# MAINE TURNPIKE AUTHORITY MAINE TURNPIKE

#### **CONTRACT DOCUMENTS**

## **CONTRACT 2019.01**

### PAVEMENT REHABILITATION MM 42.0 TO MM 44.3

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.

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#### MAINE TURNPIKE AUTHORITY

#### NOTICE TO CONTRACTORS

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

#### **CONTRACT 2019.01**

#### PAVEMENT REHABILITATION MM 42,0 TO MM 44.3

at the office of the Maine Turnpike Authority, 2360 Congress Street, Portland, Maine, until 11:00 a.m., prevailing time as determined by the Authority on May 14, 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 Paving Construction Projects. All other bids may be rejected. This Project includes a wage determination developed by the State of Maine Department of Labor.

The pavement rehabilitation work consists of milling and paving two or three 12-foot wide lanes from mile 42.0 to mile 44.3. The work also involves pavement markings, maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications.

The General Limits of work are as follows:

Location 1: Three Northbound travel lanes from Mile 42.0 (Sta. 2069+50) in the Town of Scarborough and extending northerly to Mile 44.0 (Sta. 2183+50). Two Northbound travel lanes from this point to the end of the Project at MM 44.3 (Sta. 2197+50).

Location 2: Two Southbound travel lanes from Mile 44.3 (Sta. 2197+50) in the Town of Scarborough and extending southerly to Mile 43.2 (Sta. 2139+50). Three Southbound travel lanes from this point to the end of the Project at MM 42.0 (Sta. 2069+50).

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 Contract Documents may be obtained from the Authority upon payment of Fifty Dollars (\$50.00) for each set, which payment will not be returned. Checks shall be made payable to: Maine Turnpike Authority. The contract documents may also be downloaded from a link on our website at <a href="https://www.maineturnpike.com">www.maineturnpike.com</a> [Projects and Planning/Construction Contracts].

For general information regarding Bidding and Contracting procedures, contact Nathaniel F. Carll, Purchasing Manager, at (207) 871-7771 Ext. 115. For information regarding Schedule of Items, plan holders list, and bid results, visit our website at <a href="www.maineturnpike.com">www.maineturnpike.com</a> [Contract Bids]. For Project specific information, fax or email all questions to Nathaniel F. Carll, Purchasing Manager, at (207) 871-7739 or <a href="maineturnpike.com">ncarll@maineturnpike.com</a>. 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", price \$13, (\$16 by mail) "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: <a href="www.maine.gov/mdot/contractor-consultant-information/contractor\_cons.php">www.maine.gov/mdot/contractor-consultant-information/contractor\_cons.php</a>.

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 April 30, 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 serves its best interest.

MAINE TURNPIKE AUTHORITY

Nathaniel F. Carll Purchasing Manager Maine Turnpike Authority Portland, Maine

# MAINE TURNPIKE AUTHORITY MAINE TURNPIKE

# **PROPOSAL**

**CONTRACT 2019.01** 

PAVEMENT REHABILITATION MM 42.0 TO MM 44.3

#### MAINE TURNPIKE AUTHORITY

#### **PROPOSAL**

## **CONTRACT 2019.01**

#### PAVEMENT REHABILITATION MM 42,0 TO MM 44.3

#### TO MAINE TURNPIKE AUTHORITY:

The pavement rehabilitation work consists of milling and paving two or three 12-foot wide lanes from mile 42.0 to mile 44.3. The work also involves pavement markings, maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications

The General Limits of work are as follows:

Location 1: Three Northbound travel lanes from Mile 42.0 (Sta. 2069+50) in the Town of Scarborough and extending northerly to Mile 44.0 (Sta. 2183+50). Two Northbound travel lanes from this point to the end of the Project at MM 44.3

(Sta. 2197+50).

<u>Location 2:</u> Two Southbound travel lanes from Mile 44.3 (Sta. 2197+50) in the Town of

Scarborough and extending southerly to Mile 43.2 (Sta. 2139+50). Three Southbound travel lanes from this point to the end of the Project at MM 42.0

(Sta. 2069+50).

This Work will be done under a Contract known as Contract 2019.01 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. 2019.01 Pavement Rehabilitation** MM 42.0 TO MM 44.3

Item No	Item Description	Units	Approx. Quantities	Unit Prices in Numbers		Bid Amount in Numbers	
INO	item bescription	Offics	Quantities	Dollars	Cents	Dollars	Cents
202.202	Removing Pavement Surface - Mainline	Square Yard	37,600				     
202.2026	Removing Pavement Surface  – Drainage Paths	Square Foot	780				     
202.206	Fill Existing Rumble Strips	Linear Foot	4,800		   		     
403.21	Hot Mix Asphalt, 9.5mm, 20% RAP Max.	Ton	4,600				     
409.152	Bituminous Tack Coat Trackless - Applied	Gallon	5,800				     
470.08	Berm Dropoff Correction – Grindings	Ton	100		   		     
470.081	Berm Correction	Linear Foot	1,000		   		     
615.07	Loam	Cubic Yard	10				     
618.14	Seeding Method 2	Unit	2		   		     
619.12	Mulch	Unit	2		   		     
627.681	Temporary Pavement Marking Line, White or Yellow	Linear Foot	51,200				     

403.21	Hot Mix Asphalt, 9.5mm, 20% RAP Max.	Ton	4,600			
409.152	Bituminous Tack Coat Trackless - Applied	Gallon	5,800			   
470.08	Berm Dropoff Correction – Grindings	Ton	100			
470.081	Berm Correction	Linear Foot	1,000			     
615.07	Loam	Cubic Yard	10			   
618.14	Seeding Method 2	Unit	2			     
619.12	Mulch	Unit	2			
627.681	Temporary Pavement Marking Line, White or Yellow	Linear Foot	51,200			
				CARRIED FORW	ARD.	

**CONTRACT NO: 2019.01** 

	-	•			CON	TRACT NO: 2019.0	1
Item No	Item Description	Approx. Units Quantities	Approx. Quantities	Unit Prices in Numbers	Bid Amount in Numbers		
				Dollars	Cents	Dollars	Cents
				BROUGHT FOR	WARD:		
627.73	Pavement Marking Tape	Linear Foot	3,300		     		     
627.75	White or Yellow Pavement and Curb Markings	Square Foot	120		     		     
627.772	Removing Existing Pavement Markings - Tape	Square Foot	120		     		     
627.812	Temporary Raised Pavement Markers	Each	5,120		     		     
629.05	Hand Labor, Straight Time	Hour	10		     		     
631.12	All Purpose Excavator (including Operator)	Hour	10		     		     
631.172	Truck - Large (including Operator)	Hour	10		     		     
652.361	Maintenance of Traffic Control Devices	Lump Sum	1		     		     
659.1	Mobilization	Lump Sum	1		     		     
TOTAL:						     	

Acknowledgment is hereby made of t Plans and Specifications:	the following Addenda received since issuance of the
Bank, forBank, for	original bid bond, cashier's or certified check on payable to the proposal shall be accepted by the Maine Turnpike to execute a Contract with, and furnish the security set forth in the Specifications, within the time fixed 5%) Percent of the Total Amount of the Proposal for at not less than \$500.00, obtained out of the original ecome the property of the Maine Turnpike Authority; andersigned.
The performance of said Work under specified in Subsection 107.1.	er this Contract will be completed during the time
<u> </u>	e of this Contract and that I (we) will, in the event of the time limit named above, pay to Maine Turnpike or amounts stated in the Specifications.
, having principal office a	rtnership/Corporation under the laws of the State of
thereunto duly authorized.	(SEAL)
Affix Corporate Seal	(SEAL)
or Power of Attorney Where Applicable	(SEAL)
	Ву:
	Its:

Information below to be typed or printed where applicable:

INDIVIDUAL:		
(Name)	(Address)	
PARTNERSHIP - Name and Address of General 1	Partners:	
(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
	S. Peter Mills Executive Director
	Date of Signature:
ATTEST:	
Jonathan A. Arey, Esq., Secretary	
	CONTRACTOR –
	CONTRACTOR
	By:
	Title:
	Date of Cinnetons
WHENE CC.	Date of Signature:
WITNESS:	

# CONTRACT BOND

KNOW ALL MI	EN BY THESE PRESENT	S that	
of	in the County of	and State	of
as Principal, and		a Corporation duly orga	anized under the
laws of the State of	and having a	a usual place of business in	
		the Maine Turnpike Authorit	
		Dollars (\$ successors, for which payments, successors and assigns, joint	
foregoing Contract No. satisfy all claims and de equipment and all othe contemplated by said Cowhich the Obligee may shall be null and void; or	shall from shall from shall from shall from shall for the salar items contracted for, or contract, and shall fully rein incur in making good any therwise it shall remain in the shall rem		on his part and labor, material, with the Work lay and expense
Signed and sealed	this day of	, A.D., 201	
Witnesses:		CONTRACTOR	
			(SEAL)
			(SEAL)
			(SEAL)
		SURETY	
			(SEAL)
			(SEAL)
			(SFAI)

(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
	g the current payment for work done and materials supplied for
Project No, in	, Maine, under the undersigned's
Contract with the Maine Turnpike Authori	ty.
The send only and an early state of	had the First Description
	hat the Final Payment of
is the final payment for all work, labor, ma	aterials, services and miscellaneous (all of which are hereinafter
referred to as work items ) supplied to t	he said Project through and
that no additional sum is claimed by the ur	idersigned respecting said Project.
undersigned in connection with said Projection	that all persons and firms who supplied Work Items to the ct have been fully paid by the undersigned for such Work Items immediately upon receipt of this payment.
of that such payment will be fully effected	ininediately upon receipt of this payment.
* *	erewith made, the undersigned does fully and finally release and ity, and its Surety, if any, from any and all claims, liens or right under any applicable bond, law or statute.
It is understood that this Affidavir claims relating to the Work Items furnished	t is submitted to assure the Owner and others that all liens and d by the undersigned are paid.
(Contractor)	
	By:
	Title:
State of MAINE	
County of	
I hereby (	certify on hehalf of
(Company Officer)	certify on behalf of(Company Name)
	irst duly sworn and stated that the foregoing representations are
(Title)	
are true and correct upon his own knowled and the free act and deed of the above-name	ge and that the foregoing is his free act and deed in said capacity
and the free act and deed of the above-hair	(Company Name)
The above-named.	, personally appeared before me this day of
and swears that this is his free act and deed	1.
	(SEAL)
	Notary Public
	•
	My Commission Expires:

# MAINE TURNPIKE AUTHORITY SPECIFICATIONS PART II – SPECIAL PROVISIONS

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#### MAINE TURNPIKE AUTHORITY

#### **SPECIFICATIONS**

#### PART II - SPECIAL PROVISIONS

All work shall be governed by the Maine Department of Transportation Standard Specifications, November 2014 Edition 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 pavement rehabilitation work consists of milling and paving two or three 12-foot wide lanes from mile 42.0 to mile 44.3. The work also involves pavement markings, maintenance of traffic and all other work incidental thereto in accordance with the Plans and Specifications.

The General Limits of work are as follows:

<u>Location 1:</u> Three Northbound travel lanes from Mile 42.0 (Sta. 2069+50) in the Town

of Scarborough and extending northerly to Mile 44.0 (Sta. 2183+50). Two Northbound travel lanes from this point to the end of the Project at MM 44.3

(Sta. 2197+50).

Location 2: Two Southbound travel lanes from Mile 44.3 (Sta. 2197+50) in the Town of

Scarborough and extending southerly to Mile 43.2 (Sta. 2139+50). Three Southbound travel lanes from this point to the end of the Project at MM 42.0

(Sta. 2069+50).

#### Plans

The drawings included in the Contract Documents (Appendix A), 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 2019.01, Pavement Rehabilitation." 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 MTA Supplemental Specifications:

Independence Day 2019 12:00 p.m. preceding Wednesday to

(Fourth of July) 6:00 a.m. the following Friday

# 103.4 Notice of Award

The following sentence is added:

The Maine Turnpike Authority Board is scheduled to consider the Contract Award on May 23, 2019.

# 104.3.8 Wage Rates and Labor Laws

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 2019.01 Pavement Rehabilitation, MM 42.0 to MM 44.3

Location of Project -- Scarborough, Cumberland County

#### 2019 Fair Minimum Wage Rates Highway & Earth Cumberland County

	Minimum	Minimum			Minimum	Minimum	
Occupation Title	Wage	Benefit	Total	Occupation Title	Wage	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 filling 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-069-2019 A true copy

Filing Date: February 22, 2019 Attest:

Scott R. Cotnoir
Expiration Date: 12-31-2019 Wage & Hour Director
Bureau of Labor Standards

BLS(Highway & Earth Cumberland)

SP-3

#### 104.4.7 Cooperation With Other Contractors

This subsection is amended by the addition of the following:

2016.08 - Exit 44 ORT 2018.19 - Cummings Road Bridge Replacement 2018.13 - Guide Sign Modifications (Phase III)

The above construction contracts shall be considered adjacent projects.

#### 105.8.2 Permit Requirements

This Subsection is amended by the addition of the following:

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 administered by the Maine Department of Environmental Protection (DEP). A Notice of Intent (NOI) was not submitted by the Authority to the DEP for coverage under the Maine Construction General Permit (MCGP) due to the Limit of Disturbance (LOD) being less than five acres.

The Limit of Disturbance (LOD) for Contractor's Temporary equipment storage area is 0.20 acres of disturbed area.

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, 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.

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, but less than one acre, the Resident shall have a minimum of five (5) working days to approve the revised LOD plan.

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

The Contractor shall comply with the conditions outlined in the Maine Pollutant Discharge Elimination System (MPDES) 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 permit.

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 Supplemental Specification Subsection 656.07) and implement measures to reduce pollutants in stormwater runoff from construction activities. MS4 forms are included in Appendix B

#### 107.1 Contract Time and Contract Completion Date

This Subsection is amended by the addition of the following:

The work shall be completed on or before August 2, 2019.

#### 107.4.2 Schedule of Work Required

This Subsection is amended by the addition of the following:

The work shall be completed in logical timely increments. The Contractor shall submit a schedule for approval that shows large segments of work scheduled for continuous blocks of time. Work in a segment shall be completed over a period of continuous work days. Work shall not be started in an area until the Contractor has scheduled the labor and equipment necessary to complete all work in the segment. The Contractor will not be permitted to "stretch" the Project over the entire Contract period, doing a day or two per week.

A schedule that shows sporadic work activities through the duration of the Contract will not be approved. Actual work activities that are sporadic will not be allowed.

The Contractor shall also submit a two-week look ahead schedule as the project progresses. The first week shall be a detailed schedule submitted by the Contractor showing all lane closures that are anticipated for the following week. Lane closures that are not shown on this schedule will only be allowed if they are deemed emergency lane closures by the Resident.

The following Subsection is added:

#### 107.4.7 Limitations of Operations

#### Roadway and Clear Zone--Traffic Control Requirements

The construction in each location shall proceed expeditiously. Once milling and/or paving operations commence for every day/night not worked (milling or paving) when work is allowed by Contract and weather, the Contractor will be charged a fee in the amount of \$1,000 (excluding inclement weather days).

The Contractor will be allowed to work on both roadways at the same time. The Contractor shall complete his milling operation in one location prior to beginning his milling operation in the

other location unless otherwise approved by the Resident. The paving operation shall begin within seven calendar days of all milling being complete per location. The Contractor shall complete the paving operation in one location prior to beginning his paving operation in other location. The Contractor will be allowed to work in two separate work areas on each roadway. The work areas are not required to be in the same lane.

The Contractor shall begin the paving operation in Lane 1 (inside passing lane), followed by Lane 2, and then Lane 3 (travel lane).

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

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

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

The Contractor shall keep a 12 foot wide lane open for traffic during his milling and paving operations unless approved otherwise by the Resident.

Temporary bituminous ramps will be required at all butt joints.

Traffic will be allowed to traverse the longitudinal joint where the pavement is lower in one lane than the adjacent lane.

#### Drainage and Permanent Pavement Markings

The Contractor shall schedule all drainage paths to coincide with his work operations in the adjacent lane. This shall include milling around median shoulder catch basins.

Permanent pavement markings shall be completed by the Authority. The Contractor shall install all Traffic Control Devices required for this striping, and shall coordinate this work with the Resident.

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.

#### **Equipment Storage**

The Contractor shall submit his proposed construction staging and storage areas for approval by the Resident.

The following Subsection is added:

#### 107.4.8 Failure to Complete Daily Work on Time (Lane Rental)

Both roadways shall have all existing lanes and acceleration/deceleration lanes, fully open to traffic for all times outside the allowed lane closure times. The Contractor shall pay a \$500.00 lane rental fee for each five (5) minute block of time or portion thereof that each lane closure remains in place outside the allowed times on each roadway.

The travel lanes shall not be opened to traffic until the pavement internal temperature has cooled to 120°F, pavement markers (temporary and/or permanent) have been installed, and all traffic control devices have been removed from the travel lanes to the satisfaction of the Resident.

#### SPECIAL PROVISION

#### SECTION 202

#### REMOVING STRUCTURES AND OBSTRUCTIONS

(Removing Pavement Surface-Mainline)

#### 202.01 Description

The following paragraphs are added:

The Contractor may not dispose of demolition concrete within the Project Limits. 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.

The following sentences are added:

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

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

Removal of approach pavement shall be completed 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 15'.

The following subsection is added:

#### 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  $30\pm$  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 forty-five degree pavement safety edge needed between adjacent unmilled lanes shall be incidental to the 202 pay items.

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 lanes and passing lane.

The finished milled surface will be inspected before being accepted, an 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 pavement grindings shall be disposed of by the Contractor off the turnpike right-of-way. All grindings shall be disposed of in accordance with the Maine Department of Environmental Protection Solid Waste Management Requirements.

#### 202.07 Method of Measurement

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

The following sentences are added:

Transporting and stockpiling of the pavement grindings 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.

#### 202.08 Basis of Payment

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

Payment will be made under:

Pay Item		<u>Pay Unit</u>
202.202	Removing Pavement Surface – Mainline	Square Yard

#### SPECIAL PROVISION

#### **SECTION 202**

#### REMOVING STRUCTURES AND OBSTRUCTIONS

(Removing Pavement Surface – Drainage Paths)

#### 202.01 Description

The following paragraphs are added:

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

In the areas where rumble strips are to be filled, a butt joint 10' long shall be milled prior to and after all catch basins.

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

The following Subsection is added:

#### 202.011 Materials

Grinding shall be done in accordance with Section 202.

Bituminous pavement shall conform to Section 401, Hot Mix Asphalt, 9.5 mm.

Bituminous tack coat shall conform to Section 409.

Joint sealant shall conform to ASTM D6690 Type IV.

#### 202.06 Removing Bituminous Concrete Pavement

This Subsection is deleted and replaced with the following:

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

The drainage paths shall be installed at the roadway low points of the sag vertical curves and at 500 foot intervals in both the outside and inside shoulders. Drainage paths shall not be installed within 500 feet of the crest of a vertical curve. The drainage paths shall extend from the edge of the milled travel lane (Lane 2 or 3) and daylight six feet into the outside shoulder and from the edge of the milled passing lane (Lane 1) and the edge of pavement (4'-0") without guardrail.

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

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

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

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

Vehicles will be permitted to traverse unfilled drainage paths.

#### 202.07 Method of Measurement

The second paragraph is deleted and replaced with the following:

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

#### 202.08 Basis of Payment

The following is added after the last paragraph:

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

Payment will be made under:

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

#### SPECIAL PROVISION

#### **SECTION 202**

#### REMOVING STRUCTURES AND OBSTRUCTIONS

(Filling Existing Rumble Strips)

#### 202.01 Description

The following paragraph is added:

This work shall consist tacking the existing rumble strips on the 4' median shoulder and shimming with a 4.75mm MaineDot approved mix. Location and lengths of removal shall be as shown on the Plans or as approved by the Resident.

The following Subsections are added:

#### 202.011 Materials

Bituminous tack coat shall conform to Section 409.

Hot mix asphalt, 4.75mm shall conform to Section 401.

#### 202.025 General

Existing rumble strips are approximately 16 inches long, seven inches wide, 1/2 inch deep, and spaced approximately every five inches.

#### 202.07 Method of Measurement

The following paragraph is added:

Filling Existing Rumble Strips shall be measured by the linear foot removed and accepted. Measurement shall be parallel to the baseline.

#### 202.08 Basis of Payment

The following sentences are added:

Filling Existing Rumble Strips shall be paid for at the Contract unit price per linear foot which includes all bituminous tack coat, pavement, equipment and labor necessary to satisfactorily complete the work.

Payment will be made under:

Pay Item Pay Unit

202.2061 Filling Existing Rumble Strips

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 AASHTO 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 [140°F] 3.0mm [1/8 in] max

Bond, non-immersed Three 12.7mm [½ in] specimens pass

3 cycles @ 200% extension @ -29°C

 $[-20^{\circ}F]$ 

Resilience, % 60 min

Asphalt Compatibility, ASTM D5329 pass\*

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.

<sup>\*</sup> 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 [140°F].

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 Nmax.
- 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)	_		red Density nt of G <sub>mm</sub> )		A)(Min al Maxi	regate imum P	Voids Filled with Binder (VFB) (Minimum %)	Fines/Eff. Binder Ratio	
	Ninitial	N <sub>design</sub>	N <sub>max</sub>	19	12.5	9.5	4.75		
10 to <30	<u>&lt;</u> 89.0	96.0	<u>&lt;</u> 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	Test Temperature	Maximum Rut	Minimum	Minimum
Binder Grade	(°C)	Depth (mm)	Number of Passes	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 5°F 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  $120^{\circ}$  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  $120^{\circ}$  F.

#### 401.06 Weather and Seasonal Limitations

The first paragraph shall be deleted and replaced with:

The Contractor may place Hot Mix Asphalt Pavement for use other than a traveled way wearing course, provided that the air temperature as determined by an approved thermometer (placed in the shade at the paving location) is  $40^{\circ}$ 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  $50^{\circ}$ 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  $50^{\circ}$ 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.

#### 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 64°C 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  $G^*/\sin(\delta)$  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 70°C 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  $G^*/\sin(\delta)$  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 adjacent to unmilled lanes shall be incidental to the 202 pay items.

#### 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 403 Items.

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

#### 403.05 Basis of Payment

Hot Mix Asphalt\ placed as a wearing surface will be paid under Item 403.210 Hot Mix Asphalt, 9.5 mm- 20% RAP.

The following pay item is added:

Pay Item

403.210 Hot Mix Asphalt, 9.5 mm– 20% RAP

Ton

#### **SECTION 403**

#### HOT MIX ASPHALT PAVEMENT

Course	HMA	Item	Total	No. of	Complimentary
	Grading	Number	Thickness	Layers	Notes
Mainline Mill and Overlay					
Wearing	9.5mm	403.210	3/4"-1"	1	C,I,K

#### **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%.

#### SECTION 409

#### **BITUMINOUS TACK COAT**

#### 409.01 Description

This Subsection is deleted and replaced with the following:

This work consists of furnishing and applying one uniform application of UltraTack (NTSS-1HM) by Blacklidge or an approved equal as indicated in this specification and as per manufacturers' recommendation. The application rate shall be 0.06 gal/yd2

#### 409.05 Equipment

Add "or as determined by the Resident", after the words "gal/yd<sup>2</sup>]" 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
409.152	Bituminous Tack Coat NTSS-1HM Trackless– Applied	Gallon

#### SECTION 470

# BERM DROPOFF CORRECTION BERM CORRECTION (Grindings)

#### 470.01 Description

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

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

#### 470.02 Bituminous Materials

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

Sieve Designation	Percentage by Weight
<u> </u>	Passing Square Mesh Sieve
3/4"	100
1/2"	95-100
No. 4	50-80
No. 50	18-28
No. 200	3-10

#### 470.03 Method of Construction

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

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

#### 470.04 Method of Measurement

Pavement grindings shall be measured by the ton.

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

Material removed shall be measured by the linear foot.

#### 470.05 Basis of Payment

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

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

#### Payment will be made under:

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

#### **SECTION 627**

#### PAVEMENT MARKINGS

(Temporary Pavement Marking Paint)

#### 627.01 Description

The following sentence is added:

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

Temporary pavement marking paint shall 6" wide for Maine Turnpike lines unless otherwise noted.

#### 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 third paragraph is deleted and replaced with the following:

Broken lines shall consist of alternate 10 foot painted line segments and 30 foot gaps.

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 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 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
627.681	Temporary Pavement Marking Line, White or Yellow	Linear Foot

#### SECTION 627

#### PAVEMENT MARKINGS

(Temporary Raised Pavement Markers)

#### 627.01 Description

The following sentence are 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 shoulders from travel lanes (SWLL or SYEL) after placement of the surface course (HMA 9.5 mm).

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

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

#### 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		<u>Pay Unit</u>
627.812	Temporary Raised Pavement Markers	Each

#### **SECTION 627**

#### PAVEMENT MARKINGS

(Temporary 6 Inch Pavement Marking Tape)

#### 627.01 Description

The following sentence is added:

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

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

#### 627.02 Materials

The following paragraph is added:

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

#### 627.04 General

The following paragraphs are added:

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

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

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

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

#### 627.06 Application

The following paragraphs are added:

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

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

#### 627.08 Removing Lines and Markings

The following sentence is added:

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

#### 627.09 Method of Measurement

The following paragraph is added:

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

#### 627.10 Basis of Payment

The following paragraphs are added:

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

Payment will be made under:

Pay Item		<u>Pay Unit</u>
627.73	Temporary 6 Inch Pavement Marking Tape	Linear Foot

#### SECTION 652

#### **MAINTENANCE OF TRAFFIC**

(Specific Project Traffic Control)

This Specification describes the specific maintenance of traffic requirements for this Project.

The following minimum traffic requirements shall be maintained:

The minimum width required for traffic during the following operations, are shown on the Traffic Control Plans.

- Milling and Paving Operations
- Pavement Markings Layout and Placement

#### Maine Turnpike Traffic Control Requirements

Three lanes of traffic in each direction shall be maintained on the Maine Turnpike except when lane closure(s) are required to undertake project work. Single and Double lane closures shall be in accordance with the Maintenance of Traffic details shown on the Plans. Lane closures will only be allowed during the hours as shown in Table A below.

#### TABLE A

#### ALLOWABLE NB AND SB LANE CLOSURE TIMES

Single lane closure permitted	NB/SB 8pm to 6am Sun thru Thu Nights
Double lane closure permitted	NB/SB 10pm to 5am Sun thru Thu Nights

All temporary lane closures shall be made utilizing drums. Cones will be allowed for tangent sections and shall be a minimum of 36" tall.

Three cones or drums shall be placed transversely across the closed lane for every quarter mile of lane closure.

The Contractor will be allowed to store drums and cones on the traffic side of the guardrail (face of guardrail) during non-work hours or when they are not required for a lane closure. The drums or cones shall be placed no more than six inches from the face of guardrail. In some locations, the median guardrail is immediately adjacent to the edge of pavement and the drums or cones shall be stored behind the guardrail.

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

Existing Emergency Vehicle Ramps located at the Two Rod Road Underpass Bridge shall be maintained during Contract operations and access shall not be impeded by Contractor activities. No equipment or material storage will be allowed on the existing Emergency Vehicle Ramps.

See Subsection 104.4.7 Cooperation with Other Contractors for more information on other projects that may be in the area.

#### 652.7 Method of Measurement

The following paragraph is added:

Traffic control devices required to complete the work will be measured for payment under Item 652.361, Maintenance of Traffic Control Devices. Installation, maintenance, and removal of traffic setups and the Contractor's dedicated traffic employee's will not be measured separately for payment, but shall be incidental to Item 652.361.

#### **SECTION 652**

#### MAINTENANCE OF TRAFFIC

(General)

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

#### 652.2.4 Other Devices

The second paragraph is deleted in its entirety and replaced with:

Cones shall be predominantly orange and shall be made of a material that can be struck without causing damage to the impacting vehicle. Cones shall be not less than 28 inches in height. Rretro-reflective sheeting conforming to Section 719.01

Cones shall be retroreflectorized or equipped with lighting devices for maximum visibility. Retroreflectorization of cones that are 28 to 36 inches in height shall be provided by a 6-inch wide white band located 3 to 4 inches from the top of the cone and an additional 4-inch wide white band located approximately 2 inches below the 6-inch band.

Retroreflectorization of cones that are more than 36 inches in height shall be provided by horizontal, circumferential, alternating orange and white retroreflective stripes that are 4 to 6 inches wide. Each cone shall have a minimum of two orange and two white stripes with the top stripe being orange. Any non-retroreflective spaces between the orange and white stripes shall not exceed 3 inches in width.

#### 652.3.5 Installation of Traffic Control Devices

This Subsection is amended by the addition of the following after the first paragraph.

All signs shall be mounted on easels except the following which shall be mounted on NCHRP 350 approved posts, unless behind guardrail.

•	G20-1	<b>ROAD WORK NEXT 2 MILES</b>
•	G20-2	END ROAD WORK
•	CS4-9P	STAY IN LANE
•	W8-11	UNEVEN LANES
•	W8-15	GROOVED PAVEMENT
•	W8-15P	MOTORCYCLES (Graphic)

<sup>\*</sup> Where indicated on Plans

All traffic control signs shall be installed and removed daily with the exception of the above construction signs which shall be permanent until all work is complete or as approved by the

Resident. When the paving operation in a location is completed, the W8-15, W8-15P and CS4-9P construction signs shall be removed or covered.

Drums shall not be placed in front of easel-mounted construction signs. Easel-mounted signs shall be placed adjacent to the drum line in the closed lane or shoulder, not off the edge of pavement.

#### 652.3.6 Traffic Control

The following paragraph is added:

A Spotter shall be required at the front and rear of the paving operation on the mainline or as approved by the Resident and shall not be measured for payment. All spotters shall be equipped with handheld radios and spare batteries. The spotters will be required to move and maintain drums during the mobile paving operation.

The following Subsection is added:

#### 652.62 Patrol Vehicle

The Contractor shall provide one traffic control vehicle(s) dedicated for traffic control only, with traffic coordinator(s) to be used for erecting, maintaining and dismantling lane closures as directed by the Resident. The traffic control vehicle(s) shall provide <u>continuous</u> patrolling (24-hours/seven days a week) when lane closures are installed (during non-work and work hours) to replace any and all damaged traffic control devices (arrow boards, variable message signs, barrels, signs, etc.). The traffic coordinator(s) shall report any and all disabled motorists, accidents or other unusual occurrences to the Resident, his representative or the Turnpike Authority's communication dispatcher throughout the duration of any and all lane closures.

The traffic control vehicle shall meet the following requirements:

- a. In good mechanical condition, clean and presentable at all times.
- b. Be equipped with a cellular phone capable of communicating with the Resident, his representative or the Turnpike Authority's communication dispatcher.
- c. Be equipped with a mounted revolving amber light or amber strobe light capable of 360-degree visibility to meet all lighting requirements.
- d. Be equipped with a light bar (arrow board).

If the proper maintenance of traffic and proper provisions for traffic control are not being provided by the Contractor, the Authority reserves the right to assume maintenance of the traffic control and deduct the cost from any money due or to become due under the Contract. The Authority also reserves the right to suspend all work until the Contractor provides the proper maintenance of traffic and provisions for traffic control to the satisfaction of the Resident.

#### 652.7 Method of Measurement

The second paragraph is deleted and replaced with the following:

Spotters will not be measured separately for payment except as noted, but shall be incidental to Item 652.361, Maintenance of Traffic Control Devices.

The following sentences are added:

The patrol vehicle(s), driver(s), assistant(s) and cellular phone(s) will not be measured separately for payment, but shall be incidental to Item 652.361.

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

The Authority will make payment for the State Police officers and vehicles directly to the State Police when utilized for mainline traffic control activities. State Police escorts, if required to move oversize material or equipment loads to the jobsite, will not be paid separately, but shall be incidental to the various pay items.

#### 652.8 Basis of Payment

The following paragraphs are added:

Maintenance of Traffic Control Devices will be paid for at the contract unit price per unit which shall all signs, drums, cones, Truck Mounted Attenuator(s), Automated Speed Limit Sign(s), all spotters and Patrol Vehicles with Drivers. Payment is full compensation for providing, relocating, maintaining or replacing, and removing temporary Traffic Control Devices.

Payment will be made under:

Pay Item		Pay Unit
652.361	Maintenance of Traffic Control Devices	Lump Sum

#### **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.

<u>Installation:</u> 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	Shadow Truck Distance from
	Work Zone of Hazard	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 will not be measured separately for payment, but shall be incidental to Item 652.361, Maintenance of Traffic Control Devices.

#### 652.8.2 Basis of Payment

The last two paragraphs are deleted and replaced with:

The Truck Mounted Attenuator(s) will not be measured separately for payment, but shall be incidental to Item 652.361, Maintenance of Traffic Control Devices.

#### **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. The Contractor shall furnish, operate, and maintain the Automated Trailer Mounted Radar Speed Limit Signs during the project operations.

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.

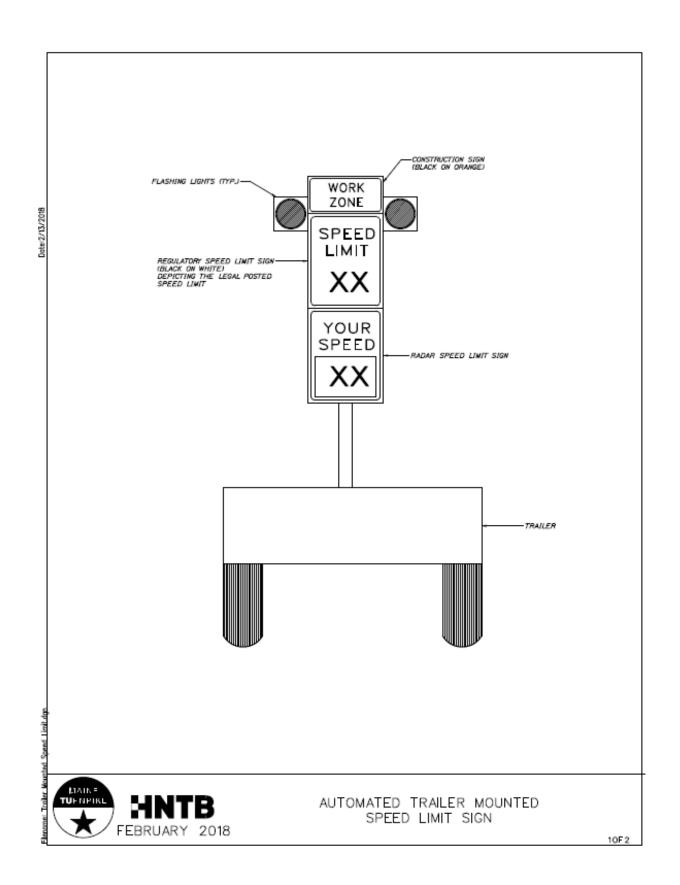
To avoid impairing driver vision, the Contractor shall dim the lighted speed limit readings by 50 percent during nighttime use, and restore full power lighting during daytime operation.

#### 652.7 Method of Measurement

Automated Trailer Mounted Speed Limit Sign will not be measured separately for payment, but shall be incidental to Item 652.361, Maintenance of Traffic Control Devices. 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 shall be incidental to that item.

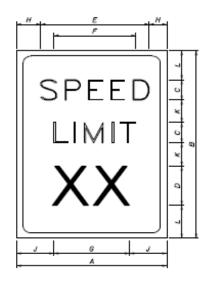
#### 652.8 Basis of Payment

The Automated Trailer Mounted Speed Limit Sign(s) will not be measured separately for payment, but shall be incidental to Item 652.361, Maintenance of Traffic Control Devices.





SIGN \*1 1.25' BORDER, 0.75' INDENT, BLACK ON GRANGE, BB GRADE PLYWOOD SIGN



SIGN \*2 1.25 BORDER, 0.75 INDENT, BLACK ON WHITE: BB GRADE PLYWOOD SIGN

	DIMENSIONS (INCHES) / LETTER FONTS											
	Α	8	с	D	Ε	F	в	н	1	J	ĸ	L
•/	48	20	5D	161/8	16%	14%	/5%	4	2	N/A	N/A	N/A
•2	48	60	8E	IGE	30/4	29/4	29/2	4%	9%	9/4	8	6



FEBRUARY 2018

TRAILER MOUNTED CONSTRUCTION ZONE SPEED LIMIT SIGN

2 OF 2

# APPENDIX A PLANS

### APPENDIX B

### MS4 FORMS

## 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)<sup>1</sup>, 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.

<sup>&</sup>lt;sup>1</sup> 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
  - o 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.

<u>Process Indicators:</u> 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.

<u>Impact Indicators:</u> 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 Stori	nwate 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)<sup>1</sup>, 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.

<sup>&</sup>lt;sup>1</sup> 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
  - o 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
  - o 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 Highwa			
	Maintenance Supervisors and Foremen			
May - June Spill Prevention Control and Countermeasures Plan (SPCC), Stormwater and				
_	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.

<u>Process Indicators:</u> 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.

<u>Impact Indicators:</u> 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 the Permit.	his Stormwater Awareness Plan as required by MTA's MS	4
Contractor Signature of Acknowledgement	Date	
Printed Name	Project Number	