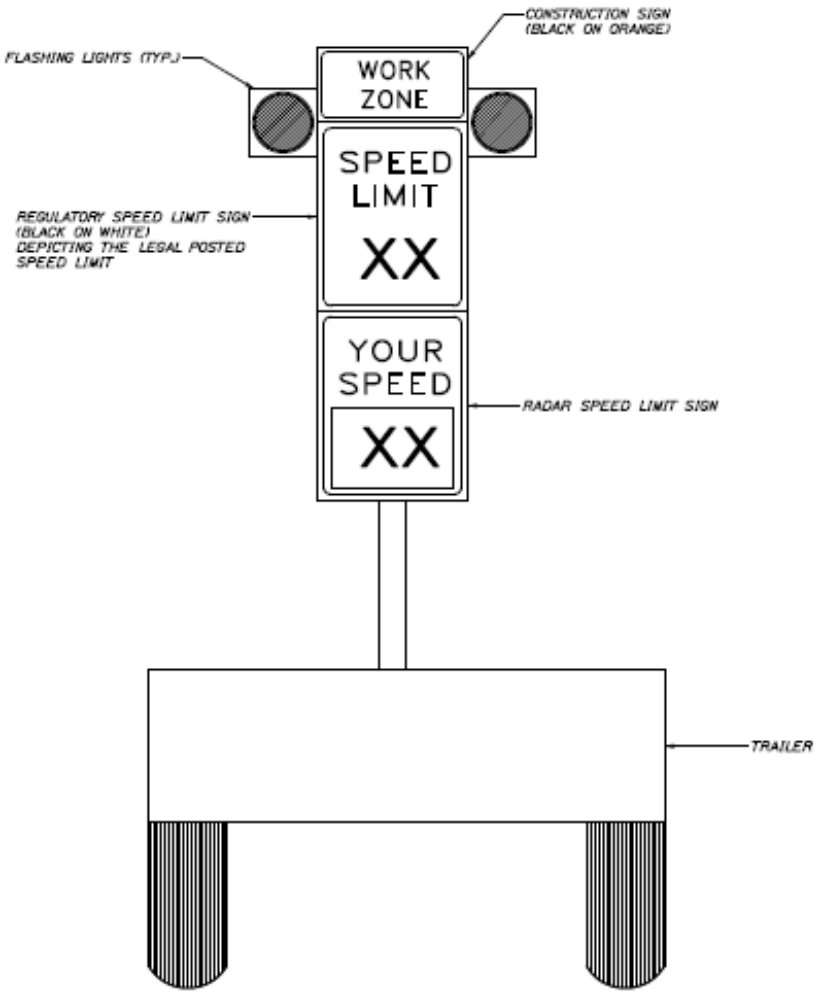
652.7 Method of Measurement

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.

652.8 Basis of Payment

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.

Pay Item		Pay Unit
652.451	Automated Trailer Mounted Speed Limit Sign	Calendar Day
652.452	Automated Trailer Mounted Speed Limit Sign	Each



Date: 2/13/2018

Filename: Trailer Mounted Speed Limit.dgn

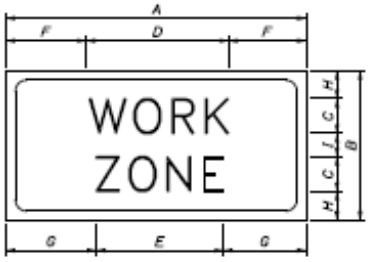
MAINE TURNPIKE

HNTB

FEBRUARY 2018

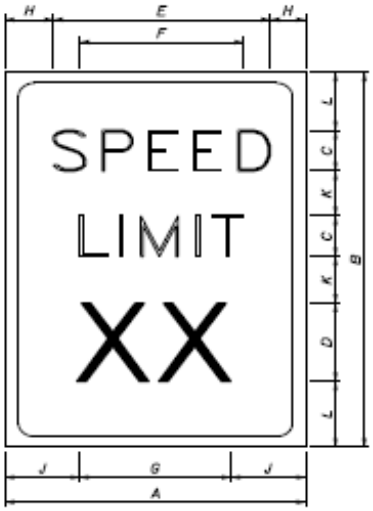
AUTOMATED TRAILER MOUNTED
SPEED LIMIT SIGN

1OF 2



SIGN *1

1.25" BORDER, 0.75" INDENT,
BLACK ON ORANGE, BB GRADE PLYWOOD SIGN



SIGN *2

1.25" BORDER, 0.75" INDENT,
BLACK ON WHITE, BB GRADE PLYWOOD SIGN

	DIMENSIONS (INCHES) / LETTER FONTS											
	A	B	C	D	E	F	G	H	I	J	K	L
*1	48	20	5D	18⅛	16⅝	14⅞	15⅝	4	2	N/A	N/A	N/A
*2	48	60	8E	16E	38¼	29¼	29½	4½	9⅜	9¼	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

SPECIAL PROVISION

SECTION 652

MAINTENANCE OF TRAFFIC

(Temporary Portable Rumble Strips)

652.1 Description:

This work consists of furnishing and placing temporary portable rumble strips RoadQuake 2F TPRS or an approved equal.

652.2 Materials:

Furnish a temporary portable rumble strip system, which 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.

652.3 General:

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 night time lane closures.

Placement:

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.

Maintenance:

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.

652.4 Method of Measurement:

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.

652.5 Basis of Payment:

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.

Pay Item		Pay Unit
652.46	Temporary Portable Rumble Strip	Unit

SECTION 652

MAINTENANCE OF TRAFFIC

(Flagger)

652.2.4 Other Devices Revise this Section by removing the following paragraph: "STOP/SLOW paddles shall be the primary and preferred hand held signaling device. Flags shall be limited to Emergencies. The paddle shall have an octagonal shape and be at least 18 inches wide with letters at least 6 inches high and should be fabricated from semi-rigid material"

And replace with these paragraphs:

"Flaggers shall use a STOP / SLOW hand held 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."

652.4 Flaggers Revise this section by removing the first paragraph, and replace it with the Following:

"The Contractor shall furnish flaggers as required by the contract documents or as otherwise specified by the Resident. All flaggers must have successfully completed a flagger test approved by the MaineDOT and administered by a MaineDOT-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 hardhat with 360 ° retro-reflectivity. For nighttime conditions, flaggers shall wear all Class 3 apparel, meeting ANSI 107-2004, including a Class 3 top (vest, shirt or jacket) and a Class E bottom (pants or coveralls), shall be worn along with a hardhat with 360 ° retro-reflectivity and shall be visible at a minimum distance of 1000 ft. Flagger stations must be illuminated in nighttime conditions to assure visibility and will be specifically addressed in detail in the Contractor's TCP".

Flaggers shall not stop traffic on Turnpike mainline or interchange ramps. Only State Police are allowed to stop traffic on mainline or interchange ramps.

652.7 Method of Measurement

The following paragraph is added:

The measurement of Flaggers will be strictly limited to the following work activities:

Construction of access road entrance at Cummings Road

All other uses of Flaggers will not be measured for payment but shall be incidental to the Maintenance of Traffic Control Devices item. 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.

SPECIAL PROVISION

SECTION 719

SIGNING MATERIAL

Section 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. flexible

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 Direct Applied Reflectorized Letters, Numerals, Symbols, and Borders

Direct 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.

MAINE TURNPIKE AUTHORITY

SPECIFICATIONS

PART III – APPENDICES

APPENDIX A

MS4 PROCEDURES AND PLANS

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